

UNCLASSIFIED

**Department of Defense
Fiscal Year (FY) 2011 President's Budget**

February 2010



Air Force

Justification Book Volume 3

Research, Development, Test & Evaluation, Air Force - 3600

Part 1 of 2

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Table of Volumes

Budget Activities 1, 2, and 3.....	Volume 1
Budget Activities 4, 5, and 6.....	Volume 2
Budget Activity 7.....	Volume 3

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Table of Contents

Introduction and Explanation of Contents..... v

Comptroller Exhibit R-1..... vii

Program Element Table of Contents (by Budget Activity then Line Item Number)..... xxv

Program Element Table of Contents (Alphabetically by Program Element Title)..... xli

Program Element Comparison Summary (R-1 Crosswalk)..... liii

Classified PEs..... lv

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

**Fiscal Year 2011 Program And Budget Estimates
RDT&E Descriptive Summaries
Scientific and Technology Budget Activities
February 2010**

INTRODUCTION AND EXPLANATION OF CONTENTS

1. (U) GENERAL

- A. This document has been prepared to provide information on the United States Air Force (USAF) Research, Development, Test and Evaluation (RDT &E) program elements and projects in the FY 2011 President's Budget.
- 1) All exhibits in this document have been assembled in accordance with DoD 7000.14R, Financial Management Regulation, Volume 2 B, Chapter 5, Section 050402. Exception:
 - a) Exhibit R-1, RDT&E Program, which was distributed under a separate cover due to classification.
 - 2) Other comments on exhibit contents in this document:
 - a) Exhibits R-2/2a and R-3 provide narrative information for all RDT&E program elements and projects within the USAF FY 2011 RDT &E program with the exception of classified program elements. The formats and contents of this document are in accordance with the guidelines and requirements of the Congressional committees in so far as possible.
 - b) The "Other Program Funding Summary" portion of the R-2 includes, in addition to RDT&E funds, Procurement funds and quantities, Military Construction appropriation funds on specific development programs, Operations and Maintenance appropriation funds where they are essential to the development effort described, and where appropriate, Department of Energy (DOE) costs.
 - c) "Facilities Exhibits", Military Construction Project Data, (DD 1391), for improvements to and construction of government-owned facilities funded in RD&E are included in this submission.

2. (U) CLASSIFICATION

- A. All exhibits contained in Volumes I, II, and III are unclassified. Classified exhibits are not included in the submission due to the level of security classification and necessity of special security clearances.

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 Summary
 (Dollars in Thousands)

20 Jan 2010

Summary Recap of Budget Activities	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request
Basic Research	446,388	482,776		482,776	500,473		500,473
Applied Research	1,190,223	1,221,221		1,221,221	1,181,420		1,181,420
Advanced Technology Development	717,735	758,667		758,667	509,305		509,305
Advanced Component Development & Prototypes	2,242,097	1,841,754		1,841,754	1,503,007	16,000	1,519,007
System Development & Demonstration	3,995,427	3,844,675		3,844,675	3,549,475	30,000	3,579,475
RDT&E Management Support	1,484,616	1,062,440	3,291	1,065,731	1,084,374		1,084,374
Operational Systems Development	16,615,291	18,770,188		18,954,548	18,919,248	220,241	19,139,489
Total Research, Development, Test & Eval, AF	26,691,777	27,981,721	187,651	28,169,372	27,247,302	266,241	27,513,543
 Summary Recap of FYDP Programs							
Strategic Forces	85,534	731,044		731,044	500,974		500,974
General Purpose Forces	2,315,375	2,467,564		2,467,564	2,542,733	4,443	2,547,176
Intelligence and Communications	2,372,609	2,804,119		2,804,119	2,972,917	6,100	2,979,017
Mobility Forces	563,770	524,219		524,219	544,547	10,325	554,872
Research and Development	9,312,534	8,936,341	3,291	8,939,632	7,938,100	46,000	7,984,100
Central Supply and Maintenance	277,356	312,881		312,881	260,237		260,237
Training Medical and Other	7,443	7,360		7,360	2,336		2,336
Administration and Associated Activities	65,903	106,410		106,410	74,913		74,913
Support of Other Nations	3,789	3,748		3,748	3,764		3,764
Classified Programs	11,687,464	12,088,035	184,360	12,272,395	12,406,781	199,373	12,606,154
Total Research, Development, Test & Eval, AF	26,691,777	27,981,721	187,651	28,169,372	27,247,302	266,241	27,513,543

Exhibit R-1G: FY 2011 President's Budget (Published), as of January 20, 2010 at 14:07:17

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Se
1	0601102F	Defense Research Sciences	01	299,830	328,471		328,471	350,978		350,978	U
2	0601103F	University Research Initiatives	01	133,526	141,524		141,524	136,297		136,297	U
3	0601108F	High Energy Laser Research Initiatives	01	13,032	12,781		12,781	13,198		13,198	U
		Basic Research		446,388	482,776		482,776	500,473		500,473	
4	0602102F	Materials	02	185,583	179,202		179,202	137,273		137,273	U
5	0602201F	Aerospace Vehicle Technologies	02	119,544	138,563		138,563	144,699		144,699	U
6	0602202F	Human Effectiveness Applied Research	02	93,954	93,527		93,527	87,452		87,452	U
7	0602203F	Aerospace Propulsion	02	244,890	221,503		221,503	207,049		207,049	U
8	0602204F	Aerospace Sensors	02	130,902	136,012		136,012	157,497		157,497	U
9	0602601F	Space Technology	02	136,072	119,125		119,125	111,857		111,857	U
10	0602602F	Conventional Munitions	02	56,596	58,044		58,044	61,330		61,330	U
11	0602605F	Directed Energy Technology	02	60,233	105,231		105,231	103,596		103,596	U
12	0602702F	Command Control and Communications	02	114,510							U
13	0602788F	Dominant Information Sciences and Methods	02		116,785		116,785	117,283		117,283	U
14	0602890F	High Energy Laser Research	02	47,939	53,229		53,229	53,384		53,384	U
		Applied Research		1,190,223	1,221,221		1,221,221	1,181,420		1,181,420	
15	0603112F	Advanced Materials for Weapon Systems	03	62,070	67,856		67,856	33,414		33,414	U

Exhibit R-1G: FY 2011 President's Budget (Published), as of January 20, 2010 at 14:07:17

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Se c
16	0603199F	Sustainment Science and Technology (S&T)	03		2,943		2,943	2,935		2,935	U
17	0603203F	Advanced Aerospace Sensors	03	69,902	52,786		52,786	44,677		44,677	U
18	0603211F	Aerospace Technology Dev/ Demo	03	41,748	88,226		88,226	53,588		53,588	U
19	0603216F	Aerospace Propulsion and Power Technology	03	175,292	192,241		192,241	136,135		136,135	U
20	0603231F	Crew Systems and Personnel Protection Technology	03	35,742							U
21	0603270F	Electronic Combat Technology	03	29,364	32,056		32,056	16,992		16,992	U
22	0603401F	Advanced Spacecraft Technology	03	97,834	98,708		98,708	83,705		83,705	U
23	0603444F	Maui Space Surveillance System (MSSS)	03	36,093	36,661		36,661	5,899		5,899	U
24	0603456F	Human Effectiveness Advanced Technology Development	03		27,390		27,390	24,814		24,814	U
25	0603601F	Conventional Weapons Technology	03	16,771	14,296		14,296	15,755		15,755	U
26	0603605F	Advanced Weapons Technology	03	61,420	44,794		44,794	17,461		17,461	U
27	0603680F	Manufacturing Technology Program	03	54,614	50,502		50,502	39,701		39,701	U
28	0603788F	Battlespace Knowledge Development and Demonstration	03		46,414		46,414	32,382		32,382	U
29	0603789F	C3I Advanced Development	03	32,986							U

Exhibit R-1G: FY 2011 President's Budget (Published), as of January 20, 2010 at 14:07:17

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Sec
30	0603924F	High Energy Laser Advanced Technology Program	03	3,899	3,794		3,794	1,847		1,847	U
		Advanced Technology Development		717,735	758,667		758,667	509,305		509,305	
31	0603260F	Intelligence Advanced Development	04	6,570	5,809		5,809	5,019		5,019	U
32	0603287F	Physical Security Equipment	04	1,659	3,615		3,615	3,576		3,576	U
33	0603423F	Global Positioning System III - Operational Control Segment	04	289,702							U
34	0603430F	Advanced EHF MILSATCOM (SPACE)	04	460,351	461,380		461,380	351,817		351,817	U
35	0603432F	Polar MILSATCOM (SPACE)	04	221,065	252,071		252,071	164,232		164,232	U
36	0603438F	Space Control Technology	04	86,110	100,951		100,951	45,012	16,000	61,012	U
37	0603742F	Combat Identification Technology	04	28,708	28,799		28,799	26,172		26,172	U
38	0603790F	NATO Research and Development	04	4,241	4,351		4,351	4,372		4,372	U
39	0603791F	International Space Cooperative R&D	04	603	632		632	635		635	U
40	0603830F	Space Protection Program (SPP)	04					8,349		8,349	U
41	0603845F	Transformational SATCOM (TSAT)	04	428,618							U
42	0603850F	Integrated Broadcast Service	04	21,020	20,646		20,646	20,580		20,580	U
43	0603851F	Intercontinental Ballistic Missile	04	58,937	68,097		68,097	66,745		66,745	U

Exhibit R-1G: FY 2011 President's Budget (Published), as of January 20, 2010 at 14:07:17

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Se
44	0603854F	Wideband Global SATCOM RDT&E (Space)	04	29,520	70,650		70,650	36,123		36,123	U
45	0603859F	Pollution Prevention	04	13,565	10,396		10,396	2,534		2,534	U
46	0603860F	Joint Precision Approach and Landing Systems	04	7,153	22,953		22,953	13,952		13,952	U
47	0604015F	Next Generation Bomber	04					198,957		198,957	U
48	0604283F	Battle Mgmt Com & Ctrl Sensor Development	04		22,612		22,612				U
49	0604327F	Hard and Deeply Buried Target Defeat System (HDBTDS) Program	04	28,310	20,891		20,891	22,389		22,389	U
50	0604330F	Joint Dual Role Air Dominance Missile	04		6,882		6,882	9,799		9,799	U
51	0604337F	Requirements Analysis and Maturation	04		35,533		35,533	34,339		34,339	U
52	0604436F	Next-Generation MILSATCOM Technology Development	04		50,000		50,000				U
53	0604635F	Ground Attack Weapons Fuze Development	04		18,778		18,778	32,513		32,513	U
54	0604796F	Alternative Fuels	04	30,283	73,020		73,020	24,064		24,064	U
55	0604830F	Automated Air-to-Air Refueling	04	9,610	43,158		43,158	85		85	U
56	0604857F	Operationally Responsive Space	04	228,540	124,308		124,308	93,978		93,978	U
57	0604858F	Tech Transition Program	04		9,611		9,611	12,260		12,260	U

Exhibit R-1G: FY 2011 President's Budget (Published), as of January 20, 2010 at 14:07:17

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Sec
58	0305178F	National Polar-Orbiting Operational Environmental Satellite System (NPOESS)	04	287,532	386,611		386,611	325,505		325,505	U
		Advanced Component Development & Prot		2,242,097	1,841,754		1,841,754	1,503,007	16,000	1,519,007	
59	0603840F	Global Broadcast Service (GBS)	05	17,475	31,072		31,072	18,171		18,171	U
60	0604222F	Nuclear Weapons Support	05	19,845	41,860		41,860	60,545		60,545	U
61	0604226F	B-1B	05	158,081							U
62	0604233F	Specialized Undergraduate Flight Training	05	11,801	10,862		10,862	8,066		8,066	U
63	0604240F	B-2 Advanced Technology Bomber	05	384,190							U
64	0604270F	Electronic Warfare Development	05	66,321	80,275		80,275	89,966		89,966	U
65	0604280F	Joint Tactical Radio	05					631		631	U
66	0604281F	Tactical Data Networks Enterprise	05		87,444		87,444	102,941	30,000	132,941	U
67	0604287F	Physical Security Equipment	05	51	50		50	50		50	U
68	0604329F	Small Diameter Bomb (SDB)	05	122,568	155,415		155,415	153,505		153,505	U
69	0604421F	Counterspace Systems	05	64,318	63,838		63,838	40,276		40,276	U
70	0604425F	Space Situation Awareness Systems	05	211,266	238,377		238,377	426,525		426,525	U
71	0604429F	Airborne Electronic Attack	05	42,173	11,107		11,107	25,937		25,937	U

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Section
72	0604441F	Space Based Infrared System (SBIRS) High EMD	05	542,404	521,156		521,156	530,047		530,047	U
73	0604443F	Third Generation Infrared Surveillance (3GIRS)	05	953	73,369		73,369				U
74	0604602F	Armament/Ordnance Development	05	12,088	18,671		18,671	6,693		6,693	U
75	0604604F	Submunitions	05	1,719	1,784		1,784	1,622		1,622	U
76	0604617F	Agile Combat Support	05	4,518	11,261		11,261	37,987		37,987	U
77	0604706F	Life Support Systems	05	14,907	14,331		14,331	10,650		10,650	U
78	0604735F	Combat Training Ranges	05	12,241	22,718		22,718	36,905		36,905	U
79	0604740F	Integrated Command & Control Applications (IC2A)	05	9,700	6,910		6,910	10		10	U
80	0604750F	Intelligence Equipment	05	2,282	1,495		1,495	1,364		1,364	U
81	0604800F	Joint Strike Fighter (JSF)	05	1,743,569	2,072,897		2,072,897	883,773		883,773	U
82	0604851F	Intercontinental Ballistic Missile	05		60,010		60,010	71,843		71,843	U
83	0604853F	Evolved Expendable Launch Vehicle Program (SPACE)	05	43,628	46,545		46,545	30,245		30,245	U
84	0605011F	RDT&E for Aging Aircraft	05	5,808							U
85	0605221F	Next Generation Aerial Refueling Aircraft	05	22,629	15,000		15,000	863,875		863,875	U
86	0605229F	CSAR HH-60 Recapitalization	05					12,584		12,584	U
87	0605277F	CSAR-X RDT&E	05	15,000	14,975		14,975				U

Exhibit R-1G: FY 2011 President's Budget (Published), as of January 20, 2010 at 14:07:17

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Section
88	0605278F	HC/MC-130 Recap RDT&E	05	11,336	20,582		20,582	15,536		15,536	U
89	0605452F	Joint SIAP Executive Program Office	05		14,877		14,877				U
90	0207434F	Link-16 Support and Sustainment	05	278,961	65,619		65,619				U
91	0207451F	Single Integrated Air Picture (SIAP)	05	49,564	13,399		13,399	1,832		1,832	U
92	0207701F	Full Combat Mission Training	05	77,362	79,807		79,807	57,393		57,393	U
93	0305176F	Combat Survivor Evader Locator	05	12,500							U
94	0401138F	Joint Cargo Aircraft (JCA)	05	16,271	9,353		9,353	26,407		26,407	U
95	0401318F	CV-22	05	17,992	19,640		19,640	18,270		18,270	U
96	0401845F	Airborne Senior Leader C3 (SLC3S)	05	1,906	19,976		19,976	15,826		15,826	U
	System Development & Demonstration			3,995,427	3,844,675		3,844,675	3,549,475	30,000	3,579,475	
97	0604256F	Threat Simulator Development	06	33,951	23,331		23,331	21,245		21,245	U
98	0604759F	Major T&E Investment	06	67,898	67,797		67,797	61,587		61,587	U
99	0605101F	RAND Project Air Force	06	37,674	29,101		29,101	26,752		26,752	U
100	0605502F	Small Business Innovation Research	06	375,035							U
101	0605712F	Initial Operational Test & Evaluation	06	29,085	25,833		25,833	20,665		20,665	U
102	0605807F	Test and Evaluation Support	06	756,327	746,465	3,291	749,756	759,868		759,868	U

Exhibit R-1G: FY 2011 President's Budget (Published), as of January 20, 2010 at 14:07:17

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Sec
103	0605860F	Rocket Systems Launch Program (SPACE)	06	16,853	14,637		14,637	23,551		23,551	U
104	0605864F	Space Test Program (STP)	06	44,707	46,721		46,721	47,623		47,623	U
105	0605976F	Facilities Restoration and Modernization - Test and Evaluation Support	06	47,339	54,809		54,809	46,327		46,327	U
106	0605978F	Facilities Sustainment - Test and Evaluation Support	06	29,618	29,683		29,683	27,579		27,579	U
107	0606323F	Multi-Service Systems Engineering Initiative	06					18,901		18,901	U
108	0702806F	Acquisition and Management Support	06	41,053	18,865		18,865	24,968		24,968	U
109	0804731F	General Skill Training	06	1,215	1,450		1,450	1,544		1,544	U
110	0909999F	Financing for Cancelled Account Adjustments	06	72							U
111	1001004F	International Activities	06	3,789	3,748		3,748	3,764		3,764	U
		RDT&E Management Support		1,484,616	1,062,440	3,291	1,065,731	1,084,374		1,084,374	
112	0603423F	Global Positioning System III - Operational Control Segment	07		292,000		292,000				U
113	0604263F	Common Vertical Lift Support Platform	07	3,858	4,000		4,000				U
114	0605018F	Air Force Integrated Military Human Resources System (AF-IMHRS)	07					43,300		43,300	U
115	0605024F	Anti-Tamper Technology Executive Agency	07	20,407	47,276		47,276	42,255		42,255	U
117	0101113F	B-52 Squadrons	07	39,835	102,330		102,330	146,096		146,096	U

Exhibit R-1G: FY 2011 President's Budget (Published), as of January 20, 2010 at 14:07:17

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Se c
118	0101122F	Air-Launched Cruise Missile (ALCM)	07	384	3,652		3,652	3,631		3,631	U
119	0101126F	B-1B Squadrons	07		143,360		143,360	33,234		33,234	U
120	0101127F	B-2 Squadrons	07		407,189		407,189	260,466		260,466	U
121	0101313F	Strat War Planning System - USSTRATCOM	07	17,013	33,746		33,746	28,441		28,441	U
122	0101314F	Night Fist - USSTRATCOM	07	5,136	5,328		5,328	5,359		5,359	U
124	0102325F	Atmospheric Early Warning System	07		9,832		9,832				U
125	0102326F	Region/Sector Operation Control Center Modernization Program	07	23,151	25,589		25,589	23,732		23,732	U
126	0102823F	Strategic Aerospace Intelligence System Activities	07	15	18		18	15		15	U
127	0203761F	Warfighter Rapid Acquisition Process (WRAP) Rapid Transition Fund	07	29,928	11,968		11,968	10,580		10,580	U
128	0205219F	MQ-9 UAV	07	57,205	93,145		93,145	125,427		125,427	U
129	0207040F	Multi-Platform Electronic Warfare Equipment	07		14,747		14,747	15,574		15,574	U
130	0207131F	A-10 Squadrons	07	3,989	12,197		12,197	5,661		5,661	U
131	0207133F	F-16 Squadrons	07	123,733	142,620		142,620	129,103		129,103	U
132	0207134F	F-15E Squadrons	07	203,816	319,967		319,967	222,677		222,677	U
133	0207136F	Manned Destructive Suppression	07	5,413	9,748		9,748	12,937		12,937	U

Exhibit R-1G: FY 2011 President's Budget (Published), as of January 20, 2010 at 14:07:17

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Se c
134	0207138F	F-22A Squadrons	07	579,710	569,345		569,345	576,330		576,330	U
135	0207142F	F-35 Squadrons	07					217,561		217,561	U
136	0207161F	Tactical AIM Missiles	07	5,585	5,915		5,915	6,040		6,040	U
137	0207163F	Advanced Medium Range Air-to-Air Missile (AMRAAM)	07	43,633	49,971		49,971	62,922		62,922	U
138	0207170F	Joint Helmet Mounted Cueing System (JHMCS)	07	3,095	2,529		2,529	2,407		2,407	U
139	0207224F	Combat Rescue and Recovery	07					944		944	U
140	0207227F	Combat Rescue - Pararescue	07		2,950		2,950	2,921		2,921	U
141	0207247F	AF TENCAP	07	11,547	11,643		11,643	11,648		11,648	U
142	0207249F	Precision Attack Systems Procurement	07		2,950		2,950	3,017		3,017	U
143	0207253F	Compass Call	07	4,526	13,019		13,019	20,652		20,652	U
144	0207268F	Aircraft Engine Component Improvement Program	07	146,359	139,689		139,689	147,396		147,396	U
145	0207277F	ISR Innovations	07		11,261		11,261				U
146	0207325F	Joint Air-to-Surface Standoff Missile (JASSM)	07	32,131	29,494		29,494	20,000		20,000	U
147	0207410F	Air & Space Operations Center (AOC)	07	95,908	101,587		101,587	93,102		93,102	U
148	0207412F	Control and Reporting Center (CRC)	07	18,688	52,177		52,177	58,313		58,313	U
149	0207417F	Airborne Warning and Control System (AWACS)	07	122,425	175,514		175,514	239,755		239,755	U

Exhibit R-1G: FY 2011 President's Budget (Published), as of January 20, 2010 at 14:07:17

UNCLASSIFIED

Page F-11

xvii

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Sec
150	0207418F	Tactical Airborne Control Systems	07	1,486							U
151	0207423F	Advanced Communications Systems	07	28,210	73,009		73,009	67,532		67,532	U
153	0207431F	Combat Air Intelligence System Activities	07		1,475		1,475	3,310		3,310	U
154	0207438F	Theater Battle Management (TBM) C4I	07	18,845	19,033		19,033	15,170		15,170	U
155	0207445F	Fighter Tactical Data Link	07	55,069	66,872		66,872	85,492		85,492	U
156	0207446F	Bomber Tactical Data Link	07	21,603							U
157	0207448F	C2ISR Tactical Data Link	07	1,671	1,659		1,659	1,584		1,584	U
158	0207449F	Command and Control (C2) Constellation	07	30,832	30,293		30,293	24,229		24,229	U
159	0207581F	Joint Surveillance/Target Attack Radar System (JSTARS)	07	97,625	185,616		185,616	168,917		168,917	U
160	0207590F	Seek Eagle	07	21,355	22,071		22,071	19,263		19,263	U
161	0207601F	USAF Modeling and Simulation	07	28,062	27,161		27,161	21,638		21,638	U
162	0207605F	Wargaming and Simulation Centers	07	3,752	7,018		7,018	6,020		6,020	U
163	0207697F	Distributed Training and Exercises	07	6,918	6,740		6,740	2,863		2,863	U
164	0208006F	Mission Planning Systems	07	94,589	81,577		81,577	79,112	4,443	83,555	U
165	0208021F	Information Warfare Support	07	11,780	13,779		13,779	2,294		2,294	U
166	0208059F	Cyber Command Activities	07					1,117		1,117	U

Exhibit R-1G: FY 2011 President's Budget (Published), as of January 20, 2010 at 14:07:17

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Se
173	0301400F	Space Superiority Intelligence	07					10,006		10,006	U
174	0302015F	E-4B National Airborne Operations Center (NAOC)	07	158	26,107		26,107	12,532		12,532	U
175	0303131F	Minimum Essential Emergency Communications Network (MEECN)	07	81,095	72,360		72,360	78,784		78,784	U
176	0303140F	Information Systems Security Program	07	162,815	165,401		165,401	140,017		140,017	U
177	0303141F	Global Combat Support System	07	8,613	3,319		3,319	3,393		3,393	U
178	0303150F	Global Command and Control System	07	3,124	6,279		6,279	3,055		3,055	U
179	0303158F	Joint Command and Control Program (JC2)	07	3,140				2,157		2,157	U
180	0303601F	MILSATCOM Terminals	07	277,501	253,818		253,818	186,582		186,582	U
182	0304260F	Airborne SIGINT Enterprise	07	170,714	166,989		166,989	149,268		149,268	U
185	0305099F	Global Air Traffic Management (GATM)	07	10,584	5,654		5,654	5,708		5,708	U
186	0305103F	Cyber Security Initiative	07	2,020	2,065		2,065	2,030		2,030	U
187	0305105F	DoD Cyber Crime Center	07					279		279	U
188	0305110F	Satellite Control Network (SPACE)	07	54,547	20,825		20,825	21,667		21,667	U
189	0305111F	Weather Service	07	45,918	33,291		33,291	32,373		32,373	U
190	0305114F	Air Traffic Control, Approach, and Landing System (ATCALS)	07	8,796	11,313		11,313	33,268		33,268	U

Exhibit R-1G: FY 2011 President's Budget (Published), as of January 20, 2010 at 14:07:17

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Section
191	0305116F	Aerial Targets	07	10,970	54,807		54,807	63,573		63,573	U
194	0305128F	Security and Investigative Activities	07	1,962	742		742	469		469	U
196	0305146F	Defense Joint Counterintelligence Activities	07	39	39		39	40		40	U
198	0305164F	NAVSTAR Global Positioning System (User Equipment) (SPACE)	07	121,798	137,163		137,163	165,936		165,936	U
199	0305165F	NAVSTAR Global Positioning System (Space and Control Segments)	07	86,648	51,197		51,197	34,471		34,471	U
201	0305173F	Space and Missile Test and Evaluation Center	07	1,920	3,593		3,593	4,572		4,572	U
202	0305174F	Space Warfare Center	07	2,890	2,961		2,961	2,929		2,929	U
203	0305182F	Spacelift Range System (SPACE)	07	13,322	9,915		9,915	9,933		9,933	U
204	0305193F	Intelligence Support to Information Operations (IO)	07	3,627	2,240		2,240	1,254		1,254	U
205	0305205F	Endurance Unmanned Aerial Vehicles	07		48,736		48,736				U
206	0305206F	Airborne Reconnaissance Systems	07	111,170	145,413		145,413	168,963		168,963	U
207	0305207F	Manned Reconnaissance Systems	07	17,811	14,846		14,846	15,337		15,337	U
208	0305208F	Distributed Common Ground/Surface Systems	07	75,251	82,404		82,404	93,398		93,398	U
209	0305219F	MQ-1 Predator A CAV	07	38,605	35,160		35,160	28,913		28,913	U

Exhibit R-1G: FY 2011 President's Budget (Published), as of January 20, 2010 at 14:07:17

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Se
210	0305220F	RQ-4 UAV	07	279,164	317,268		317,268	251,318		251,318	U
211	0305221F	Network-Centric Collaborative Targeting	07	8,783	8,160		8,160	7,267	6,100	13,367	U
212	0305265F	GPS III Space Segment	07	379,046	423,466		423,466	828,171		828,171	U
213	0305614F	JSpOC Mission System	07		136,271		136,271	132,706		132,706	U
214	0305887F	Intelligence Support to Information Warfare	07	5,251	5,220		5,220	5,512		5,512	U
215	0305913F	NUDET Detection System (SPACE)	07	41,102	83,846		83,846	72,199		72,199	U
216	0305924F	National Security Space Office	07	7,512				10,630		10,630	U
217	0305940F	Space Situation Awareness Operations	07	15,579	53,805		53,805	43,838		43,838	U
218	0307141F	Information Operations Technology Integration & Tool Development	07	18,042	29,788		29,788	21,912		21,912	U
219	0308699F	Shared Early Warning (SEW)	07	3,060	3,047		3,047	2,952		2,952	U
220	0401115F	C-130 Airlift Squadron	07	156,010	109,250		109,250	113,107		113,107	U
221	0401119F	C-5 Airlift Squadrons (IF)	07	110,191	85,266		85,266	58,990		58,990	U
222	0401130F	C-17 Aircraft (IF)	07	182,754	161,855		161,855	177,212		177,212	U
223	0401132F	C-130J Program	07	25,190	30,019		30,019	26,770		26,770	U
224	0401134F	Large Aircraft IR Countermeasures (LAIRCM)	07	22,490	26,784		26,784	17,227		17,227	U
225	0401218F	KC-135s	07	11,917	10,220		10,220	20,453		20,453	U
226	0401219F	KC-10s	07	3,800	35,586		35,586	56,669		56,669	U

Exhibit R-1G: FY 2011 President's Budget (Published), as of January 20, 2010 at 14:07:17

UNCLASSIFIED

Page F-15

xxi

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Se
227	0401314F	Operational Support Airlift	07		4,916		4,916	4,988		4,988	U
228	0401315F	C-STOL Aircraft	07					1,283		1,283	U
229	0401839F	Air Mobility Tactical Data Link	07	7,700							U
230	0408011F	Special Tactics / Combat Control	07	7,549	11,354		11,354	7,345	10,325	17,670	U
231	0702207F	Depot Maintenance (Non-IF)	07	1,489	1,508		1,508	1,514		1,514	U
232	0702976F	Facilities Restoration & Modernization - Logistics	07	44,778	8,000		8,000				U
233	0708012F	Logistics Support Activities	07	23,042							U
234	0708610F	Logistics Information Technology (LOGIT)	07	144,861	246,250		246,250	227,614		227,614	U
235	0708611F	Support Systems Development	07	22,133	38,258		38,258	6,141		6,141	U
236	0804743F	Other Flight Training	07	2,000	805		805	667		667	U
237	0804757F	Joint National Training Center	07	3,115	3,220		3,220	9		9	U
238	0804772F	Training Developments	07		1,769		1,769				U
239	0808716F	Other Personnel Activities	07	1,113	116		116	116		116	U
240	0901202F	Joint Personnel Recovery Agency	07	5,590	11,376		11,376	6,107		6,107	U
241	0901212F	Service-Wide Support (Not Otherwise Accounted For)	07	3,648							U

UNCLASSIFIED

Department of the Air Force
 FY 2011 President's Budget
 Exhibit R-1 FY 2011 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

Appropriation: 3600F Research, Development, Test & Eval, AF

Date: 20 Jan 2010

Line No	Program Element Number	Item	Act	FY 2009 (Base & OCO)	FY 2010 Base & OCO Enacted	FY 2010 Supplemental Request	FY 2010 Total	FY 2011 Base	FY 2011 OCO	FY 2011 Total Request	Se c
242	0901218F	Civilian Compensation Program	07	14,647	8,174		8,174	7,811		7,811	U
243	0901220F	Personnel Administration	07	18,947	30,969		30,969	11,179		11,179	U
244	0901538F	Financial Management Information Systems Development	07	22,999	55,891		55,891	49,816		49,816	U
9999	9999999999	Classified Programs		11,687,464	12,088,035	184,360	12,272,395	12,406,781	199,373	12,606,154	U
		Operational Systems Development		16,615,291	18,770,188		18,954,548	18,919,248	220,241	19,139,489	
Total Research, Development, Test & Eval, AF				26,691,777	27,981,721	187,651	28,169,372	27,247,302	266,241	27,513,543	

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Table of Contents (by Budget Activity then Line Item Number)

Budget Activity 01: Basic Research

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
01	01	0601102F	Defense Research Sciences.....	Volume 1 - 1
02	01	0601103F	University Research Initiatives.....	Volume 1 - 73
03	01	0601108F	High Energy Laser Research Initiatives.....	Volume 1 - 85

Budget Activity 02: Applied Research

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
04	02	0602102F	Materials.....	Volume 1 - 93
05	02	0602201F	Aerospace Vehicle Technologies.....	Volume 1 - 143
06	02	0602202F	Human Effectiveness Applied Research.....	Volume 1 - 165
07	02	0602203F	Aerospace Propulsion.....	Volume 1 - 205
08	02	0602204F	Aerospace Sensors.....	Volume 1 - 265
09	02	0602601F	Space Technology.....	Volume 1 - 317
10	02	0602602F	Conventional Munitions.....	Volume 1 - 347

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 02: Applied Research

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
11	02	0602605F	DIRECTED ENERGY TECHNOLOGY.....	Volume 1 - 361
12	02	0602702F	Command Control and Communications.....	Volume 1 - 379
13	02	0602788F	Dominant Information Technology.....	Volume 1 - 403
14	02	0602890F	High Energy Laser Research.....	Volume 1 - 437

Budget Activity 03: Advanced Technology Development (ATD)

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
15	03	0603112F	Advanced Materials for Weapon Systems.....	Volume 1 - 449
16	03	0603199F	Sustainment Science and Technology (S&T).....	Volume 1 - 473
17	03	0603203F	Advanced Aerospace Sensors.....	Volume 1 - 479
18	03	0603211F	Aerospace Technology Dev/Demo.....	Volume 1 - 509
19	03	0603216F	Aerospace Propulsion and Power Technology.....	Volume 1 - 521
20	03	0603231F	Crew Systems and Personnel Protection Technology.....	Volume 1 - 563
21	03	0603270F	Electronic Combat Technology.....	Volume 1 - 583
22	03	0603401F	Advanced Spacecraft Technology.....	Volume 1 - 599
23	03	0603444F	MAUI SPACE SURVEILLANCE SYSTEM.....	Volume 1 - 631

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 03: Advanced Technology Development (ATD)

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
24	03	0603456F	Human Effectiveness Adv Tech Dev.....	Volume 1 - 637
25	03	0603601F	Conventional Weapons Technology.....	Volume 1 - 663
26	03	0603605F	Advanced Weapons Technology.....	Volume 1 - 671
27	03	0603680F	Manufacturing Technologies.....	Volume 1 - 691
28	03	0603788F	Global Information Dev/Demo.....	Volume 1 - 705
29	03	0603789F	C3I Advanced Development.....	Volume 1 - 733
30	03	0603924F	High Energy Laser Advanced Technology Program.....	Volume 1 - 749

Budget Activity 04: Advanced Component Development & Prototypes (ACD&P)

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
31	04	0603260F	Intelligence Advanced Development.....	Volume 2 - 1
32	04	0603287F	Physical Security Equipment.....	Volume 2 - 29
33	04	0603423F	Global Positioning System III - Operational Control Segment.....	Volume 2 - 41
34	04	0603430F	Advanced (EHF MILSATCOM (Space)).....	Volume 2 - 51
35	04	0603432F	Polar MILSATCOM (Space).....	Volume 2 - 61
36	04	0603438F	Space Control Technology.....	Volume 2 - 71

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 04: Advanced Component Development & Prototypes (ACD&P)

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
37	04	0603742F	Combat Identification Technology.....	Volume 2 - 95
38	04	0603790F	NATO Cooperative R&D.....	Volume 2 - 117
39	04	0603791F	International Space Cooperative R&D.....	Volume 2 - 153
40	04	0603830F	Space Protection Program.....	Volume 2 - 165
41	04	0603845F	Transformational SATCOM (TSAT).....	Volume 2 - 175
42	04	0603850F	Integrated Broadcast Service (DEM/VAL).....	Volume 2 - 185
43	04	0603851F	ICBM - DEM/VAL.....	Volume 2 - 197
44	04	0603854F	Wideband MILSATCOM (Space).....	Volume 2 - 233
45	04	0603859F	Pollution Prevention.....	Volume 2 - 251
46	04	0603860F	Joint Precision Approach and Landing System.....	Volume 2 - 259
47	04	0604015F	Long Range Strike.....	Volume 2 - 273
48	04	0604283F	BMC2 Sensor Development.....	Volume 2 - 279
49	04	0604327F	Hardened Target Munitions.....	Volume 2 - 289
50	04	0604330F	Joint Dual-Role Air Dominance Missile (JDRADM).....	Volume 2 - 301
51	04	0604337F	Requirements Analysis and Maturation.....	Volume 2 - 309
52	04	0604436F	Next-Generation MILSATCOM Technology.....	Volume 2 - 333
53	04	0604635F	Ground Attack Weapons Fuze Development.....	Volume 2 - 341
54	04	0604796F	Alternative Fuels.....	Volume 2 - 353

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 04: Advanced Component Development & Prototypes (ACD&P)

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
55	04	0604830F	Automated Air-to-Air Refueling.....	Volume 2 - 363
56	04	0604857F	Operationally Responsive Space.....	Volume 2 - 373
57	04	0604858F	Technology Transition Program.....	Volume 2 - 395
58	04	0305178F	National Polar-Orbiting Op Env Satellite.....	Volume 2 - 405

Budget Activity 05: Development & Demonstration (SDD)

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
59	05	0603840F	Global Broadcast Service (GBS).....	Volume 2 - 415
60	05	0604222F	Nuclear Weapons Support.....	Volume 2 - 425
61	05	0604226F	B-1B.....	Volume 2 - 461
62	05	0604233F	Specialized Undergraduate Pilot Training.....	Volume 2 - 473
63	05	0604240F	B-2 Advanced Technology Bomber.....	Volume 2 - 493
64	05	0604270F	EW Development.....	Volume 2 - 507
65	05	0604280F	JOINT TACTICAL RADIO SYSTEMS (JTRS).....	Volume 2 - 535
66	05	0604281F	TACTICAL DATA NETWORKS ENTERPRISE.....	Volume 2 - 543
67	05	0604287F	Physical Security Equipment.....	Volume 2 - 567

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 05: Development & Demonstration (SDD)

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
68	05	0604329F	Small Diameter Bomb.....	Volume 2 - 575
69	05	0604421F	Counterspace Systems.....	Volume 2 - 589
70	05	0604425F	Space Situation Awareness Systems.....	Volume 2 - 613
71	05	0604429F	AIRBORNE ELECTRONIC ATTACK.....	Volume 2 - 655
72	05	0604441F	Space Based Infrared Systems (SBIRS) High EMD.....	Volume 2 - 673
73	05	0604443F	Third Generation Infrared Surveillance (3GIRS).....	Volume 2 - 689
74	05	0604602F	Armament/Ordnance Development.....	Volume 2 - 699
75	05	0604604F	Submunitions.....	Volume 2 - 721
76	05	0604617F	Agile Combat Support.....	Volume 2 - 731
77	05	0604706F	Life Support Systems.....	Volume 2 - 749
78	05	0604735F	Combat Training Ranges.....	Volume 2 - 765
79	05	0604740F	Integrated Command & Control Applications.....	Volume 2 - 779
80	05	0604750F	Intelligence Equipment.....	Volume 2 - 793
81	05	0604800F	Joint Strike Fighter EMD.....	Volume 2 - 805
82	05	0604851F	ICBM - EMD.....	Volume 2 - 827
83	05	0604853F	Evolved Expendable Launch Vehicle - EMD.....	Volume 2 - 845
84	05	0605011F	RDT&E For Aging Aircraft.....	Volume 2 - 855
85	05	0605221F	KC-X, Next Generation Aerial Refueling Aircraft.....	Volume 2 - 863

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 05: Development & Demonstration (SDD)

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
86	05	0605229F	CSAR HH-60 Recapitalization.....	Volume 2 - 875
87	05	0605277F	CSAR-X.....	Volume 2 - 889
88	05	0605278F	HC/MC-130 Recap.....	Volume 2 - 899
89	05	0605452F	Joint SIAP Program Executive Office.....	Volume 2 - 909
90	05	0207434F	Link 16 Support and Sustainment.....	Volume 2 - 919
91	05	0207451F	Single Integrated Air Picture (SIAP).....	Volume 2 - 943
92	05	0207701F	Full Combat Mission Training.....	Volume 2 - 965
93	05	0305176F	Combat Survivor Evader Locator.....	Volume 2 - 989
94	05	0401138F	Joint Cargo Aircraft.....	Volume 2 - 1001
95	05	0401318F	CV-22.....	Volume 2 - 1011
96	05	0401845F	SLC3S-A (Senior Leader C3S).....	Volume 2 - 1021

Budget Activity 06: RDT&E Management Support

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
97	06	0604256F	Threat Simulator Development.....	Volume 2 - 1031
98	06	0604759F	Major T&E Investment.....	Volume 2 - 1041

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 06: RDT&E Management Support

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
99	06	0605101F	RAND Project Air Force.....	Volume 2 - 1053
101	06	0605712F	Initial Operational Test & Evaluation.....	Volume 2 - 1061
102	06	0605807F	Test and Evaluation Support.....	Volume 2 - 1073
103	06	0605860F	Rocket Systems Launch Program (RSLP).....	Volume 2 - 1083
104	06	0605864F	Space Test Program.....	Volume 2 - 1091
105	06	0605976F	Facility Restoration and Modernization - T&E.....	Volume 2 - 1099
106	06	0605978F	Facility Sustainment - T&E Support.....	Volume 2 - 1107
107	06	0606323F	Multi-Service Systems Engineering.....	Volume 2 - 1115
108	06	0702806F	Acquisition and Command Support.....	Volume 2 - 1123
109	06	0804731F	GENERAL SKILL TRAINING.....	Volume 2 - 1129
110	06	0909990F	Cancelled/Upward Obligation Adjustments.....	Volume 2 - 1135
111	06	1001004F	International Activities.....	Volume 2 - 1139

Budget Activity 07: Operational Systems Development

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
113	07	0604263F	CVLSP.....	Volume 3 - 1

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 07: Operational Systems Development

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
114	07	0605018F	Air Force Integrated Military Human Resources System (AF-IMHRS).....	Volume 3 - 9
115	07	0605024F	Anti-Tamper Technology Executive Agent.....	Volume 3 - 19
117	07	0101113F	B-52 SQUADRONS.....	Volume 3 - 31
118	07	0101122F	AIR LAUNCHED CRUISE MISSILE.....	Volume 3 - 55
119	07	0101126F	B-1B SQUADRONS.....	Volume 3 - 65
120	07	0101127F	B-2 SQUADRONS.....	Volume 3 - 77
121	07	0101313F	STRAT WAR PLANNING SYS - USSTRATCOM.....	Volume 3 - 91
124	07	0102325F	JOINT SURVEILLANCE SYSTEM.....	Volume 3 - 119
125	07	0102326F	REGION/ SECTOR OPERATIONS CONTROL CENTER.....	Volume 3 - 129
126	07	0102823F	STRAT AEROSPACE INTEL SYS ACTIVITIES.....	Volume 3 - 139
127	07	0203761F	Warfighter Rapid Acquisition Program.....	Volume 3 - 147
128	07	0205219F	MQ-9 Development and Fielding.....	Volume 3 - 155
129	07	0207040F	Multi-Platform Electronics.....	Volume 3 - 171
130	07	0207131F	A-10 SQUADRONS.....	Volume 3 - 179
131	07	0207133F	F-16 SQUADRONS.....	Volume 3 - 193
132	07	0207134F	F-15E SQUADRONS.....	Volume 3 - 211
133	07	0207136F	Manned Destructive Suppression.....	Volume 3 - 231
134	07	0207138F	F-22 SQUADRONS.....	Volume 3 - 243

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 07: Operational Systems Development

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
135	07	0207142F	Joint Strike Fighter Squadrons.....	Volume 3 - 259
136	07	0207161F	Tactical AIM Missiles.....	Volume 3 - 269
137	07	0207163F	Advanced Medium Range Air-to-Air Missile.....	Volume 3 - 281
138	07	0207170F	JHMCS.....	Volume 3 - 295
139	07	0207224F	COMBAT RESCUE AND RECOVERY.....	Volume 3 - 305
140	07	0207227F	Pararescue (Guardian Angel Weapon System).....	Volume 3 - 313
141	07	0207247F	Air Force TENCAP.....	Volume 3 - 321
142	07	0207249F	Precision Attack Systems.....	Volume 3 - 333
143	07	0207253F	Compass Call.....	Volume 3 - 341
144	07	0207268F	Aircraft Engine Component Improvement Program (CIP).....	Volume 3 - 349
145	07	0207277F	Chief's Innovation Program.....	Volume 3 - 367
146	07	0207325F	Joint Air-to-Surface Standoff Missile (JASSM).....	Volume 3 - 381
147	07	0207410F	Air and Space Operations Center - Weapon System (AOC-WS).....	Volume 3 - 399
148	07	0207412F	Control and Reporting Center (CRC).....	Volume 3 - 443
149	07	0207417F	Airborne Warning and Control System (AWACS).....	Volume 3 - 467
150	07	0207418F	TAC AIRBORNE CONTROL SYSTEM.....	Volume 3 - 485
151	07	0207423F	Advanced Communications Systems.....	Volume 3 - 493
153	07	0207431F	Combat Air Intelligence System.....	Volume 3 - 515

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 07: Operational Systems Development

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
154	07	0207438F	Theater Battle Management (TBM) C4I.....	Volume 3 - 527
155	07	0207445F	FIGHTER TACTICAL DATA LINK.....	Volume 3 - 537
156	07	0207446F	Bomber Tactical Data Link.....	Volume 3 - 553
157	07	0207448F	C2ISR Tactical Data Link.....	Volume 3 - 563
158	07	0207449F	C2 Constellation.....	Volume 3 - 573
159	07	0207581F	JOINT STARS.....	Volume 3 - 603
160	07	0207590F	Seek Eagle.....	Volume 3 - 615
161	07	0207601F	USAF Modeling and Simulation.....	Volume 3 - 627
162	07	0207605F	Wargaming and Simulation Centers.....	Volume 3 - 653
163	07	0207697F	Distributed Training and Exercises.....	Volume 3 - 665
164	07	0208006F	Mission Planning Systems.....	Volume 3 - 673
165	07	0208021F	Information Warfare Support.....	Volume 3 - 699
166	07	0208059F	CYBER Command.....	Volume 3 - 711
173	07	0301400F	SPACE SUPERIORITY INTELLIGENCE.....	Volume 3 - 717
174	07	0302015F	E-4B NATIONAL AIRBORNE OPERATIONS CENTER.....	Volume 3 - 725
175	07	0303131F	Minimum Essential Emergency Communications Network (MEECN).....	Volume 3 - 745
176	07	0303140F	Information Systems Security Program.....	Volume 3 - 769
177	07	0303141F	Global Combat Support System (GCSS).....	Volume 3 - 815

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 07: Operational Systems Development

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
178	07	0303150F	WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM.....	Volume 3 - 825
179	07	0303158F	Joint Command and Control.....	Volume 3 - 835
180	07	0303601F	MILSATCOM Terminals.....	Volume 3 - 845
182	07	0304260F	Airborne SIGINT Enterprise (JMIP).....	Volume 3 - 857
185	07	0305099F	Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM).....	Volume 3 - 901
186	07	0305103F	Cyber Security Initiative.....	Volume 3 - 911
187	07	0305105F	DoD Cyber Crime Center.....	Volume 3 - 919
188	07	0305110F	Satellite Control Network.....	Volume 3 - 925
189	07	0305111F	WEATHER SERVICE.....	Volume 3 - 935
190	07	0305114F	Air Traffic Control/Approach/Landing System (ATCALs).....	Volume 3 - 947
191	07	0305116F	AERIAL TARGETS.....	Volume 3 - 959
194	07	0305128F	Security And Investigative Activities.....	Volume 3 - 975
196	07	0305146F	Defense Joint Counter Intelligence Program.....	Volume 3 - 985
198	07	0305164F	NAVSTAR Global Positioning System User Equipment Space.....	Volume 3 - 991
199	07	0305165F	NAVSTAR GPS (Space).....	Volume 3 - 1001
201	07	0305173F	Space & Missile Test & Evaluation Center.....	Volume 3 - 1011
202	07	0305174F	SPACE WARFARE CENTER.....	Volume 3 - 1021
203	07	0305182F	Spacelift Range System.....	Volume 3 - 1029

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 07: Operational Systems Development

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
204	07	0305193F	INTEL SPT TO INFO OPS.....	Volume 3 - 1041
205	07	0305205F	Endurance Unmanned Aerial Vehicles.....	Volume 3 - 1051
206	07	0305206F	Airborne Reconnaissance Systems.....	Volume 3 - 1059
207	07	0305207F	Manned Reconnaissance System.....	Volume 3 - 1101
208	07	0305208F	Distributed Common Ground Systems.....	Volume 3 - 1111
209	07	0305219F	PREDATOR DEVELOPMENT/FIELDING.....	Volume 3 - 1131
210	07	0305220F	GLOBAL HAWK DEVELOPMENT/FIELDING.....	Volume 3 - 1145
211	07	0305221F	Network Centric Collaborative Targeting.....	Volume 3 - 1171
212	07	0305265F	GPS III Space Segment.....	Volume 3 - 1181
213	07	0305614F	JSpOC Mission System.....	Volume 3 - 1197
214	07	0305887F	Electronic Combat Intelligence Support.....	Volume 3 - 1225
215	07	0305913F	NUDET Detection System (Space).....	Volume 3 - 1237
216	07	0305924F	National Security Space Office.....	Volume 3 - 1247
217	07	0305940F	Space Situation Awareness Operations.....	Volume 3 - 1255
218	07	0307141F	NASS, IO TECH INTEGRATION & TOOL DEV.....	Volume 3 - 1269
219	07	0308699F	Shared Early Warning System.....	Volume 3 - 1281
220	07	0401115F	C-130 AIRLIFT SQUADRONS.....	Volume 3 - 1291
221	07	0401119F	C-5 Airlift Squadrons.....	Volume 3 - 1315

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 07: Operational Systems Development

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
222	07	0401130F	C-17 Aircraft.....	Volume 3 - 1341
223	07	0401132F	C-130J PROGRAM.....	Volume 3 - 1353
224	07	0401134F	Large Aircraft InfraRed Counter Measures (LAIRCM).....	Volume 3 - 1367
225	07	0401218F	KC-135s.....	Volume 3 - 1379
226	07	0401219F	KC-10S.....	Volume 3 - 1397
227	07	0401314F	OPERATIONAL SUPPORT AIRLIFT.....	Volume 3 - 1409
228	07	0401315F	C-STOL AIRCRAFT.....	Volume 3 - 1417
229	07	0401839F	Airlift/Other Tactical Data Link.....	Volume 3 - 1425
230	07	0408011F	SPECIAL TACTICS/COMBAT CONTROL.....	Volume 3 - 1439
231	07	0702207F	Depot Maintenance (Non-IF).....	Volume 3 - 1449
232	07	0702976F	Facilities Restoration & Modernization (Logistics).....	Volume 3 - 1457
233	07	0708012F	Logistic Support Activities.....	Volume 3 - 1465
234	07	0708610F	Logistics Information Technology (LOGIT).....	Volume 3 - 1473
235	07	0708611F	Support Systems Development.....	Volume 3 - 1485
236	07	0804743F	OTHER FLIGHT TRAINING.....	Volume 3 - 1515
237	07	0804757F	JOINT NATIONAL TRAINING CENTER.....	Volume 3 - 1523
238	07	0804772F	TRAINING DEVELOPMENTS.....	Volume 3 - 1533
239	07	0808716F	OTHER PERSONNEL ACTIVITIES.....	Volume 3 - 1541

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 07: Operational Systems Development

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
240	07	0901202F	JOINT PERSONNEL RECOVERY AGENCY (JPRA).....	Volume 3 - 1547
241	07	0901212F	SERVICE-WIDE SUPPORT.....	Volume 3 - 1557
242	07	0901218F	Civilian Compensation Program.....	Volume 3 - 1565
243	07	0901220F	PERSONNEL ADMINISTRATION.....	Volume 3 - 1571
244	07	0901538F	Financial Management Information Systems (FMIS).....	Volume 3 - 1589

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Table of Contents (Alphabetically by Program Element Title)

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
A-10 SQUADRONS	0207131F	130	07.....Volume 3 -	179
Acquisition and Command Support	0702806F	108	06.....Volume 2 -	1123
Advanced (EHF MILSATCOM (Space)	0603430F	34	04.....Volume 2 -	51
Advanced Aerospace Sensors	0603203F	17	03.....Volume 1 -	479
Advanced Communications Systems	0207423F	151	07.....Volume 3 -	493
Advanced Materials for Weapon Systems	0603112F	15	03.....Volume 1 -	449
Advanced Medium Range Air-to-Air Missile	0207163F	137	07.....Volume 3 -	281
Advanced Spacecraft Technology	0603401F	22	03.....Volume 1 -	599
Advanced Weapons Technology	0603605F	26	03.....Volume 1 -	671
AERIAL TARGETS	0305116F	191	07.....Volume 3 -	959
Aerospace Propulsion	0602203F	07	02.....Volume 1 -	205
Aerospace Propulsion and Power Technology	0603216F	19	03.....Volume 1 -	521
Aerospace Sensors	0602204F	08	02.....Volume 1 -	265
Aerospace Technology Dev/Demo	0603211F	18	03.....Volume 1 -	509
Aerospace Vehicle Technologies	0602201F	05	02.....Volume 1 -	143
Agile Combat Support	0604617F	76	05.....Volume 2 -	731
Air and Space Operations Center - Weapon System (AOC-WS)	0207410F	147	07.....Volume 3 -	399

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
AIRBORNE ELECTRONIC ATTACK	0604429F	71	05.....Volume 2 -	655
Airborne Reconnaissance Systems	0305206F	206	07.....Volume 3 -	1059
Airborne SIGINT Enterprise (JMIP)	0304260F	182	07.....Volume 3 -	857
Airborne Warning and Control System (AWACS)	0207417F	149	07.....Volume 3 -	467
Aircraft Engine Component Improvement Program (CIP)	0207268F	144	07.....Volume 3 -	349
Air Force Integrated Military Human Resources System (AF-IMHRS)	0605018F	114	07.....Volume 3 -	9
Air Force TENCAP	0207247F	141	07.....Volume 3 -	321
AIR LAUNCHED CRUISE MISSILE	0101122F	118	07.....Volume 3 -	55
Airlift/Other Tactical Data Link	0401839F	229	07.....Volume 3 -	1425
Air Traffic Control/Approach/Landing System (ATCAL)	0305114F	190	07.....Volume 3 -	947
Alternative Fuels	0604796F	54	04.....Volume 2 -	353
Anti-Tamper Technology Executive Agent	0605024F	115	07.....Volume 3 -	19
Armament/Ordnance Development	0604602F	74	05.....Volume 2 -	699
Automated Air-to-Air Refueling	0604830F	55	04.....Volume 2 -	363
B-1B	0604226F	61	05.....Volume 2 -	461
B-1B SQUADRONS	0101126F	119	07.....Volume 3 -	65
B-2 Advanced Technology Bomber	0604240F	63	05.....Volume 2 -	493
B-2 SQUADRONS	0101127F	120	07.....Volume 3 -	77
B-52 SQUADRONS	0101113F	117	07.....Volume 3 -	31
BMC2 Sensor Development	0604283F	48	04.....Volume 2 -	279

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Bomber Tactical Data Link	0207446F	156	07.....Volume 3 -	553
C-130 AIRLIFT SQUADRONS	0401115F	220	07.....Volume 3 -	1291
C-130J PROGRAM	0401132F	223	07.....Volume 3 -	1353
C-17 Aircraft	0401130F	222	07.....Volume 3 -	1341
C2 Constellation	0207449F	158	07.....Volume 3 -	573
C2ISR Tactical Data Link	0207448F	157	07.....Volume 3 -	563
C3I Advanced Development	0603789F	29	03.....Volume 1 -	733
C-5 Airlift Squadrons	0401119F	221	07.....Volume 3 -	1315
Cancelled/Upward Obligation Adjustments	0909990F	110	06.....Volume 2 -	1135
Chief's Innovation Program	0207277F	145	07.....Volume 3 -	367
Civilian Compensation Program	0901218F	242	07.....Volume 3 -	1565
Combat Air Intelligence System	0207431F	153	07.....Volume 3 -	515
Combat Identification Technology	0603742F	37	04.....Volume 2 -	95
COMBAT RESCUE AND RECOVERY	0207224F	139	07.....Volume 3 -	305
Combat Survivor Evader Locator	0305176F	93	05.....Volume 2 -	989
Combat Training Ranges	0604735F	78	05.....Volume 2 -	765
Command Control and Communications	0602702F	12	02.....Volume 1 -	379
Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)	0305099F	185	07.....Volume 3 -	901
Compass Call	0207253F	143	07.....Volume 3 -	341
Control and Reporting Center (CRC)	0207412F	148	07.....Volume 3 -	443

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Conventional Munitions	0602602F	10	02.....Volume 1 - 347	
Conventional Weapons Technology	0603601F	25	03.....Volume 1 - 663	
Counterspace Systems	0604421F	69	05.....Volume 2 - 589	
Crew Systems and Personnel Protection Technology	0603231F	20	03.....Volume 1 - 563	
CSAR HH-60 Recapitalization	0605229F	86	05.....Volume 2 - 875	
CSAR-X	0605277F	87	05.....Volume 2 - 889	
C-STOL AIRCRAFT	0401315F	228	07.....Volume 3 - 1417	
CV-22	0401318F	95	05.....Volume 2 - 1011	
CVLSP	0604263F	113	07..... Volume 3 - 1	
CYBER Command	0208059F	166	07.....Volume 3 - 711	
Cyber Security Initiative	0305103F	186	07.....Volume 3 - 911	
Defense Joint Counter Intelligence Program	0305146F	196	07.....Volume 3 - 985	
Defense Research Sciences	0601102F	01	01..... Volume 1 - 1	
Depot Maintenance (Non-IF)	0702207F	231	07.....Volume 3 - 1449	
DIRECTED ENERGY TECHNOLOGY	0602605F	11	02.....Volume 1 - 361	
Distributed Common Ground Systems	0305208F	208	07.....Volume 3 - 1111	
Distributed Training and Exercises	0207697F	163	07.....Volume 3 - 665	
DoD Cyber Crime Center	0305105F	187	07.....Volume 3 - 919	
Dominant Information Technology	0602788F	13	02.....Volume 1 - 403	
E-4B NATIONAL AIRBORNE OPERATIONS CENTER	0302015F	174	07.....Volume 3 - 725	

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Electronic Combat Intelligence Support	0305887F	214	07.....Volume 3 -	1225
Electronic Combat Technology	0603270F	21	03.....Volume 1 -	583
Endurance Unmanned Aerial Vehicles	0305205F	205	07.....Volume 3 -	1051
Evolved Expendable Launch Vehicle - EMD	0604853F	83	05.....Volume 2 -	845
EW Development	0604270F	64	05.....Volume 2 -	507
F-15E SQUADRONS	0207134F	132	07.....Volume 3 -	211
F-16 SQUADRONS	0207133F	131	07.....Volume 3 -	193
F-22 SQUADRONS	0207138F	134	07.....Volume 3 -	243
Facilities Restoration & Modernization (Logistics)	0702976F	232	07.....Volume 3 -	1457
Facility Restoration and Modernization - T&E	0605976F	105	06.....Volume 2 -	1099
Facility Sustainment - T&E Support	0605978F	106	06.....Volume 2 -	1107
FIGHTER TACTICAL DATA LINK	0207445F	155	07.....Volume 3 -	537
Financial Management Information Systems (FMIS)	0901538F	244	07.....Volume 3 -	1589
Full Combat Mission Training	0207701F	92	05.....Volume 2 -	965
GENERAL SKILL TRAINING	0804731F	109	06.....Volume 2 -	1129
Global Broadcast Service (GBS)	0603840F	59	05.....Volume 2 -	415
Global Combat Support System (GCSS)	0303141F	177	07.....Volume 3 -	815
GLOBAL HAWK DEVELOPMENT/FIELDING	0305220F	210	07.....Volume 3 -	1145
Global Information Dev/Demo	0603788F	28	03.....Volume 1 -	705
Global Positioning System III - Operational Control Segment	0603423F	33	04.....Volume 2 -	41

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
GPS III Space Segment	0305265F	212	07.....Volume 3 -	1181
Ground Attack Weapons Fuze Development	0604635F	53	04.....Volume 2 -	341
Hardened Target Munitions	0604327F	49	04.....Volume 2 -	289
HC/MC-130 Recap	0605278F	88	05.....Volume 2 -	899
High Energy Laser Advanced Technology Program	0603924F	30	03.....Volume 1 -	749
High Energy Laser Research	0602890F	14	02.....Volume 1 -	437
High Energy Laser Research Initiatives	0601108F	03	01.....Volume 1 -	85
Human Effectiveness Adv Tech Dev	0603456F	24	03.....Volume 1 -	637
Human Effectiveness Applied Research	0602202F	06	02.....Volume 1 -	165
ICBM - DEM/VAL	0603851F	43	04.....Volume 2 -	197
ICBM - EMD	0604851F	82	05.....Volume 2 -	827
Information Systems Security Program	0303140F	176	07.....Volume 3 -	769
Information Warfare Support	0208021F	165	07.....Volume 3 -	699
Initial Operational Test & Evaluation	0605712F	101	06.....Volume 2 -	1061
Integrated Broadcast Service (DEM/VAL)	0603850F	42	04.....Volume 2 -	185
Integrated Command & Control Applications	0604740F	79	05.....Volume 2 -	779
Intelligence Advanced Development	0603260F	31	04.....Volume 2 -	1
Intelligence Equipment	0604750F	80	05.....Volume 2 -	793
INTEL SPT TO INFO OPS	0305193F	204	07.....Volume 3 -	1041
International Activities	1001004F	111	06.....Volume 2 -	1139

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
International Space Cooperative R&D	0603791F	39	04.....Volume 2 -	153
JHMCS	0207170F	138	07.....Volume 3 -	295
Joint Air-to-Surface Standoff Missile (JASSM)	0207325F	146	07.....Volume 3 -	381
Joint Cargo Aircraft	0401138F	94	05.....Volume 2 -	1001
Joint Command and Control	0303158F	179	07.....Volume 3 -	835
Joint Dual-Role Air Dominance Missile (JDRADM)	0604330F	50	04.....Volume 2 -	301
JOINT NATIONAL TRAINING CENTER	0804757F	237	07.....Volume 3 -	1523
JOINT PERSONNEL RECOVERY AGENCY (JPRA)	0901202F	240	07.....Volume 3 -	1547
Joint Precision Approach and Landing System	0603860F	46	04.....Volume 2 -	259
Joint SIAP Program Executive Office	0605452F	89	05.....Volume 2 -	909
JOINT STARS	0207581F	159	07.....Volume 3 -	603
Joint Strike Fighter EMD	0604800F	81	05.....Volume 2 -	805
Joint Strike Fighter Squadrons	0207142F	135	07.....Volume 3 -	259
JOINT SURVEILLANCE SYSTEM	0102325F	124	07.....Volume 3 -	119
JOINT TACTICAL RADIO SYSTEMS (JTRS)	0604280F	65	05.....Volume 2 -	535
JSpOC Mission System	0305614F	213	07.....Volume 3 -	1197
KC-10S	0401219F	226	07.....Volume 3 -	1397
KC-135s	0401218F	225	07.....Volume 3 -	1379
KC-X, Next Generation Aerial Refueling Aircraft	0605221F	85	05.....Volume 2 -	863
Large Aircraft InfraRed Counter Measures (LAIRCM)	0401134F	224	07.....Volume 3 -	1367

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Life Support Systems	0604706F	77	05.....Volume 2 - 749	
Link 16 Support and Sustainment	0207434F	90	05.....Volume 2 - 919	
Logistics Information Technology (LOGIT)	0708610F	234	07.....Volume 3 - 1473	
Logistic Support Activities	0708012F	233	07.....Volume 3 - 1465	
Long Range Strike	0604015F	47	04.....Volume 2 - 273	
Major T&E Investment	0604759F	98	06.....Volume 2 - 1041	
Manned Destructive Suppression	0207136F	133	07.....Volume 3 - 231	
Manned Reconnaissance System	0305207F	207	07.....Volume 3 - 1101	
Manufacturing Technologies	0603680F	27	03.....Volume 1 - 691	
Materials	0602102F	04	02.....Volume 1 - 93	
MAUI SPACE SURVEILLANCE SYSTEM	0603444F	23	03.....Volume 1 - 631	
MILSATCOM Terminals	0303601F	180	07.....Volume 3 - 845	
Minimum Essential Emergency Communications Network (MEECN)	0303131F	175	07.....Volume 3 - 745	
Mission Planning Systems	0208006F	164	07.....Volume 3 - 673	
MQ-9 Development and Fielding	0205219F	128	07.....Volume 3 - 155	
Multi-Platform Electronics	0207040F	129	07.....Volume 3 - 171	
Multi-Service Systems Engineering	0606323F	107	06.....Volume 2 - 1115	
NASS, IO TECH INTEGRATION & TOOL DEV	0307141F	218	07.....Volume 3 - 1269	
National Polar-Orbiting Op Env Satellite	0305178F	58	04.....Volume 2 - 405	
National Security Space Office	0305924F	216	07.....Volume 3 - 1247	

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
NATO Cooperative R&D	0603790F	38	04.....Volume 2 -	117
NAVSTAR Global Positioning System User Equipment Space	0305164F	198	07.....Volume 3 -	991
NAVSTAR GPS (Space)	0305165F	199	07.....Volume 3 -	1001
Network Centric Collaborative Targeting	0305221F	211	07.....Volume 3 -	1171
Next-Generation MILSATCOM Technology	0604436F	52	04.....Volume 2 -	333
Nuclear Weapons Support	0604222F	60	05.....Volume 2 -	425
NUDET Detection System (Space)	0305913F	215	07.....Volume 3 -	1237
Operationally Responsive Space	0604857F	56	04.....Volume 2 -	373
OPERATIONAL SUPPORT AIRLIFT	0401314F	227	07.....Volume 3 -	1409
OTHER FLIGHT TRAINING	0804743F	236	07.....Volume 3 -	1515
OTHER PERSONNEL ACTIVITIES	0808716F	239	07.....Volume 3 -	1541
Pararescue (Guardian Angel Weapon System)	0207227F	140	07.....Volume 3 -	313
PERSONNEL ADMINISTRATION	0901220F	243	07.....Volume 3 -	1571
Physical Security Equipment	0603287F	32	04.....Volume 2 -	29
Physical Security Equipment	0604287F	67	05.....Volume 2 -	567
Polar MILSATCOM (Space)	0603432F	35	04.....Volume 2 -	61
Pollution Prevention	0603859F	45	04.....Volume 2 -	251
Precision Attack Systems	0207249F	142	07.....Volume 3 -	333
PREDATOR DEVELOPMENT/FIELDING	0305219F	209	07.....Volume 3 -	1131
RAND Project Air Force	0605101F	99	06.....Volume 2 -	1053

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
RDT&E For Aging Aircraft	0605011F	84	05.....Volume 2 - 855	
REGION/ SECTOR OPERATIONS CONTROL CENTER	0102326F	125	07.....Volume 3 - 129	
Requirements Analysis and Maturation	0604337F	51	04.....Volume 2 - 309	
Rocket Systems Launch Program (RSLP)	0605860F	103	06.....Volume 2 - 1083	
Satellite Control Network	0305110F	188	07.....Volume 3 - 925	
Security And Investigative Activities	0305128F	194	07.....Volume 3 - 975	
Seek Eagle	0207590F	160	07.....Volume 3 - 615	
SERVICE-WIDE SUPPORT	0901212F	241	07.....Volume 3 - 1557	
Shared Early Warning System	0308699F	219	07.....Volume 3 - 1281	
Single Integrated Air Picture (SIAP)	0207451F	91	05.....Volume 2 - 943	
SLC3S-A (Senior Leader C3S)	0401845F	96	05.....Volume 2 - 1021	
Small Diameter Bomb	0604329F	68	05.....Volume 2 - 575	
Space & Missile Test & Evaluation Center	0305173F	201	07.....Volume 3 - 1011	
Space Based Infrared Systems (SBIRS) High EMD	0604441F	72	05.....Volume 2 - 673	
Space Control Technology	0603438F	36	04.....Volume 2 - 71	
Spacelift Range System	0305182F	203	07.....Volume 3 - 1029	
Space Protection Program	0603830F	40	04.....Volume 2 - 165	
Space Situation Awareness Operations	0305940F	217	07.....Volume 3 - 1255	
Space Situation Awareness Systems	0604425F	70	05.....Volume 2 - 613	
SPACE SUPERIORITY INTELLIGENCE	0301400F	173	07.....Volume 3 - 717	

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Space Technology	0602601F	09	02.....Volume 1 - 317	
Space Test Program	0605864F	104	06.....Volume 2 - 1091	
SPACE WARFARE CENTER	0305174F	202	07.....Volume 3 - 1021	
Specialized Undergraduate Pilot Training	0604233F	62	05.....Volume 2 - 473	
SPECIAL TACTICS/COMBAT CONTROL	0408011F	230	07.....Volume 3 - 1439	
STRAT AEROSPACE INTEL SYS ACTIVITIES	0102823F	126	07.....Volume 3 - 139	
STRAT WAR PLANNING SYS - USSTRATCOM	0101313F	121	07.....Volume 3 - 91	
Submunitions	0604604F	75	05.....Volume 2 - 721	
Support Systems Development	0708611F	235	07.....Volume 3 - 1485	
Sustainment Science and Technology (S&T)	0603199F	16	03.....Volume 1 - 473	
TAC AIRBORNE CONTROL SYSTEM	0207418F	150	07.....Volume 3 - 485	
Tactical AIM Missiles	0207161F	136	07.....Volume 3 - 269	
TACTICAL DATA NETWORKS ENTERPRISE	0604281F	66	05.....Volume 2 - 543	
Technology Transition Program.	0604858F	57	04.....Volume 2 - 395	
Test and Evaluation Support	0605807F	102	06.....Volume 2 - 1073	
Theater Battle Management (TBM) C4I	0207438F	154	07.....Volume 3 - 527	
Third Generation Infrared Surveillance (3GIRS)	0604443F	73	05.....Volume 2 - 689	
Threat Simulator Development	0604256F	97	06.....Volume 2 - 1031	
TRAINING DEVELOPMENTS	0804772F	238	07.....Volume 3 - 1533	
Transformational SATCOM (TSAT)	0603845F	41	04.....Volume 2 - 175	

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
University Research Initiatives	0601103F	02	01.....Volume 1 - 73	
USAF Modeling and Simulation	0207601F	161	07.....Volume 3 - 627	
Warfighter Rapid Acquisition Program	0203761F	127	07.....Volume 3 - 147	
Wargaming and Simulation Centers	0207605F	162	07.....Volume 3 - 653	
WEATHER SERVICE	0305111F	189	07.....Volume 3 - 935	
Wideband MILSATCOM (Space)	0603854F	44	04.....Volume 2 - 233	
WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM	0303150F	178	07.....Volume 3 - 825	

UNCLASSIFIED

PROGRAM ELEMENT COMPARISON SUMMARY

PROGRAM ELEMENT (By BUDGET ACTIVITY)

		REMARKS
BUDGET ACTIVITY #1: BASIC RESEARCH (Volume 1)		
BUDGET ACTIVITY #2: APPLIED RESEARCH (Volume 1)		
0602601F	Space Technology	In FY 2011, increases in funding are due the movement of technologies from PE 0603401F, Advanced Spacecraft Technology, to this PE in order to better align the technology readiness levels of these efforts.
BUDGET ACTIVITY #3: ADVANCED TECHNOLOGY DEVELOPMENT (Volume 1)		
0603401F	Advanced Spacecraft Technology	In FY 2011, Changes in funding are due to some technology development efforts being moved to PE 0602601F, Space Technology, in order to better align the technology readiness levels of these efforts.
0603216F	Aerospace Propulsion and Power Technology	In FY 2011, The funding in this project 63681B decreases due to planned taper of turbine engine technologies.
0603112F	Advanced Materials for Weapon Systems	In FY 2011, funds from Project 2100 have been moved to Program Element 0602102F BPAC 4348 to increase emphasis on applied research.
BUDGET ACTIVITY #4: ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPE (Volume 2)		
0603438F	Space Control Technology	In FY 2011 OCO requested, \$16.000M, replaces and upgrades equipment left with Army and Air Force counterspace units in Operation Iraqi Freedom (OIF). This technology was developed by the Rapid Reaction Squadron in response to numerous warfighter Urgent Operational Needs (UONs) and Joint Urgent Operational Needs (JUONs) for OIF.
0604015F	Long Range Strike and Industrial Base	In FY 2011 PE 0604015F is a new start effort.
0603830F	Space Protection Program	In FY 2011, new Program Element 0306830F. All Space Protection Program funding and content were transferred from PE 0630438F, Space Control Technology, and PE 0305940F, Space Situational Awareness, in FY 2011.
BUDGET ACTIVITY #5: SYSTEM DEVELOPMENT AND DEMONSTRATION (SDD) (Volume 2)		
0604706F	Life Support Systems	In FY 2011, Project 65412A, Life Support Systems, includes new starts for flash blindness goggles and aircrew flight equipment.
0604281F	TACTICAL DATA NETWORKS ENTERPRISE	In FY 2011 funding totals include \$30M requested for Overseas Contingency Operations.
0605221F	KC-X, Next Generation Aerial Refueling Aircraft	In FY 2011 PB restructures the KC-X budget to account for the fact-of-life delays for the recompetition and planned summer 2010 contract award.
BUDGET ACTIVITY #6: RDT&E MANAGEMENT SUPPORT (Volume 2)		
0606323F	Multi-Service Systems Engineering	In FY 2011, this is a new PE. In FY 2010, PE 0605452F Joint Single Integrated Air Picture (SIAP) Program Executive Office efforts come to a close. This new PE (0606323F) includes follow-on efforts under the Joint Integrated Air and Missile Defense (JIAMD) initiative. FY 2011 efforts in this PE include Multi-Service Systems Engineering (MSSE), Joint Track Manager Capability (JTMC) demonstrations, and Joint Operational requirements definition.
BUDGET ACTIVITY #7: OPERATIONAL SYSTEM DEVELOPMENT (Volume 3)		
0208021F	Information Warfare Support	In FY 2011, Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt efforts transferred to PE 0310400F, Space Superiority Intelligence for proper execution in AFSPC.

PROGRAM ELEMENT COMPARISON SUMMARY

PROGRAM ELEMENT (By BUDGET ACTIVITY)

		REMARKS
0208006F	Mission Planning Systems	In FY 2011, Project 673858, Mission Planning Systems, efforts were transferred to PE 0208006F, Mission Planning Systems, Project 675302, Mobility Air Forces Planning Systems (previously titled Precision Aerial Delivery System) and Project 675380, Combat Air Forces Planning Systems, in order to more accurately group and reflect the products being developed within the program. FY 2011 funding totals include \$4.443 for Overseas Contingency Operations (OCO) FY 2011 - Project 675365 is new in FY11 to provide enhanced funds tracking and accountability for Engine CIP support of F-35 propulsion systems. Engine CIP for all other AF aircraft propulsion programs is accomplished within Project 671012.
0207268F	Aircraft Engine Component Improvement Program (CIP)	
0207136F	Manned Destructive Suppression	In FY 2011, this effort contains a new start for P3I R7 Study Effort for Next Phase.
0207134F	F-15E SQUADRONS	In FY 2011, the F-15 program has a new start: F-15C/D Advanced Display Core Processor (ADCP+)with Vertical Situation Display to replace obsolete 25 MHz Central Computers.
0305221F	Network Centric Collaborative Targeting	In FY 2011 funding totals include \$6.1M for the Overseas Contingency Operations (OCO) Supplemental Request to develop a Network Centric Collaborative Targeting (NCCT) Core Technology Ground Moving Target Indicator (GMTI) / Signals Intelligence (SIGINT) Correlator. A GMTI / SIGINT correlator for the NCCT fusion engine supports OCO real-time and forensic operations, accelerates High-Side (classified) message architecture to network OCO relevant sensor systems, and directly supports tactics, techniques and procedures (TTP) development for rapid operator use.
0301400F	Mission Planning Systems	In FY 2011, Project Number 670374, Electronic Combat Spt, C3 Protection/Multi-Mission Technology and Spt, funding and content were transferred from PE 0208021F, Information Warfare Support.
0207142F	Joint Strike Fighter Squadrons	In FY 2011, PE0207142F is a new PE for Joint Strike Fighter (JSF). PE0604800F is the primary RDT&E funding for JSF.
0208021F	Information Warfare Support	In FY 2011, Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt efforts transferred to PE 0301400F, Space Superiority Intelligence for proper execution in AFSPC.
0408011F	SPECIAL TACTICS/COMBAT CONTROL	In FY 2011 funding totals include \$10.325M requested for Overseas Contingency Operations.
0207268F	Aircraft Engine Component Improvement Program (CIP)	In FY 2011, Project 675365 is new providing enhanced funds tracking and accountability for F-35 propulsion systems.
0301400F	SPACE SUPERIORITY INTELLIGENCE	In FY 2011, Project Number 67A051, Space Superiority - Advanced Intelligence Systems content and funding were transferred from PE 0208021F, Information Warfare Support, in order to focus specific attention on the Space Superiority Intelligence requirements.

The following are Program Elements not providing RDT&E exhibits due to classification:

<u>Program Element</u>	<u>Title</u>
0101314F	NIGHT FIST- USSTRATCOM
0101815F	Advanced Strategic Program
0207424F	Evaluation and Analysis Program
0208161F	Special Evaluation System
0301310F	National Air Intelligence Center
0301314F	COBRA BALL
0301315F	Missile and Space Technical Collection
0301324F	FOREST GREEN
0301386F	GDIP Collection Management
0301555F	Classified Programs
0301556F	Special Program
0304111F	Special Activities
0304311F	Selected Activities
0304348F	Advanced Geospatial Intelligence (AGI)
0305124F	Special Applications Program
0305142F	Applied Technology and Integration
0305159F	Defense Reconnaissance Support Activities
0305172F	Combined Advanced Applications
0605798F	Analysis Support Group
0305127F	Foreign Counterintelligence Activities

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

**Department of Defense
Fiscal Year (FY) 2011 President's Budget**

February 2010



Air Force

Justification Book Volume 3

Research, Development, Test & Evaluation, Air Force - 3600

Part 1 of 2

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Volume 3 Table of Contents

Program Element Table of Contents (by Budget Activity then Line Item Number).....Volume 3 - v
Program Element Table of Contents (Alphabetically by Program Element Title).....Volume 3 - xiii
Exhibit R-1..... Volume 3 - xix
Exhibit R-2's..... Volume 3 - 1

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Table of Contents (by Budget Activity then Line Item Number)

Budget Activity 07: Operational Systems Development

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
113	07	0604263F	CVLSP.....	Volume 3 - 1
114	07	0605018F	Air Force Integrated Military Human Resources System (AF-IMHRS).....	Volume 3 - 9
115	07	0605024F	Anti-Tamper Technology Executive Agent.....	Volume 3 - 19
117	07	0101113F	B-52 SQUADRONS.....	Volume 3 - 31
118	07	0101122F	AIR LAUNCHED CRUISE MISSILE.....	Volume 3 - 55
119	07	0101126F	B-1B SQUADRONS.....	Volume 3 - 65
120	07	0101127F	B-2 SQUADRONS.....	Volume 3 - 77
121	07	0101313F	STRAT WAR PLANNING SYS - USSTRATCOM.....	Volume 3 - 91
124	07	0102325F	JOINT SURVEILLANCE SYSTEM.....	Volume 3 - 119
125	07	0102326F	REGION/ SECTOR OPERATIONS CONTROL CENTER.....	Volume 3 - 129
126	07	0102823F	STRAT AEROSPACE INTEL SYS ACTIVITIES.....	Volume 3 - 139
127	07	0203761F	Warfighter Rapid Acquisition Program.....	Volume 3 - 147
128	07	0205219F	MQ-9 Development and Fielding.....	Volume 3 - 155
129	07	0207040F	Multi-Platform Electronics.....	Volume 3 - 171
130	07	0207131F	A-10 SQUADRONS.....	Volume 3 - 179
131	07	0207133F	F-16 SQUADRONS.....	Volume 3 - 193

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 07: Operational Systems Development

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
132	07	0207134F	F-15E SQUADRONS.....	Volume 3 - 211
133	07	0207136F	Manned Destructive Suppression.....	Volume 3 - 231
134	07	0207138F	F-22 SQUADRONS.....	Volume 3 - 243
135	07	0207142F	Joint Strike Fighter Squadrons.....	Volume 3 - 259
136	07	0207161F	Tactical AIM Missiles.....	Volume 3 - 269
137	07	0207163F	Advanced Medium Range Air-to-Air Missile.....	Volume 3 - 281
138	07	0207170F	JHMCS.....	Volume 3 - 295
139	07	0207224F	COMBAT RESCUE AND RECOVERY.....	Volume 3 - 305
140	07	0207227F	Pararescue (Guardian Angel Weapon System).....	Volume 3 - 313
141	07	0207247F	Air Force TENCAP.....	Volume 3 - 321
142	07	0207249F	Precision Attack Systems.....	Volume 3 - 333
143	07	0207253F	Compass Call.....	Volume 3 - 341
144	07	0207268F	Aircraft Engine Component Improvement Program (CIP).....	Volume 3 - 349
145	07	0207277F	Chief's Innovation Program.....	Volume 3 - 367
146	07	0207325F	Joint Air-to-Surface Standoff Missile (JASSM).....	Volume 3 - 381
147	07	0207410F	Air and Space Operations Center - Weapon System (AOC-WS).....	Volume 3 - 399
148	07	0207412F	Control and Reporting Center (CRC).....	Volume 3 - 443
149	07	0207417F	Airborne Warning and Control System (AWACS).....	Volume 3 - 467

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 07: Operational Systems Development

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
150	07	0207418F	TAC AIRBORNE CONTROL SYSTEM.....	Volume 3 - 485
151	07	0207423F	Advanced Communications Systems.....	Volume 3 - 493
153	07	0207431F	Combat Air Intelligence System.....	Volume 3 - 515
154	07	0207438F	Theater Battle Management (TBM) C4I.....	Volume 3 - 527
155	07	0207445F	FIGHTER TACTICAL DATA LINK.....	Volume 3 - 537
156	07	0207446F	Bomber Tactical Data Link.....	Volume 3 - 553
157	07	0207448F	C2ISR Tactical Data Link.....	Volume 3 - 563
158	07	0207449F	C2 Constellation.....	Volume 3 - 573
159	07	0207581F	JOINT STARS.....	Volume 3 - 603
160	07	0207590F	Seek Eagle.....	Volume 3 - 615
161	07	0207601F	USAF Modeling and Simulation.....	Volume 3 - 627
162	07	0207605F	Wargaming and Simulation Centers.....	Volume 3 - 653
163	07	0207697F	Distributed Training and Exercises.....	Volume 3 - 665
164	07	0208006F	Mission Planning Systems.....	Volume 3 - 673
165	07	0208021F	Information Warfare Support.....	Volume 3 - 699
166	07	0208059F	CYBER Command.....	Volume 3 - 711
173	07	0301400F	SPACE SUPERIORITY INTELLIGENCE.....	Volume 3 - 717
174	07	0302015F	E-4B NATIONAL AIRBORNE OPERATIONS CENTER.....	Volume 3 - 725

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 07: Operational Systems Development

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
175	07	0303131F	Minimum Essential Emergency Communications Network (MEECN).....	Volume 3 - 745
176	07	0303140F	Information Systems Security Program.....	Volume 3 - 769
177	07	0303141F	Global Combat Support System (GCSS).....	Volume 3 - 815
178	07	0303150F	WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM.....	Volume 3 - 825
179	07	0303158F	Joint Command and Control.....	Volume 3 - 835
180	07	0303601F	MILSATCOM Terminals.....	Volume 3 - 845
182	07	0304260F	Airborne SIGINT Enterprise (JMIP).....	Volume 3 - 857
185	07	0305099F	Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM).....	Volume 3 - 901
186	07	0305103F	Cyber Security Initiative.....	Volume 3 - 911
187	07	0305105F	DoD Cyber Crime Center.....	Volume 3 - 919
188	07	0305110F	Satellite Control Network.....	Volume 3 - 925
189	07	0305111F	WEATHER SERVICE.....	Volume 3 - 935
190	07	0305114F	Air Traffic Control/Approach/Landing System (ATCAL).....	Volume 3 - 947
191	07	0305116F	AERIAL TARGETS.....	Volume 3 - 959
194	07	0305128F	Security And Investigative Activities.....	Volume 3 - 975
196	07	0305146F	Defense Joint Counter Intelligence Program.....	Volume 3 - 985
198	07	0305164F	NAVSTAR Global Positioning System User Equipment Space.....	Volume 3 - 991
199	07	0305165F	NAVSTAR GPS (Space).....	Volume 3 - 1001

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 07: Operational Systems Development

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
201	07	0305173F	Space & Missile Test & Evaluation Center.....	Volume 3 - 1011
202	07	0305174F	SPACE WARFARE CENTER.....	Volume 3 - 1021
203	07	0305182F	Spacelift Range System.....	Volume 3 - 1029
204	07	0305193F	INTEL SPT TO INFO OPS.....	Volume 3 - 1041
205	07	0305205F	Endurance Unmanned Aerial Vehicles.....	Volume 3 - 1051
206	07	0305206F	Airborne Reconnaissance Systems.....	Volume 3 - 1059
207	07	0305207F	Manned Reconnaissance System.....	Volume 3 - 1101
208	07	0305208F	Distributed Common Ground Systems.....	Volume 3 - 1111
209	07	0305219F	PREDATOR DEVELOPMENT/FIELDING.....	Volume 3 - 1131
210	07	0305220F	GLOBAL HAWK DEVELOPMENT/FIELDING.....	Volume 3 - 1145
211	07	0305221F	Network Centric Collaborative Targeting.....	Volume 3 - 1171
212	07	0305265F	GPS III Space Segment.....	Volume 3 - 1181
213	07	0305614F	JSpOC Mission System.....	Volume 3 - 1197
214	07	0305887F	Electronic Combat Intelligence Support.....	Volume 3 - 1225
215	07	0305913F	NUDET Detection System (Space).....	Volume 3 - 1237
216	07	0305924F	National Security Space Office.....	Volume 3 - 1247
217	07	0305940F	Space Situation Awareness Operations.....	Volume 3 - 1255
218	07	0307141F	NASS, IO TECH INTEGRATION & TOOL DEV.....	Volume 3 - 1269

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 07: Operational Systems Development

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
219	07	0308699F	Shared Early Warning System.....	Volume 3 - 1281
220	07	0401115F	C-130 AIRLIFT SQUADRONS.....	Volume 3 - 1291
221	07	0401119F	C-5 Airlift Squadrons.....	Volume 3 - 1315
222	07	0401130F	C-17 Aircraft.....	Volume 3 - 1341
223	07	0401132F	C-130J PROGRAM.....	Volume 3 - 1353
224	07	0401134F	Large Aircraft InfraRed Counter Measures (LAIRCM).....	Volume 3 - 1367
225	07	0401218F	KC-135s.....	Volume 3 - 1379
226	07	0401219F	KC-10S.....	Volume 3 - 1397
227	07	0401314F	OPERATIONAL SUPPORT AIRLIFT.....	Volume 3 - 1409
228	07	0401315F	C-STOL AIRCRAFT.....	Volume 3 - 1417
229	07	0401839F	Airlift/Other Tactical Data Link.....	Volume 3 - 1425
230	07	0408011F	SPECIAL TACTICS/COMBAT CONTROL.....	Volume 3 - 1439
231	07	0702207F	Depot Maintenance (Non-IF).....	Volume 3 - 1449
232	07	0702976F	Facilities Restoration & Modernization (Logistics).....	Volume 3 - 1457
233	07	0708012F	Logistic Support Activities.....	Volume 3 - 1465
234	07	0708610F	Logistics Information Technology (LOGIT).....	Volume 3 - 1473
235	07	0708611F	Support Systems Development.....	Volume 3 - 1485
236	07	0804743F	OTHER FLIGHT TRAINING.....	Volume 3 - 1515

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Budget Activity 07: Operational Systems Development

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
237	07	0804757F	JOINT NATIONAL TRAINING CENTER.....	Volume 3 - 1523
238	07	0804772F	TRAINING DEVELOPMENTS.....	Volume 3 - 1533
239	07	0808716F	OTHER PERSONNEL ACTIVITIES.....	Volume 3 - 1541
240	07	0901202F	JOINT PERSONNEL RECOVERY AGENCY (JPRA).....	Volume 3 - 1547
241	07	0901212F	SERVICE-WIDE SUPPORT.....	Volume 3 - 1557
242	07	0901218F	Civilian Compensation Program.....	Volume 3 - 1565
243	07	0901220F	PERSONNEL ADMINISTRATION.....	Volume 3 - 1571
244	07	0901538F	Financial Management Information Systems (FMIS).....	Volume 3 - 1589

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Table of Contents (Alphabetically by Program Element Title)

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
A-10 SQUADRONS	0207131F	130	07.....Volume 3 -	179
Advanced Communications Systems	0207423F	151	07.....Volume 3 -	493
Advanced Medium Range Air-to-Air Missile	0207163F	137	07.....Volume 3 -	281
AERIAL TARGETS	0305116F	191	07.....Volume 3 -	959
Air and Space Operations Center - Weapon System (AOC-WS)	0207410F	147	07.....Volume 3 -	399
Airborne Reconnaissance Systems	0305206F	206	07.....Volume 3 -	1059
Airborne SIGINT Enterprise (JMIP)	0304260F	182	07.....Volume 3 -	857
Airborne Warning and Control System (AWACS)	0207417F	149	07.....Volume 3 -	467
Aircraft Engine Component Improvement Program (CIP)	0207268F	144	07.....Volume 3 -	349
Air Force Integrated Military Human Resources System (AF-IMHRS)	0605018F	114	07.....Volume 3 -	9
Air Force TENCAP	0207247F	141	07.....Volume 3 -	321
AIR LAUNCHED CRUISE MISSILE	0101122F	118	07.....Volume 3 -	55
Airlift/Other Tactical Data Link	0401839F	229	07.....Volume 3 -	1425
Air Traffic Control/Approach/Landing System (ATCALs)	0305114F	190	07.....Volume 3 -	947
Anti-Tamper Technology Executive Agent	0605024F	115	07.....Volume 3 -	19
B-1B SQUADRONS	0101126F	119	07.....Volume 3 -	65
B-2 SQUADRONS	0101127F	120	07.....Volume 3 -	77

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
B-52 SQUADRONS	0101113F	117	07.....Volume 3 - 31	
Bomber Tactical Data Link	0207446F	156	07.....Volume 3 - 553	
C-130 AIRLIFT SQUADRONS	0401115F	220	07.....Volume 3 - 1291	
C-130J PROGRAM	0401132F	223	07.....Volume 3 - 1353	
C-17 Aircraft	0401130F	222	07.....Volume 3 - 1341	
C2 Constellation	0207449F	158	07.....Volume 3 - 573	
C2ISR Tactical Data Link	0207448F	157	07.....Volume 3 - 563	
C-5 Airlift Squadrons	0401119F	221	07.....Volume 3 - 1315	
Chief's Innovation Program	0207277F	145	07.....Volume 3 - 367	
Civilian Compensation Program	0901218F	242	07.....Volume 3 - 1565	
Combat Air Intelligence System	0207431F	153	07.....Volume 3 - 515	
COMBAT RESCUE AND RECOVERY	0207224F	139	07.....Volume 3 - 305	
Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)	0305099F	185	07.....Volume 3 - 901	
Compass Call	0207253F	143	07.....Volume 3 - 341	
Control and Reporting Center (CRC)	0207412F	148	07.....Volume 3 - 443	
C-STOL AIRCRAFT	0401315F	228	07.....Volume 3 - 1417	
CVLSP	0604263F	113	07..... Volume 3 - 1	
CYBER Command	0208059F	166	07.....Volume 3 - 711	
Cyber Security Initiative	0305103F	186	07.....Volume 3 - 911	
Defense Joint Counter Intelligence Program	0305146F	196	07.....Volume 3 - 985	

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Depot Maintenance (Non-IF)	0702207F	231	07.....Volume 3 -	1449
Distributed Common Ground Systems	0305208F	208	07.....Volume 3 -	1111
Distributed Training and Exercises	0207697F	163	07.....Volume 3 -	665
DoD Cyber Crime Center	0305105F	187	07.....Volume 3 -	919
E-4B NATIONAL AIRBORNE OPERATIONS CENTER	0302015F	174	07.....Volume 3 -	725
Electronic Combat Intelligence Support	0305887F	214	07.....Volume 3 -	1225
Endurance Unmanned Aerial Vehicles	0305205F	205	07.....Volume 3 -	1051
F-15E SQUADRONS	0207134F	132	07.....Volume 3 -	211
F-16 SQUADRONS	0207133F	131	07.....Volume 3 -	193
F-22 SQUADRONS	0207138F	134	07.....Volume 3 -	243
Facilities Restoration & Modernization (Logistics)	0702976F	232	07.....Volume 3 -	1457
FIGHTER TACTICAL DATA LINK	0207445F	155	07.....Volume 3 -	537
Financial Management Information Systems (FMIS)	0901538F	244	07.....Volume 3 -	1589
Global Combat Support System (GCSS)	0303141F	177	07.....Volume 3 -	815
GLOBAL HAWK DEVELOPMENT/FIELDING	0305220F	210	07.....Volume 3 -	1145
GPS III Space Segment	0305265F	212	07.....Volume 3 -	1181
Information Systems Security Program	0303140F	176	07.....Volume 3 -	769
Information Warfare Support	0208021F	165	07.....Volume 3 -	699
INTEL SPT TO INFO OPS	0305193F	204	07.....Volume 3 -	1041
JHMCS	0207170F	138	07.....Volume 3 -	295

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Joint Air-to-Surface Standoff Missile (JASSM)	0207325F	146	07.....Volume 3 -	381
Joint Command and Control	0303158F	179	07.....Volume 3 -	835
JOINT NATIONAL TRAINING CENTER	0804757F	237	07.....Volume 3 -	1523
JOINT PERSONNEL RECOVERY AGENCY (JPRA)	0901202F	240	07.....Volume 3 -	1547
JOINT STARS	0207581F	159	07.....Volume 3 -	603
Joint Strike Fighter Squadrons	0207142F	135	07.....Volume 3 -	259
JOINT SURVEILLANCE SYSTEM	0102325F	124	07.....Volume 3 -	119
JSpOC Mission System	0305614F	213	07.....Volume 3 -	1197
KC-10S	0401219F	226	07.....Volume 3 -	1397
KC-135s	0401218F	225	07.....Volume 3 -	1379
Large Aircraft InfraRed Counter Measures (LAIRCM)	0401134F	224	07.....Volume 3 -	1367
Logistics Information Technology (LOGIT)	0708610F	234	07.....Volume 3 -	1473
Logistic Support Activities	0708012F	233	07.....Volume 3 -	1465
Manned Destructive Suppression	0207136F	133	07.....Volume 3 -	231
Manned Reconnaissance System	0305207F	207	07.....Volume 3 -	1101
MILSATCOM Terminals	0303601F	180	07.....Volume 3 -	845
Minimum Essential Emergency Communications Network (MEECN)	0303131F	175	07.....Volume 3 -	745
Mission Planning Systems	0208006F	164	07.....Volume 3 -	673
MQ-9 Development and Fielding	0205219F	128	07.....Volume 3 -	155
Multi-Platform Electronics	0207040F	129	07.....Volume 3 -	171

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
NASS, IO TECH INTEGRATION & TOOL DEV	0307141F	218	07.....	Volume 3 - 1269
National Security Space Office	0305924F	216	07.....	Volume 3 - 1247
NAVSTAR Global Positioning System User Equipment Space	0305164F	198	07.....	Volume 3 - 991
NAVSTAR GPS (Space)	0305165F	199	07.....	Volume 3 - 1001
Network Centric Collaborative Targeting	0305221F	211	07.....	Volume 3 - 1171
NUDET Detection System (Space)	0305913F	215	07.....	Volume 3 - 1237
OPERATIONAL SUPPORT AIRLIFT	0401314F	227	07.....	Volume 3 - 1409
OTHER FLIGHT TRAINING	0804743F	236	07.....	Volume 3 - 1515
OTHER PERSONNEL ACTIVITIES	0808716F	239	07.....	Volume 3 - 1541
Pararescue (Guardian Angel Weapon System)	0207227F	140	07.....	Volume 3 - 313
PERSONNEL ADMINISTRATION	0901220F	243	07.....	Volume 3 - 1571
Precision Attack Systems	0207249F	142	07.....	Volume 3 - 333
PREDATOR DEVELOPMENT/FIELDING	0305219F	209	07.....	Volume 3 - 1131
REGION/ SECTOR OPERATIONS CONTROL CENTER	0102326F	125	07.....	Volume 3 - 129
Satellite Control Network	0305110F	188	07.....	Volume 3 - 925
Security And Investigative Activities	0305128F	194	07.....	Volume 3 - 975
Seek Eagle	0207590F	160	07.....	Volume 3 - 615
SERVICE-WIDE SUPPORT	0901212F	241	07.....	Volume 3 - 1557
Shared Early Warning System	0308699F	219	07.....	Volume 3 - 1281
Space & Missile Test & Evaluation Center	0305173F	201	07.....	Volume 3 - 1011

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Spacelift Range System	0305182F	203	07.....	Volume 3 - 1029
Space Situation Awareness Operations	0305940F	217	07.....	Volume 3 - 1255
SPACE SUPERIORITY INTELLIGENCE	0301400F	173	07.....	Volume 3 - 717
SPACE WARFARE CENTER	0305174F	202	07.....	Volume 3 - 1021
SPECIAL TACTICS/COMBAT CONTROL	0408011F	230	07.....	Volume 3 - 1439
STRAT AEROSPACE INTEL SYS ACTIVITIES	0102823F	126	07.....	Volume 3 - 139
STRAT WAR PLANNING SYS - USSTRATCOM	0101313F	121	07.....	Volume 3 - 91
Support Systems Development	0708611F	235	07.....	Volume 3 - 1485
TAC AIRBORNE CONTROL SYSTEM	0207418F	150	07.....	Volume 3 - 485
Tactical AIM Missiles	0207161F	136	07.....	Volume 3 - 269
Theater Battle Management (TBM) C4I	0207438F	154	07.....	Volume 3 - 527
TRAINING DEVELOPMENTS	0804772F	238	07.....	Volume 3 - 1533
USAF Modeling and Simulation	0207601F	161	07.....	Volume 3 - 627
Warfighter Rapid Acquisition Program	0203761F	127	07.....	Volume 3 - 147
Wargaming and Simulation Centers	0207605F	162	07.....	Volume 3 - 653
WEATHER SERVICE	0305111F	189	07.....	Volume 3 - 935
WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM	0303150F	178	07.....	Volume 3 - 825

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Exhibit R-1

(Listing by Budget Activity, then Program Element Number)

BA# 07: Operational Systems Development

Cost (\$ in Millions)

Line#	BA#	PE#	PE Title	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
117	07	0101113F	B-52 SQUADRONS	39.835	102.330	146.096	0.000	146.096
118	07	0101122F	AIR LAUNCHED CRUISE MISSILE	0.384	3.652	3.631	0.000	3.631
119	07	0101126F	B-1B SQUADRONS	0.000	178.278	33.234	0.000	33.234
120	07	0101127F	B-2 SQUADRONS	0.000	407.189	260.466	0.000	260.466
121	07	0101313F	STRAT WAR PLANNING SYS - USSTRATCOM	17.013	33.746	28.441	0.000	28.441
124	07	0102325F	JOINT SURVEILLANCE SYSTEM	0.000	9.832	0.000	0.000	0.000
125	07	0102326F	REGION/ SECTOR OPERATIONS CONTROL CENTER	23.151	25.589	23.732	0.000	23.732
126	07	0102823F	STRAT AEROSPACE INTEL SYS ACTIVITIES	0.015	0.018	0.015	0.000	0.015
127	07	0203761F	Warfighter Rapid Acquisition Program	29.928	11.968	10.580	0.000	10.580
128	07	0205219F	MQ-9 Development and Fielding	57.205	93.145	125.427	0.000	125.427
129	07	0207040F	Multi-Platform Electronics	0.000	14.747	15.574	0.000	15.574
130	07	0207131F	A-10 SQUADRONS	3.989	12.197	5.661	0.000	5.661
131	07	0207133F	F-16 SQUADRONS	123.733	142.620	129.103	0.000	129.103
132	07	0207134F	F-15E SQUADRONS	203.816	319.967	222.677	0.000	222.677
133	07	0207136F	Manned Destructive Suppression	5.413	9.748	12.937	0.000	12.937
134	07	0207138F	F-22 SQUADRONS	579.710	569.345	576.330	0.000	576.330
135	07	0207142F	Joint Strike Fighter Squadrons	0.000	0.000	217.561	0.000	217.561
136	07	0207161F	Tactical AIM Missiles	5.585	5.915	6.040	0.000	6.040

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Exhibit R-1

(Listing by Budget Activity, then Program Element Number)

BA# 07: Operational Systems Development

Cost (\$ in Millions)

Line#	BA#	PE#	PE Title	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
137	07	0207163F	Advanced Medium Range Air-to-Air Missile	43.633	49.971	62.922	0.000	62.922
138	07	0207170F	JHMCS	3.095	2.529	2.407	0.000	2.407
139	07	0207224F	COMBAT RESCUE AND RECOVERY	0.000	0.000	0.944	0.000	0.944
140	07	0207227F	Pararescue (Guardian Angel Weapon System)	0.000	2.950	2.921	0.000	2.921
141	07	0207247F	Air Force TENCAP	11.547	11.643	11.648	0.000	11.648
142	07	0207249F	Precision Attack Systems	0.000	2.950	3.017	0.000	3.017
143	07	0207253F	Compass Call	4.526	13.019	20.652	0.000	20.652
144	07	0207268F	Aircraft Engine Component Improvement Program (CIP)	146.359	156.963	147.396	0.000	147.396
145	07	0207277F	Chief's Innovation Program	0.000	11.261	0.000	0.000	0.000
146	07	0207325F	Joint Air-to-Surface Standoff Missile (JASSM)	32.131	29.494	20.000	0.000	20.000
147	07	0207410F	Air and Space Operations Center - Weapon System (AOC-WS)	95.908	101.587	93.102	0.000	93.102
148	07	0207412F	Control and Reporting Center (CRC)	18.688	52.177	58.313	0.000	58.313
149	07	0207417F	Airborne Warning and Control System (AWACS)	122.425	175.514	239.755	0.000	239.755
150	07	0207418F	TAC AIRBORNE CONTROL SYSTEM	1.486	0.000	0.000	0.000	0.000
151	07	0207423F	Advanced Communications Systems	28.210	73.009	67.532	0.000	67.532
153	07	0207431F	Combat Air Intelligence System	0.000	1.475	3.310	0.000	3.310
154	07	0207438F	Theater Battle Management (TBM) C4I	18.845	19.033	15.170	0.000	15.170
155	07	0207445F	FIGHTER TACTICAL DATA LINK	55.069	66.872	85.492	0.000	85.492

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Exhibit R-1

(Listing by Budget Activity, then Program Element Number)

BA# 07: Operational Systems Development

Cost (\$ in Millions)

Line#	BA#	PE#	PE Title	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
156	07	0207446F	Bomber Tactical Data Link	21.603	0.000	0.000	0.000	0.000
157	07	0207448F	C2ISR Tactical Data Link	1.671	1.659	1.584	0.000	1.584
158	07	0207449F	C2 Constellation	30.832	30.293	24.229	0.000	24.229
159	07	0207581F	JOINT STARS	97.625	185.616	168.917	0.000	168.917
160	07	0207590F	Seek Eagle	21.355	22.071	19.263	0.000	19.263
161	07	0207601F	USAF Modeling and Simulation	28.062	27.161	21.638	0.000	21.638
162	07	0207605F	Wargaming and Simulation Centers	3.752	7.018	6.020	0.000	6.020
163	07	0207697F	Distributed Training and Exercises	6.918	6.740	2.863	0.000	2.863
164	07	0208006F	Mission Planning Systems	94.589	81.577	79.111	4.443	83.554
165	07	0208021F	Information Warfare Support	11.780	13.779	2.294	0.000	2.294
166	07	0208059F	CYBER Command	0.000	0.000	1.117	0.000	1.117
173	07	0301400F	SPACE SUPERIORITY INTELLIGENCE	0.000	0.000	10.006	0.000	10.006
174	07	0302015F	E-4B NATIONAL AIRBORNE OPERATIONS CENTER	0.158	26.107	12.532	0.000	12.532
175	07	0303131F	Minimum Essential Emergency Communications Network (MEECN)	81.095	72.360	78.784	0.000	78.784
176	07	0303140F	Information Systems Security Program	162.815	165.401	140.017	0.000	140.017
177	07	0303141F	Global Combat Support System (GCSS)	8.613	3.319	3.393	0.000	3.393
178	07	0303150F	WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM	3.124	6.279	3.055	0.000	3.055

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Exhibit R-1

(Listing by Budget Activity, then Program Element Number)

BA# 07: Operational Systems Development

Cost (\$ in Millions)

Line#	BA#	PE#	PE Title	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
179	07	0303158F	Joint Command and Control	3.140	0.000	0.000	0.000	0.000
180	07	0303601F	MILSATCOM Terminals	277.501	253.818	186.582	0.000	186.582
182	07	0304260F	Airborne SIGINT Enterprise (JMIP)	170.714	166.989	149.268	0.000	149.268
185	07	0305099F	Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)	10.584	5.654	5.708	0.000	5.708
186	07	0305103F	Cyber Security Initiative	2.020	2.065	2.030	0.000	2.030
187	07	0305105F	DoD Cyber Crime Center	0.000	0.000	0.279	0.000	0.279
188	07	0305110F	Satellite Control Network	54.547	20.825	21.667	0.000	21.667
189	07	0305111F	WEATHER SERVICE	45.918	33.291	32.373	0.000	32.373
190	07	0305114F	Air Traffic Control/Approach/Landing System (ATCALs)	8.796	11.313	33.268	0.000	33.268
191	07	0305116F	AERIAL TARGETS	10.970	54.807	63.573	0.000	63.573
194	07	0305128F	Security And Investigative Activities	1.962	0.742	0.469	0.000	0.469
196	07	0305146F	Defense Joint Counter Intelligence Program	0.039	0.039	0.040	0.000	0.040
198	07	0305164F	NAVSTAR Global Positioning System User Equipment Space	121.798	137.163	165.936	0.000	165.936
199	07	0305165F	NAVSTAR GPS (Space)	86.648	51.197	34.471	0.000	34.471
201	07	0305173F	Space & Missile Test & Evaluation Center	1.920	3.593	4.572	0.000	4.572
202	07	0305174F	SPACE WARFARE CENTER	2.890	2.961	2.929	0.000	2.929
203	07	0305182F	Spacelift Range System	13.322	9.915	9.933	0.000	9.933

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Exhibit R-1

(Listing by Budget Activity, then Program Element Number)

BA# 07: Operational Systems Development

Cost (\$ in Millions)

Line#	BA#	PE#	PE Title	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
204	07	0305193F	INTEL SPT TO INFO OPS	3.627	2.240	1.254	0.000	1.254
205	07	0305205F	Endurance Unmanned Aerial Vehicles	0.000	48.736	0.000	0.000	0.000
206	07	0305206F	Airborne Reconnaissance Systems	111.170	145.413	168.963	0.000	168.963
207	07	0305207F	Manned Reconnaissance System	17.811	14.846	15.337	0.000	15.337
208	07	0305208F	Distributed Common Ground Systems	75.251	82.404	93.398	0.000	93.398
209	07	0305219F	PREDATOR DEVELOPMENT/FIELDING	38.605	35.160	28.913	0.000	28.913
210	07	0305220F	GLOBAL HAWK DEVELOPMENT/FIELDING	279.164	317.268	251.318	0.000	251.318
211	07	0305221F	Network Centric Collaborative Targeting	8.783	8.160	7.267	6.100	13.367
212	07	0305265F	GPS III Space Segment	379.046	423.466	828.171	0.000	828.171
213	07	0305614F	JSpOC Mission System	0.000	136.271	132.706	0.000	132.706
214	07	0305887F	Electronic Combat Intelligence Support	5.251	5.220	5.512	0.000	5.512
215	07	0305913F	NUDET Detection System (Space)	41.102	83.846	72.199	0.000	72.199
216	07	0305924F	National Security Space Office	7.512	0.000	10.630	0.000	10.630
217	07	0305940F	Space Situation Awareness Operations	15.579	53.805	43.838	0.000	43.838
218	07	0307141F	NASS, IO TECH INTEGRATION & TOOL DEV	18.042	29.788	21.912	0.000	21.912
219	07	0308699F	Shared Early Warning System	3.060	3.047	2.952	0.000	2.952
220	07	0401115F	C-130 AIRLIFT SQUADRONS	168.736	109.250	113.107	0.000	113.107
221	07	0401119F	C-5 Airlift Squadrons	110.191	85.266	58.990	0.000	58.990

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Exhibit R-1

(Listing by Budget Activity, then Program Element Number)

BA# 07: Operational Systems Development

Cost (\$ in Millions)

Line#	BA#	PE#	PE Title	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
222	07	0401130F	C-17 Aircraft	182.754	161.855	177.212	0.000	177.212
223	07	0401132F	C-130J PROGRAM	25.190	30.019	26.770	0.000	26.770
224	07	0401134F	Large Aircraft InfraRed Counter Measures (LAIRCM)	22.490	26.784	17.227	0.000	17.227
225	07	0401218F	KC-135s	11.917	10.220	20.453	0.000	20.453
226	07	0401219F	KC-10S	3.800	35.586	56.669	0.000	56.669
227	07	0401314F	OPERATIONAL SUPPORT AIRLIFT	0.000	4.916	4.988	0.000	4.988
228	07	0401315F	C-STOL AIRCRAFT	0.000	0.000	1.283	0.000	1.283
229	07	0401839F	Airlift/Other Tactical Data Link	7.700	0.000	0.000	0.000	0.000
230	07	0408011F	SPECIAL TACTICS/COMBAT CONTROL	7.549	11.354	7.345	10.325	17.670
113	07	0604263F	CVLSP	3.858	4.000	0.000	0.000	0.000
114	07	0605018F	Air Force Integrated Military Human Resources System (AF-IMHRS)	0.000	0.000	43.300	0.000	43.300
115	07	0605024F	Anti-Tamper Technology Executive Agent	20.407	47.276	42.255	0.000	42.255
231	07	0702207F	Depot Maintenance (Non-IF)	1.489	1.508	1.514	0.000	1.514
232	07	0702976F	Facilities Restoration & Modernization (Logistics)	44.778	8.000	0.000	0.000	0.000
233	07	0708012F	Logistic Support Activities	23.042	0.000	0.000	0.000	0.000
234	07	0708610F	Logistics Information Technology (LOGIT)	144.861	246.250	227.614	0.000	227.614
235	07	0708611F	Support Systems Development	22.133	38.258	6.141	0.000	6.141

UNCLASSIFIED

Exhibit R-1

Page 6 of 7

UNCLASSIFIED

Air Force • President's Budget FY 2011 • RDT&E Program

Exhibit R-1

(Listing by Budget Activity, then Program Element Number)

BA# 07: Operational Systems Development

Cost (\$ in Millions)

Line#	BA#	PE#	PE Title	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
236	07	0804743F	OTHER FLIGHT TRAINING	2.000	0.805	0.667	0.000	0.667
237	07	0804757F	JOINT NATIONAL TRAINING CENTER	3.115	3.220	9.000	0.000	9.000
238	07	0804772F	TRAINING DEVELOPMENTS	0.000	1.769	0.000	0.000	0.000
239	07	0808716F	OTHER PERSONNEL ACTIVITIES	1.113	0.116	0.116	0.000	0.116
240	07	0901202F	JOINT PERSONNEL RECOVERY AGENCY (JPRA)	5.590	11.376	6.107	0.000	6.107
241	07	0901212F	SERVICE-WIDE SUPPORT	3.648	0.000	0.000	0.000	0.000
242	07	0901218F	Civilian Compensation Program	14.647	8.174	7.811	0.000	7.811
243	07	0901220F	PERSONNEL ADMINISTRATION	18.947	30.969	11.179	0.000	11.179
244	07	0901538F	Financial Management Information Systems (FMIS)	22.999	55.891	49.816	0.000	49.816
Total: Operational Systems Development				4,935.417	6,437.017	6,513.941	20.868	6,534.809

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604263F: <i>CVLSP</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	3.858	4.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
675277: <i>CVLSP</i>	3.858	4.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Common Vertical Lift Support Platform (CVLSP) core missions are to provide nuclear weapon convoy escort, 24/7 adverse weather capable InterContinental Ballistic Missile (ICBM) emergency security response/operational support, and mass passenger transport/Operational Support Airlift (OSA) in the National Capital Region. Other assigned missions include Pacific Air Forces (PACAF) OSA, survival school support, test and range support, and combat aviation advisor training.

Budget Justification: CVLSP RDT&E funding was moved to Aircraft Procurement Air Force (APAF) beginning in FY11. RDT&E funding activities in FY09/10 include, but are not limited to, acquisition program activities and milestone (MS) document development. Key activities and products include: systems engineering strategy and analysis, technology and manufacturing maturity analysis, risk analysis and management, test and evaluation strategy, life cycle cost estimates, sustainment and logistics analysis and configuration studies. FY10 funding supports a Materiel Development Decision (MDD) and acquisition strategy development.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	3.868	9.513	0.000	0.000	0.000
Current President's Budget	3.858	4.000	0.000	0.000	0.000
Total Adjustments	-0.010	-5.513	0.000	0.000	0.000
• Congressional General Reductions		-5.513			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.010	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0604263F: *CVLSP*

Change Summary Explanation

FY09 Congressional General Rescission

FY10 Congressional Program Reduction

FY11 Funding realigned into APAF to support activities supporting a production contract award in FY12

UNCLASSIFIED

R-1 Line Item #113

Page 2 of 8

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604263F: <i>CVLSP</i>	PROJECT 675277: <i>CVLSP</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675277: <i>CVLSP</i>	3.858	4.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Common Vertical Lift Support Platform (CVLSP) core missions are to provide nuclear weapon convoy escort, 24/7 adverse weather capable InterContinental Ballistic Missile (ICBM) emergency security response/operational support, and mass passenger transport/Operational Support Airlift (OSA) in the National Capital Region. Other assigned missions include Pacific Air Forces (PACAF) OSA, survival school support, test and range support, and combat aviation advisor training.

Budget Justification: CVLSP RDT&E funding was moved to Aircraft Procurement Air Force (APAF) beginning in FY11. RDT&E funding activities in FY09/10 include, but are not limited to, acquisition program activities and milestone (MS) document development. Key activities and products include: systems engineering strategy and analysis, technology and manufacturing maturity analysis, risk analysis and management, test and evaluation strategy, life cycle cost estimates, sustainment and logistics analysis and configuration studies. FY10 funding supports a Materiel Development Decision (MDD) and acquisition strategy development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Procure a medium lift helicopter with improved speed, range, capacity and survivability to replace the AF fleet of UH-1N. <i>FY 2009 Accomplishments:</i> In FY 2009: Program office support, Joint Capabilities Integration and Development System (JCIDS) requirement document reviews, development of statutory & regulatory acquisition documentation and preparation for a FY12 contract award.	3.858	4.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604263F: <i>CVLSP</i>	PROJECT 675277: <i>CVLSP</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Program office support, Joint Capabilities Integration and Development System (JCIDS) requirement document reviews, development of statutory & regulatory acquisition documentation and preparation for a FY12 contract award.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: N/A</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 (OCO): N/A</p>					
Accomplishments/Planned Programs Subtotals	3.858	4.000	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0604263F: <i>CVLSP (3010) Air Force</i>	0.000	0.000	6.432	0.000	6.432	58.939	138.353	145.600	214.187	0.000	0.000

D. Acquisition Strategy

Common Vertical Lift Support Platform (CVLSP) program will replace the current USAF UH-1N fleet of 62 aircraft with an aircraft with improved speed, range, capacity and survivability. CVLSP program will award a production contract starting in FY12 to achieve Initial Operational Capability by FY15. The CVLSP is expected to be an in-production, non-developmental, Government Off-The-Shelf or Commercial Off-The-Shelf (GOTS/COTS) aircraft.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0604263F: <i>CVLSP</i>				PROJECT 675277: <i>CVLSP</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CVLSP Development Contract	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Acquisition Program Planning	Various	Various Various	2.914	2.400		0.000		0.000		0.000	0.000	5.314	0.000
Subtotal			2.914	2.400		0.000		0.000		0.000	0.000	5.314	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604263F: <i>CVLSP</i>	PROJECT 675277: <i>CVLSP</i>
--	---	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Support	Various	WPAFB OHIO	0.012	0.050		0.000		0.000		0.000	0.000	0.062	0.000
Subtotal			0.012	0.050		0.000		0.000		0.000	0.000	0.062	0.000

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Support	Various	WPAFB OHIO	0.932	1.550		0.000		0.000		0.000	0.000	2.482	0.000
Subtotal			0.932	1.550		0.000		0.000		0.000	0.000	2.482	0.000

Remarks

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Cost Totals		3.858	4.000		0.000		0.000	0.000	0.000	7.858	0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

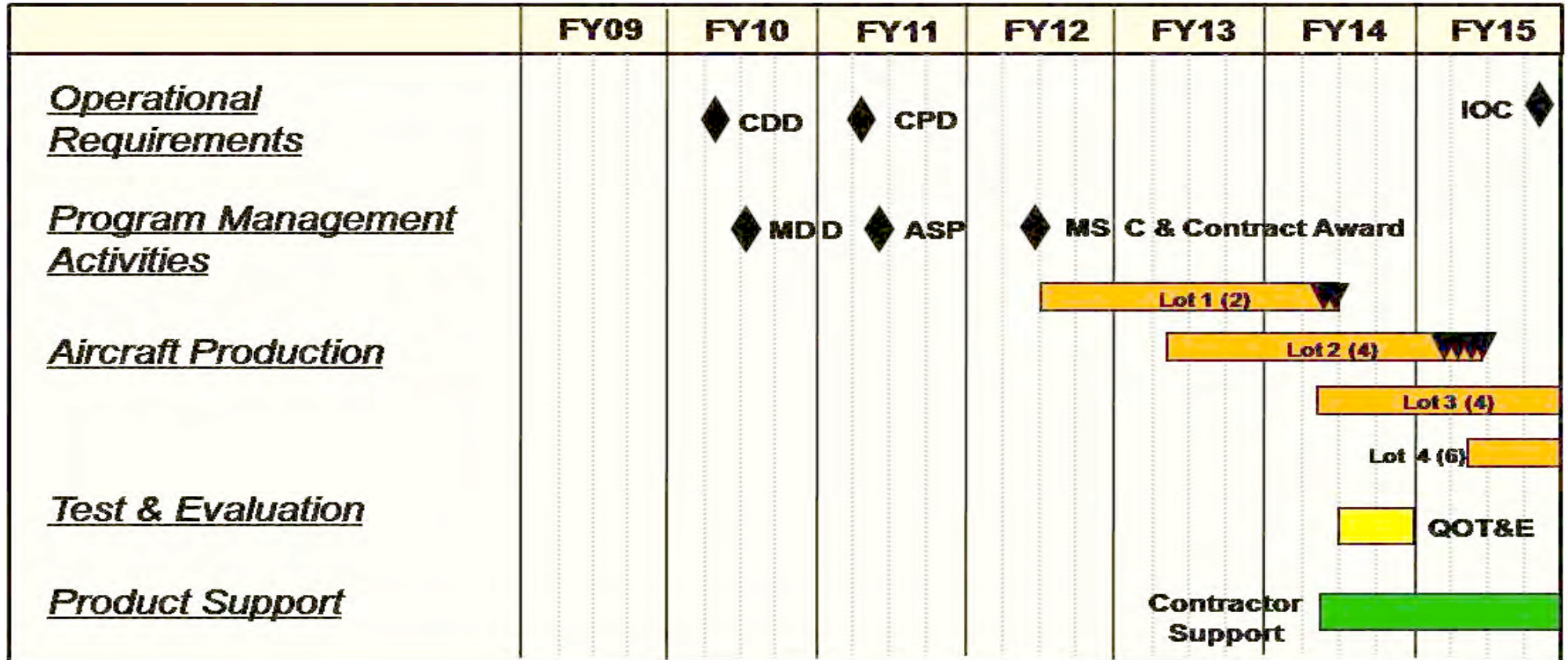
R-1 ITEM NOMENCLATURE

PE 0604263F: CVLSP

PROJECT

675277: CVLSP

CVLSP Program Schedule



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604263F: <i>CVLSP</i>	PROJECT 675277: <i>CVLSP</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Market Research	2	2009	2	2010
Capability Development Decision (CDD) Approval	2	2010	2	2010
Material Development Decision (MDD) Review	2	2010	3	2010
Develop Acquisition Strategy	2	2010	4	2010

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0605018F: <i>Air Force Integrated Military Human Resources System (AF-IMHRS)</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	43.300	0.000	43.300	96.200	91.000	129.800	113.600	Continuing	Continuing
676003: <i>HRM Structural Development</i>	0.000	0.000	43.300	0.000	43.300	96.200	91.000	129.800	113.600	0.000	0.000

Note

In FY 2010, this is a new PE. In FY 2010, 676003, Human Resources Management (HRM) Structural Development, efforts were transferred from PE 0901220F, Personnel Administration, 675272, Defense Integrated Military Human Resources System, because the program was transitioned from the Business Transformation Agency to the Services.

In FY 2010, \$20.490M was inadvertently placed in the wrong PE 0901220F, Personnel Administration; FY 2010 funding will be executed in PE 0605018F, Air Force Integrated Military Human Resources System.

A. Mission Description and Budget Item Justification

The Air Force Defense Integrated Military Human Resources System (AF DIMHRS) is a Major Defense Acquisition Program currently transitioning from the Business Transformation Agency (BTA) to the Services as directed by OSD, AT&L through the 8 Sep 09 ADM. The program will now be partitioned into Service-specific systems, with each system populating a common DoD-wide enterprise warehouse - thus maintaining key elements of the original intent of the program. The AF will develop a Service-specific integrated military personnel and pay system, building on the DIMHRS core software to the maximum extent practical. RDT&E activities include assessing the DoD DIMHRS core, analysis and studies, planning activities, request for proposal (RFP) development, system development, test, deployment, and acquisition logistics. Since DIMHRS is replacing and/or interfacing with operational systems, DIMHRS must also ensure that current required pay and personnel capabilities are provided through DIMHRS gap-filler tasks or operational system adaptation. Planning and deployment activities include communication, change management, testing, training, systems transition, deployment, data cleansing/migration and schedule control. DIMHRS transitioned from BTA to Services as directed by OSD in Sep 09.

This program is in Budget Activity 7, Operational System Development, because it upgrades and develops capabilities for current operational systems.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0605018F: <i>Air Force Integrated Military Human Resources System (AF-IMHRS)</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	43.300	0.000	43.300
Total Adjustments	0.000	0.000	43.300	0.000	43.300
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	43.300	0.000	43.300

Change Summary Explanation

Program transitioned from BTA to the Services. Funding for FY10 (\$20.490M) moved from PE 0901220F, Personnel Administration.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0605018F: <i>Air Force Integrated Military Human Resources System (AF-IMHRS)</i>	PROJECT 676003: <i>HRM Structural Development</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
676003: <i>HRM Structural Development</i>	0.000	0.000	43.300	0.000	43.300	96.200	91.000	129.800	113.600	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Air Force Defense Integrated Military Human Resources System (AF DIMHRS) is a Major Defense Acquisition Program currently transitioning from the Business Transformation Agency (BTA) to the Services as directed by OSD, AT&L through the 8 Sep 09 ADM. The program will now be partitioned into Service-specific systems, with each system populating a common DoD-wide enterprise warehouse - thus maintaining key elements of the original intent of the program. The AF will develop a Service-specific integrated military personnel and pay system, building on the DIMHRS core software to the maximum extent practical. RDT&E activities include assessing the DoD DIMHRS core, analysis and studies, planning activities, request for proposal (RFP) development, system development, test, deployment, and acquisition logistics. Since DIMHRS is replacing and/or interfacing with operational systems, DIMHRS must also ensure that current required pay and personnel capabilities are provided through DIMHRS gap-filler tasks or operational system adaptation. Planning and deployment activities include communication, change management, testing, training, systems transition, deployment, data cleansing/migration and schedule control. DIMHRS transitioned from BTA to Services as directed by OSD in Sep 09.

This program is in Budget Activity 7, Operational System Development, because it upgrades and develops capabilities for current operational systems.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: DIMHRS System Development	0.000	0.000	37.577	0.000	37.577
<i>FY 2009 Accomplishments:</i> In FY 2009: N/A					
<i>FY 2010 Plans:</i> In FY 2010: N/A					

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0605018F: <i>Air Force Integrated Military Human Resources System (AF-IMHRS)</i>	PROJECT 676003: <i>HRM Structural Development</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: The DIMHRS prime contractor will begin work on requirements analysis, design, and development for the DIMHRS system and support other activities associated with ensuring Air Force pay and personnel capabilities remain viable until system development.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>					
<p>MAJOR THRUST: Technical and Program Management</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: N/A</p> <p><i>FY 2010 Plans:</i> In FY 2010: Will stand-up and utilize the transition lab environment; plan, develop, and execute acquisition strategy.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Will conduct source selection and award of the prime DIMHRS contract.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>	0.000	0.000	5.723	0.000	5.723
Accomplishments/Planned Programs Subtotals	0.000	0.000	43.300	0.000	43.300

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0901220 F: <i>Personnel Administration, (RDT&E)</i>	8.652	20.490	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0605018F: <i>Air Force Integrated Military Human Resources System (AF-IMHRS)</i>	PROJECT 676003: <i>HRM Structural Development</i>
--	---	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0901250 F: <i>Air Force Integrated Military Human Resources System, (OPAF)</i>	0.000	0.000	0.000	0.000	0.000	12.000	20.000	4.100	4.100	0.000	0.000

D. Acquisition Strategy

Defense Integrated Military Human Resources System employs an incremental acquisition strategy, development contract will be negotiated and awarded in a competitive environment.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0605018F: <i>Air Force Integrated Military Human Resources System (AF-IMHRS)</i>					PROJECT 676003: <i>HRM Structural Development</i>				

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Core Transition Lab Environment and Evaluation	TBD/TBD	TBD TBD	0.000	0.000	May 2010	0.000		0.000		0.000	0.000	0.000	0.000
System Development, Test and Deployment	TBD/TBD	TBD TBD	0.000	0.000		37.577	Apr 2011	0.000		37.577	0.000	37.577	0.000
IV&V	TBD/TBD	TBD TBD	0.000	0.000	Mar 2010	1.100	Apr 2011	0.000		1.100	0.000	1.100	0.000
Subtotal			0.000	0.000		38.677		0.000		38.677	0.000	38.677	0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Functional Management Support	C/FFP	Booz, Allen, Hamilton, Inc McLean, VA	0.000	0.000	Feb 2010	0.000		0.000		0.000	0.000	0.000	0.000
Architecture	SS/Various	MITRE Hanscom AFB, MA	0.000	0.000	Jan 2010	1.275	Jan 2011	0.000		1.275	0.000	1.275	0.000
A&AS	C/CPFF	Various	0.000	0.000	Dec 2010	3.043	Jan 2011	0.000		3.043	0.000	3.043	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0605018F: <i>Air Force Integrated Military Human Resources System (AF-IMHRS)</i>	PROJECT 676003: <i>HRM Structural Development</i>
--	---	---

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		Hanscom AFB, MA											
Program Support	Various/ Various	Various Various	0.000	0.000	Jan 2010	0.305	Jan 2011	0.000		0.305	0.000	0.305	0.000
Subtotal			0.000	0.000		4.623		0.000		4.623	0.000	4.623	0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	0.000	0.000		43.300		0.000		43.300	0.000	43.300	0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

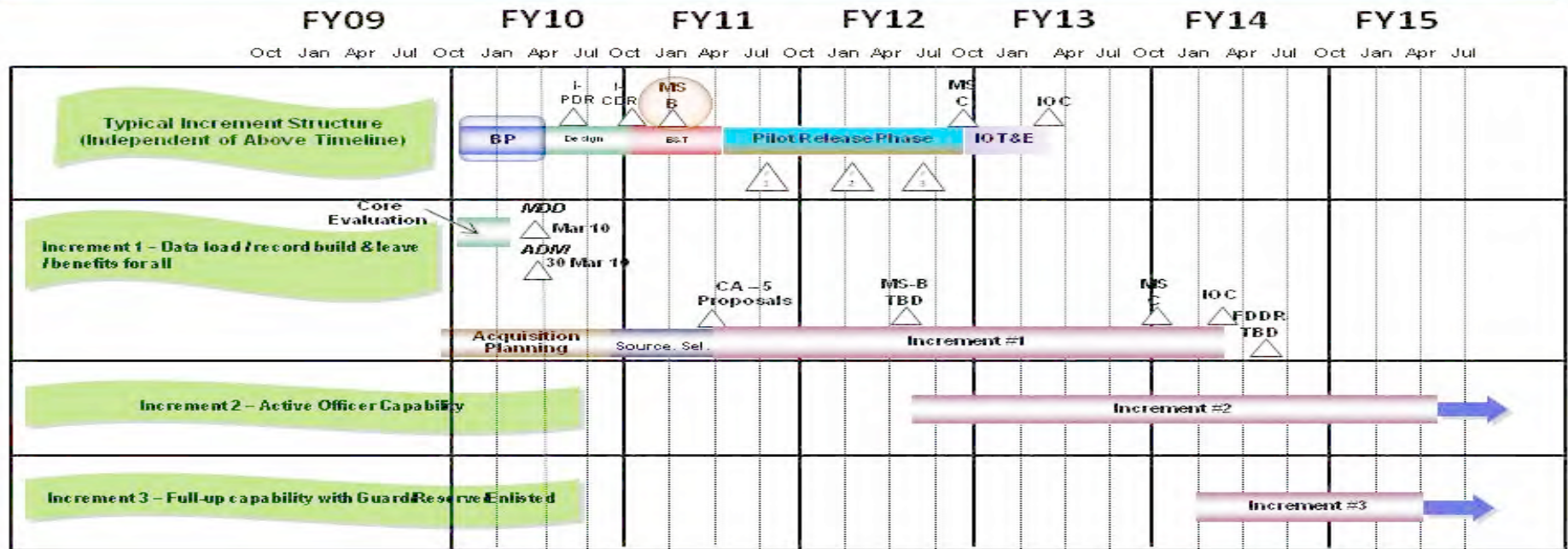
PE 0605018F: Air Force Integrated Military Human Resources System (AF-IMHRS)

PROJECT

676003: HRM Structural Development



Program Schedule Notional



Integrity - Service - Excellence

1

UNCLASSIFIED

R-1 Line Item #114
Page 8 of 9

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0605018F: <i>Air Force Integrated Military Human Resources System (AF-IMHRS)</i>	PROJECT 676003: <i>HRM Structural Development</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Acquisition Planning	1	2010	4	2010
Source Selection	4	2010	3	2011
Increment #1	3	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0605024F: <i>Anti-Tamper Technology Executive Agent</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	20.407	47.276	42.255	0.000	42.255	37.140	30.472	29.863	29.066	Continuing	Continuing
675066: <i>Anti-Tamper Technology Executive Agent</i>	20.407	47.276	42.255	0.000	42.255	37.140	30.472	29.863	29.066	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Air Force is the DoD Anti-Tamper Executive Agent (ATEA). The ATEA is responsible for implementing Anti-Tamper (AT) policy, coordinating and providing financial support for AT technology development, establishing and maintaining a data bank/library, providing proper security mechanisms, conducting effective validation and assessing AT implementations. The purpose of developing AT techniques is to protect critical technologies in U.S. weapon systems that may be sold to foreign governments or that could possibly fall into enemy hands. AT technology will permit the U.S. to preserve its critical weapons systems lead while also satisfying customer needs. Furthermore, AT will add longevity to critical technologies by deterring efforts to reverse engineer or develop weapon countermeasures against a system or system component.

As the DoD Anti-Tamper Executive Agent, the Air Force will coordinate the technology development enhancement among the Services, DoD Agencies, and laboratories, and with industry. The DoD ATEA will not issue contracts for AT technology development but will plus-up existing Anti-Tamper technology projects to increase their technology readiness level. Priorities will be given to technologies that benefit the majority of the AT community. The Anti-Tamper technology enhancement will occur in the following areas: advanced sensor hardware, generic electronic hardware, signature control, access detection & denial, software, and effectiveness. The program management activities will coordinate the technology development and establish the Anti-Tamper data bank/library.

Anti-Tamper validation is a significant responsibility assigned to the Air Force. All DoD acquisition programs, Foreign Military Sales, and Direct Commercial Sales with critical technology/critical information are required to have an Anti-Tamper plan with appropriate validation. The resources required to review Anti-Tamper plans and conduct Anti-Tamper validation began to increase in late FY03. Based on Anti-Tamper validation requirement projections, the number of Anti-Tamper experts needs to expand.

Beginning in FY09 additional funding has been dedicated to the technical development of new AT capabilities. Emerging research in the areas of materials, cryptography and electronic circuits has the potential to bring new AT capabilities that have reduced power needs, a smaller form factor, and less detectability by nation class adversary using state of the art reverse engineering tools. The goal of the reserach is to mature promising technologies to the point that they can be transitioned to a program office or industry prime for implementation in our weapons systems.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0605024F: <i>Anti-Tamper Technology Executive Agent</i>
--	--

This program is in Budget Activity 07, Operational System Development, because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	20.407	47.276	0.000	0.000	0.000
Current President's Budget	20.407	47.276	42.255	0.000	42.255
Total Adjustments	0.000	0.000	42.255	0.000	42.255
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	42.255	0.000	42.255

Change Summary Explanation

None

UNCLASSIFIED

R-1 Line Item #115

Page 2 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0605024F: <i>Anti-Tamper Technology Executive Agent</i>				PROJECT 675066: <i>Anti-Tamper Technology Executive Agent</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675066: <i>Anti-Tamper Technology Executive Agent</i>	20.407	47.276	42.255	0.000	42.255	37.140	30.472	29.863	29.066	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Air Force is the DoD Anti-Tamper Executive Agent (ATEA). The ATEA is responsible for implementing Anti-Tamper (AT) policy, coordinating and providing financial support for AT technology development, establishing and maintaining a data bank/library, providing proper security mechanisms, conducting effective validation and assessing AT implementations. The purpose of developing AT techniques is to protect critical technologies in U.S. weapon systems that may be sold to foreign governments or that could possibly fall into enemy hands. AT technology will permit the U.S. to preserve its critical weapons systems lead while also satisfying customer needs. Furthermore, AT will add longevity to critical technologies by deterring efforts to reverse engineer or develop weapon countermeasures against a system or system component.

As the DoD Anti-Tamper Executive Agent, the Air Force will coordinate the technology development enhancement among the Services, DoD Agencies, and laboratories, and with industry. The DoD ATEA will not issue contracts for AT technology development but will plus-up existing Anti-Tamper technology projects to increase their technology readiness level. Priorities will be given to technologies that benefit the majority of the AT community. The Anti-Tamper technology enhancement will occur in the following areas: advanced sensor hardware, generic electronic hardware, signature control, access detection & denial, software, and effectiveness. The program management activities will coordinate the technology development and establish the Anti-Tamper data bank/library.

Anti-Tamper validation is a significant responsibility assigned to the Air Force. All DoD acquisition programs, Foreign Military Sales, and Direct Commercial Sales with critical technology/critical information are required to have an Anti-Tamper plan with appropriate validation. The resources required to review Anti-Tamper plans and conduct Anti-Tamper validation began to increase in late FY03. Based on Anti-Tamper validation requirement projections, the number of Anti-Tamper experts needs to expand.

Beginning in FY09 additional funding has been dedicated to the technical development of new AT capabilities. Emerging research in the areas of materials, cryptography and electronic circuits has the potential to bring new AT capabilities that have reduced power needs, a smaller form factor, and less detectability by nation class adversary using state of the art reverse engineering tools. The goal of the reserach is to mature promising technologies to the point that they can be transitioned to a program office or industry prime for implementation in our weapons systems.

UNCLASSIFIED

R-1 Line Item #115

Page 3 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0605024F: <i>Anti-Tamper Technology Executive Agent</i>	PROJECT 675066: <i>Anti-Tamper Technology Executive Agent</i>
--	--	---

This program is in Budget Activity 07, Operational System Development, because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Advanced Anti-Tamper Technology Executive Agent activities including: AFRL/SNT Management, ATEA outsourcing, Anti-Tamper Verification and Validation, Assessments and technology devel... <i>FY 2009 Accomplishments:</i> In FY 2009: Continuation of above activities. <i>FY 2010 Plans:</i> In FY 2010: Continuation of above activities. <i>FY 2011 Base Plans:</i> In FY2011: Continuation of above activities. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.	20.407	47.276	42.255	0.000	42.255
Accomplishments/Planned Programs Subtotals	20.407	47.276	42.255	0.000	42.255

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0605024F: <i>Anti-Tamper Technology Executive Agent</i>	PROJECT 675066: <i>Anti-Tamper Technology Executive Agent</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (6491): <i>NONE</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The DoD ATEA technology development enhancement funding will be used to support existing AT technology development contracts. This funding will be used to increase the technology readiness level for that particular AT technology so as to reduce the risk to programs wanting to implement this AT technology. The DoD ATEA conducts yearly evaluations of technologies, provided by the AT Tri-Service community.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0605024F: <i>Anti-Tamper Technology Executive Agent</i>				PROJECT 675066: <i>Anti-Tamper Technology Executive Agent</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AFRL/SNT Management Program Oversight	TBD/TBD	TBD TBD	1.280	1.043	Mar 2010	1.500	Mar 2011	0.000		1.500	Continuing	Continuing	Continuing
Security/Infrastructure	TBD/TBD	TBD TBD	0.257	0.265	Mar 2010	1.000	Mar 2011	0.000		1.000	Continuing	Continuing	Continuing
Databases and websight	TBD/TBD	TBD TBD	0.460	0.701	Mar 2010	0.500	Mar 2011	0.000		0.500	Continuing	Continuing	0.000
Education and Outreach	TBD/TBD	TBD TBD	0.216	0.410	Mar 2010	0.300	Mar 2011	0.000		0.300	Continuing	Continuing	0.000
Subtotal			2.213	2.419		3.300		0.000		3.300			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ATEA Other Outsource Conference outsource	TBD/TBD	TBD TBD	0.060	0.050	Apr 2010	0.200	Apr 2011	0.000		0.200	Continuing	Continuing	Continuing
AFRL/AT-SPI	Allot	TBD TBD	0.065	0.075	Apr 2010	0.010	Apr 2011	0.000		0.010	Continuing	Continuing	Continuing
AT Course	TBD/TBD	TBD TBD	0.125	0.055	Apr 2010	0.050	Apr 2011	0.000		0.050	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0605024F: <i>Anti-Tamper Technology Executive Agent</i>				PROJECT 675066: <i>Anti-Tamper Technology Executive Agent</i>					

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DAU Course	TBD/TBD	TBD TBD	0.068	0.065	Apr 2010	0.050	Apr 2011	0.000		0.050	Continuing	Continuing	Continuing
Course	TBD/TBD	TBD TBD	0.092	0.305	Mar 2010	0.250	Mar 2011	0.000		0.250	Continuing	Continuing	Continuing
Subtotal			0.410	0.550		0.560		0.000		0.560			

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Anti-Tamper Verification & Validation Army	MIPR	TBD TBD	0.800	0.810	Mar 2010	0.700	Mar 2011	0.000		0.700	Continuing	Continuing	Continuing
Navy	MIPR	TBD TBD	0.800	0.810	Apr 2010	0.750	Apr 2011	0.000		0.750	Continuing	Continuing	Continuing
Air Force	MIPR	TBD TBD	0.800	0.810	Feb 2010	0.750	Feb 2011	0.000		0.750	Continuing	Continuing	Continuing
Sandia	MIPR	TBD TBD	0.648	0.720	Feb 2010	0.700	Feb 2011	0.000		0.700	Continuing	Continuing	Continuing
AT-SPI SW AT support	TBD/TBD	TBD TBD	0.324	0.354	Mar 2010	0.300	Mar 2011	0.000		0.300	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0605024F: <i>Anti-Tamper Technology Executive Agent</i>				PROJECT 675066: <i>Anti-Tamper Technology Executive Agent</i>					

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AT-SPI IRCM AT Support	TBD/TBD	TBD TBD	0.000	0.000		3.800	May 2011	0.000		3.800	Continuing	Continuing	Continuing
V&V Contingency	TBD/TBD	TBD TBD	0.975	0.100	Mar 2010	0.975	Mar 2011	0.000		0.975	Continuing	Continuing	Continuing
Network Training	TBD/TBD	TBD TBD	0.000	0.056	May 2010	20.670	Mar 2011	0.000		20.670	Continuing	Continuing	Continuing
Sandia V&V Training	MIPR	TBD TBD	0.000	0.680	May 2010	2.500	Mar 2011	0.000		2.500	Continuing	Continuing	Continuing
Subtotal			4.347	4.340		31.145		0.000		31.145			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Anti-Tamper Assessments Air Force AT Field Agent (412 TW/ EWF)	MIPR	TBD TBD	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
AFRL/SND	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
NAWC CRANE (Navy)	MIPR	TBD	0.425	0.975	Apr 2010	0.700	Apr 2011	0.000		0.700	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0605024F: <i>Anti-Tamper Technology Executive Agent</i>					PROJECT 675066: <i>Anti-Tamper Technology Executive Agent</i>				

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		TBD											
Army AT Field Agent (Aviation & Missile Cmd/Redstone)	MIPR	TBD TBD	0.000	0.560	Apr 2010	0.650	Apr 2011	0.000		0.650	Continuing	Continuing	Continuing
DoD Executive Agent Field Agent (AFRL/AT-SPI)	Allot	TBD TBD	0.000	0.000		0.900	Apr 2011	0.000		0.900	Continuing	Continuing	Continuing
Sandia National Lab	MIPR	TBD TBD	2.580	2.900	Mar 2010	5.000	Mar 2011	0.000		5.000	Continuing	Continuing	Continuing
Assessment Contract Activities	TBD/TBD	TBD TBD	0.083	1.225	Mar 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Anti-Tamper Technology Development Enhancements AFRL/AT-SPI	TBD/TBD	TBD TBD	5.000	0.000		0.000		0.000		0.000	0.000	5.000	0.000
Sandia National Lab (1)	MIPR	TBD TBD	5.349	0.000		0.000		0.000		0.000	0.000	5.349	0.000
Technology Contract Activities	TBD/TBD	TBD TBD	0.000	34.307		0.000		0.000		0.000	0.000	34.307	0.000
New Activity Funds	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			13.437	39.967		7.250		0.000		7.250			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0605024F: <i>Anti-Tamper Technology Executive Agent</i>	PROJECT 675066: <i>Anti-Tamper Technology Executive Agent</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	20.407	47.276	42.255	0.000	42.255			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0605024F: *Anti-Tamper Technology Executive Agent*

PROJECT

675066: *Anti-Tamper Technology Executive Agent*

--	--	--

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0605024F: <i>Anti-Tamper Technology Executive Agent</i>	PROJECT 675066: <i>Anti-Tamper Technology Executive Agent</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
ATEA Field Office	1	2009	4	2010
Database and Website Updates & Maintenance	1	2009	4	2010
Education & Outreach	1	2009	4	2010
AT Conference	2	2009	3	2010
Program V&V Evaluations	1	2009	4	2010
Assessments	2	2009	3	2010
Anti-Tamper Technology Development Enhancement	1	2009	4	2010

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	39.835	102.330	146.096	0.000	146.096	140.915	65.878	35.162	0.368	Continuing	Continuing
675039: <i>B-52 Modernization</i>	39.835	102.330	146.096	0.000	146.096	140.915	65.878	35.162	0.368	Continuing	Continuing

A. Mission Description and Budget Item Justification

B-52 Modernization is a comprehensive program to ensure B-52 viability to perform current and future wartime missions to include datalinks, navigation, sensors, weapons, and Electronic Warfare (EW) and training capabilities. B-52 modernization (initiated in FY 2005) integrates and adds both tactical and global data link communications for real time command and control, targeting, and intelligence. It also upgrades antiquated air traffic management (ATM) systems with those supported by three key functions using satellite technology: Communications, Navigation and Surveillance (CNS). Modernization also upgrades training devices to support aircrew and maintenance training with the latest B-52 capability. In addition, modernization improves conventional warfare capability with additional MIL-STD-1760 smart weapons and improved weapons carriage and fully integrates advanced targeting pods with the offensive avionics system. B-52 modernization also upgrades or replaces legacy defensive EW systems to include the radar warning receiver, jammers, chaff and flare dispensers and situational awareness displays as well as integration of offensive EW such as the Miniature Air-Launched Decoy (MALD) and MALD-Jammer (MALD-J).

CONNECT

The B-52 Combat Network Communication Technology (CONNECT) acquisition program will support nuclear and conventional operations by upgrading the B-52 fleet with tactical data link and voice communications capabilities along with improved threat and situational awareness to support participation in network centric operations. The CONNECT upgrade includes new Multi-Functional Color Displays (MFCDs) and a digital interphone system, which will survive and function through the nuclear environment to enhance crew interaction and situational awareness. To enable net centric operations, the CONNECT upgrade integrates: on-board client/server architecture supporting distributed processing with independent control functions; UHF Beyond Line-Of-Sight (BLOS) Joint Range Extension (JRE) capability via ARC-210 Warrior radio to exchange J-Series messaging within theater; Intelligence Broadcast Receiver (IBR); limited Internet Protocol (IP)-based UHF BLOS link supporting e-mail and file transfers; and Improved Data Modem (IDM)-based digital Variable Message Format (VMF) datalink to significantly enhance close air support (CAS) missions. This integrated suite will provide the B-52 fleet with a machine-to-machine data transfer capability supporting aircraft re-tasking and re-targeting of Conventional Air Launched Cruise Missile (CALCM) and J-series weapons across the range of B-52 military operations and missions.

B-52 EHF

UNCLASSIFIED

R-1 Line Item #117

Page 1 of 24

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>	
<p>The B-52 Extremely High Frequency (EHF) will integrate and install the B-52 fleet with assured and survivable two-way EHF SATCOM link for Emergency Action Messages (EAMs) and report-backs to meet Joint Chiefs of Staff (JCS) nuclear protected Information Exchange Requirements (IER). The B-52 EHF will integrate the Family of Advanced Beyond-Line-of-Sight (BLOS) Terminal (FAB-T) Increment 1 system developed and procured by Space and Missile Command (SMC) through PE 0303601F. The FAB-T system consists of the Operator Interface Group, Modem Processor Group, and Antenna Group. The B-52 EHF will integrate the following capability into the CONECT baseline B-52 architecture: a high data rate BLOS communication link supporting IP-based Global Information Grid (GIG) interoperability. The two Multi-function Color Displays (MFCDs) and the additional J-Series Messages that were to be integrated into CONECT with the B-52 EHF have been moved to the Strategic Radar Replacement and CONECT programs, respectfully. In addition, the automated reporting of aircraft fuel level status off-board the jet capability will also be moved from the B-52 EHF. Disposition of this capability is pending an approved acquisition strategy. The B-52 EHF program is planned to be accomplished in three increments. Increment 1 is the up front program planning and risk reduction trade studies on items like radome mounting, environmental cooling system (ECS) capabilities, antenna boresighting, etc. Increment 2 will integrate, and install the FAB-T equipment for strategic connectivity, as well as implement trade study solutions. In addition, the ECS will need to be upgraded or replaced. The ECS modification requirements will allow enough margin to accommodate near-term, future roadmap efforts. Finally, Increment 3 will provide GIG and net ready capability as well as full integration with other B-52 systems.</p> <p>Trainers and upgrades for CONECT & EHF</p> <p>In order to maintain currency with the latest aircraft configuration, the CONECT and EHF programs will update existing trainers or use computer-based training to add CONECT and EHF functionality to meet user-training requirements and establish a system integration laboratory (SIL) for updates of the Weapon System Trainers (WST).</p> <p>Advanced Targeting Pod Functionality</p> <p>The B-52 Modernization program fully integrates Advanced Targeting Pods (ATP) by linking pod control, display and target geo-location with the B-52 Offensive Avionics System (OAS). The B-52 ATP effort continues the ATP (Sniper or LITENING) integration effort that began in FY07 with GWOT funding. The ATP effort develops aircraft software updates to add and incorporate advanced pod functionality into the B-52. In addition, this effort upgrades the software functions of the new Alternate Mission Equipment (AME) (Multi Function Display and the Integrated Hand Controller), developed and procured under the B-52 Advanced Weapons Integration (AWI) modification, and enables the B-52 to utilize a LITENING or Sniper pod. This effort provides hardware and software upgrades to the existing aircrew/maintenance trainers and the SIL.</p> <p>Weapons Improvements</p> <p>B-52 Modernization also includes improvement of conventional warfare capability. This effort provides development and testing to rapidly integrate weapons with a large array of properties but not limited to: stealth, hard target penetration, standoff, adverse weather, precision strike, loiter, decoy, defense suppression, post-release/</p>		

UNCLASSIFIED

R-1 Line Item #117

Page 2 of 24

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>	
<p>launch re-target capability, area denial, mobile targets, and multiple simultaneous attack. These capabilities are provided through the integration of advanced weapons both internally (MIL-STD-1760 data bus in the weapons bay) and externally.</p> <p>1760 In the Bay</p> <p>B-52 Modernization provides for expansion of B-52H conventional munitions carriage capability through modification of weapons carriage equipment and aircraft software IAW MIL-STD-1760 (hereafter, "1760"). The 1760 In the Bay program modifies aircraft software and the Common Strategic Rotary Launcher (CSRL) to carry 1760-based munitions in the B-52's internal weapons bay. It follows a 2005 flight demonstration in which a B-52 successfully dropped eight Joint Direct Attack Munitions (JDAMs) from a modified CSRL using a prototype Integrated Weapons Interface Unit (IWIU). Following the demonstration, the IWIU went into production to sustain external wing pylon 1760 requirements under the AWI program. Congressional adds in FY 2006 and 2007 provided the software design work and risk reduction activities for an internal 1760 capability. The 1760 In the Bay program uses the same external pylon IWIU to control the smart weapons on the CSRL. Modified CSRLs lose their current nuclear capability; therefore, only those launchers not required for nuclear missions will be modified. However, nuclear capability can be restored to the CSRL upon integration of 1760 Type II nuclear munitions. The program also modifies the aircraft's weapon interface Stores Management Overlay (SMO) software. The SMO for each weapon family will be upgraded to expand its capability from external pylon-only carriage to include carriage on the CSRL in the weapons bay. 1760 In the Bay includes hardware and software upgrades to aircrew/maintenance training devices, weapons carriage and release systems test equipment, and the B-52 SIL and Avionics Integration Support Facility (AISF). Initial program threshold capability modifies the Joint Direct Attack Munition (JDAM) SMO for internal carriage of eight GBU-31 (2000lb) JDAMs on each modified 1760 CSRL. Future internal capabilities include all family variants of (1) JDAM, such as, GBU-38 (500 lb), GBU-54 (Laser JDAM), and Countermine System; (2) Joint Air to Surface Standoff Missile (JASSM) and JASSM-Extended Range (JASSM-ER); (3) Wind Corrected Munitions Dispenser (WCMD); (4) MALD and MALD-J; (5) Laser Guided Bombs (LGB); and (6) expansion of CSRL carriage quantity.</p> <p>Communication Navigation Surveillance/Air Traffic Management (CNS/ATM)</p> <p>Capabilities identified under CNS/ATM activities will include FM Immunity, digital communications (voice and data), improved navigation accuracy such as Required Navigation Performance (RNP) or Global Positioning System (GPS) enhancements, Reduced Vertical Separation Minimum (RVSM), Traffic Alert and Collision Avoidance System (TCAS), enhanced situational awareness such as Mode S/Mode 5 Identify Friend or Foe (IFF), Communications Management Unit, HF Data Link, 8.33MHz VHF, Auto Dependent Surveillance (both address and broadcast), and any follow-on activities to associated components/systems resulting from modifications to CNS/ATM systems.</p> <p>Mode S/5 Identification Friend or Foe (IFF)</p> <p>Mode S/5 IFF is part of the CNS/ATM effort and will develop and integrate modern technology into the B-52 to enable it to operate in the evolving air traffic environment. This effort is driven by the International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA) mandates to comply with</p>		

UNCLASSIFIED

R-1 Line Item #117

Page 3 of 24

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>
--	--

performance standards to allow the B-52 to operate safely in controlled airspaces. This program will also yield significant savings through more efficient flight routes and altitudes. The Mode S/5 portion includes upgrade of the current APX-64 with the APX-119 transponder capable of Mode S/5 and will leverage architecture to include simultaneous integration of Automatic Dependent Surveillance - Broadcast (ADS-B) capability required for operations in European airspace by 2015 and CONUS airspace by 2020.

Replace B-52 Anti-Skid

The B-52 Anti-Skid system is used to maintain control of aircraft during landings and taxi operations. It prevents aircraft skidding by sensing the exact amount of brake pressure needed for safe braking under all runway conditions and without tire damage. Aircraft not equipped with anti-skid capabilities require special procedures not conducive to normal operations and face increased risk of damage during taxi, landings and emergency stops. Ogden Air Logistics Center (OO-ALC) has identified the Anti-Skid skid detector as a Diminishing Manufacturing Sources (DMS) item requiring replacement beginning in FY11. However, depot maintenance is attempting to refurbish some failed detectors in order to provide spares until 2014/2015 when the replacement will be available. The Anti-Skid is a joint effort between OO-ALC and Oklahoma City Air Logistics Center (OC-ALC). This program covers the Group A and Group B hardware development, ground and flight test, and installation of the system to include upgrade of the maintenance trainers.

Strategic Radar Replacement

The B-52 Strategic Radar Replacement (SR2) program replaces the current AN/APQ-166 Strategic Radar fielded in the 1960s and then upgraded in the 1970s and 1980s. Although modified several times, it has never been totally replaced and several parts of the system remain from the original design such as the antenna reflector, feed, and casting. The legacy ALQ-166 radar is becoming unsupportable with increasing signs of performance degradation, multiple DMS and materiel shortage issues and may require grounding aircraft beginning in 2016.

The Strategic Radar Replacement (SR2) program is a radar replacement program that will take advantage of the advanced capabilities of modern non-developmental radars, maximizing commonality with other platforms. The B-52 SR2 Program will integrate, test, and field a modern radar system to support the requirements of keeping the B-52 combat capable for its extended service life. Additionally, the remaining two legacy Multi-Function Display Systems will be replaced.

Engineering Studies & Analysis and Test & Evaluation

B-52 Modernization funds test activities at the Air Force Flight Test Center (AFFTC), engineering and planning studies for potential future weapon system enhancements (weapons, sensors, avionics and EW), upgrades to the B-52 SIL, AISF and WSTs, and weapon system operational/safety, supportability, reliability, and Total Ownership Cost (TOC) improvements.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>	
B-52 Tactical Data Link (TDL)		
<p>The B-52 Tactical Data Link (hereafter, TDL) will integrate Line-of-Sight (LoS) TDL, LINK-16 or new technologies alternative waveforms for inclusion in the CONECT architecture. Current CONECT Capabilities Description Document identifies mission area capability gaps that support rationale for TDL communications. Full integration of TDL on the B-52 involves significant effort to design, test, and certify the system for operational use. This program will develop DoD architecture products with an Information Support Plan (ISP) to provide mission area justification for TDL integration. Perform an Analysis-of-Alternatives (AoA) to determine terminal selection and transport/waveform requirements to meet operational needs. Develop candidate requirements/architecture definition utilizing the B-52 CONECT architecture as the baseline for integration. Perform aircraft installation trade studies to identify potential issues with integration (such as, size, weight, power, cooling, and antenna location/performance). Demonstrate capabilities using chosen AoA option.</p>		
Reconstitution of B-52 Nuclear Capability Study		
<p>Renewed emphasis of the Air Force Nuclear Mission and the pivotal role the B-52 capabilities play into that role require a study to be completed to ensure the platform maintains an enhanced level of readiness. The study will evaluate the nuclear hardening of the Integrated Weapons Interface Unit (IWIU). The study will look at the conceptual development of a MIL-STD-1760 Nuclear Weapons interface. The hardening of the IWIU will ensure the survivability of existing Global Strike Weapons as well as provide for future Nuclear 1760 capable weapons both in the bay and on the wing launch platforms.</p>		
ADDITIONAL EFFORTS		
<p>B-52 Modernization funds additional efforts that stem from the operation and maintenance of a 48 year-old aircraft, such as parts obsolescence and DMS. Examples include, but are not limited to upgrades to outdated avionics computers, mission planning interfaces to the Air Force Mission Support System (AFMSS) and other missing planning systems (JMPS), upgrades to the EW suite, and studies and analysis.</p>		
<p>All B-52 development programs support planned requirements for unique identification in their production phases. The B-52 Modernization upgrade program is included in Budget Activity (BA) 7, Operational System Development.</p>		

UNCLASSIFIED

R-1 Line Item #117

Page 5 of 24

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	41.124	93.930	0.000	0.000	0.000
Current President's Budget	39.835	102.330	146.096	0.000	146.096
Total Adjustments	-1.289	8.400	146.096	0.000	146.096
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		8.400			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-1.289	0.000	146.096	0.000	146.096

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 675039: *B-52 Modernization*

Congressional Add: *B-52 TACTICAL DATA LINK (TDL) will integrate Line of Sight (LoS) TDL, LINK-16 or new technologies alternative waveforms for inclusion in the CONECT architecture.*

Congressional Add: *In FY 2009: N/A*

Congressional Add Subtotals for Project: 675039

Congressional Add Totals for all Projects

	FY 2009	FY 2010
	0.000	6.000
	0.000	2.400
	0.000	8.400
	0.000	8.400

Change Summary Explanation

FY10 - Increase of \$8.4M includes two Congressional adds for Tactical Data Link (\$6.0M) and a Nuclear Reconstitution Study (\$2.4M).

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

R-1 Line Item #117

Page 6 of 24

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>	PROJECT 675039: <i>B-52 Modernization</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675039: <i>B-52 Modernization</i>	39.835	102.330	146.096	0.000	146.096	140.915	65.878	35.162	0.368	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Combat Network Communication Technology (CONNECT) Program is an evolutionary acquisition program to develop, integrate, test, and field several capabilities into the B-52 weapon system. CONNECT upgrades the B-52 fleet with digital and voice communications capabilities and improved situational awareness to support participation in network centric operations and interoperability with the Global Information Grid (GIG). CONNECT capabilities are implemented in a phased approach. Phase A upgrades digital and voice communication capabilities, on-board client/server networked architecture supporting distributed processing and control functions, integration of the Intel Broadcast System/Receiver (IBS/R) and new Multi-Functional Color Displays (MFCDs). This phase also provides the B-52 fleet with a machine-to-machine capability supporting aircraft retasking and retargeting of CALCM and J-series weapons, a limited Internet Protocol (IP)-based UHF Beyond Line-Of-Sight (BLOS) capability, and improved situational awareness. Phase B integrates the Family of Advanced BLOS Terminals (FAB-T) system hardware to support Extremely High Frequency (EHF) Satellite Communications (SATCOM). CONNECT Phase B provides the B-52 fleet with a survivable SATCOM link for emergency action messages (EAMs) to meet STRATCOM requirements as well as a high bandwidth BLOS data link communication capability supporting IP based GIG interoperability. In addition, two remaining legacy crew station displays are replaced with new MFCDs.

Trainers & CONNECT

B-52 aircrew and maintenance training devices are a mix of 1970's and '80's technology. Most have reached their design capacity and must be upgraded to remain useful training tools. Upgrades to some of the training systems must occur prior to incorporating CONNECT functionality. This planned approach enables the trainers to maintain currency with the latest aircraft configuration. The CONNECT program upgrades existing trainers, establishes a system integration laboratory for development of aircrew trainers, and adds CONNECT Phase A and Phase B functionality to meet user-training requirements.

Weapons Improvements

B-52 Modernization also includes improvement of conventional warfare capability. This effort provides development and testing to rapidly integrate weapons with a large array of properties, but not limited to: stealth, hard target penetration, standoff, adverse weather, precision strike, loiter, decoy, defense suppression, post-release/launch re-target capability, area denial, mobile targets, and multiple simultaneous attack. These capabilities are provided through the integration of advanced weapons both internally (MIL-STD-1760 in the bomb bay) and externally.

Advanced Targeting Pod Functionality

UNCLASSIFIED

R-1 Line Item #117

Page 7 of 24

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>	PROJECT 675039: <i>B-52 Modernization</i>
--	--	---

The B-52 Modernization program fully integrates the Advanced Targeting Pod (ATP) by linking pod control, display and target geo-location with the B-52 offensive avionics system. The B-52 ATP effort continues the ATP (Sniper or LITENING AT) integration effort which began in FY 07 with GWOT funding. The ATP effort develops aircraft software updates to add and incorporate advanced pod functionality into the B-52. In addition, this effort upgrades the software functions of the Alternate Mission Equipment (AME) (Multi Function Display and the Integrated Hand Controller), and enables all wired aircraft to utilize a LITENING pod, LITENING AT or Sniper. This effort provides hardware and software upgrades to the existing aircrew/maintenance trainers and the system integration lab.

GATM

GATM, or more accurately, Communication Navigation Surveillance/Air Traffic Management (CNS/ATM), will develop and integrate modern technology into the B-52 to enable it to operate in the evolving air traffic environment. This effort is driven by the International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA) mandates to comply with performance standards to allow the B-52 to operate safely in controlled airspaces. This program will also yield significant savings through more efficient flight routes and altitudes. Functions requiring updated technology in the B-52 are communications, navigation, and surveillance. More specifically the capabilities upgraded under CNS/ATM activities will include FM Immunity, Digital Communications (voice to data), improved navigation accuracy such as Required Navigation Performance (RNP) or Global Positioning System (GPS) enhancements, Reduced Vertical Separation Minimum (RVSM), Traffic Alert and Collision Avoidance System (TCAS), enhanced situational awareness such as Mode S/Mode 5 Identify Friend or Foe (IFF), Communications Management Unit, HF Data Link, 8.33MHz VHF, Auto Dependent Surveillance (both address and broadcast), and any follow-on activities to associated components/systems resulting from modifications to CNS/ATM systems.

Test & Evaluation

Additionally, B-52 Modernization funds test activities at the Air Force Flight Test Center (AFFTC), engineering and planning studies for potential future weapon system enhancements (weapons, sensors, and avionics), and weapon system operational/safety, supportability, reliability, and Total Ownership Cost (TOC) improvements.

Additional Efforts

Examples include upgrades to avionics computers, mission planning interface to the Air Force Mission Support System (AFMSS) and upgrades to the Electronic Countermeasures (ECM) suite.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: ADVANCED TARGETING POD (ATP)	1.766	8.608	2.180	0.000	2.180

UNCLASSIFIED

R-1 Line Item #117

Page 8 of 24

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>	PROJECT 675039: <i>B-52 Modernization</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Complete development of Drop C ground and flight test issues and continue integration and lab testing of final software configuration. Analyze/fix ground/flight test issues as they are identified. Conduct Initial Operational Test & Evaluation. Begin integrating CONECT functionality into training devices.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>						
<p>MAJOR THRUST: B-52 EXTREMELY HIGH FREQUENCY (EHF)</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Issued contract for EHF planning and risk reduction Increment 1 work efforts. Began planning tasks that included the systems engineering required to accomplish program risk reduction. The FY 2009 effort in support of Increment 1 will be the basis for Increment 2.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Completion of EHF planning and risk reduction efforts to reach System Requirement Review including the ECS requirements. The FY 2010 Increment 2 work efforts initiate the tasks necessary to bring the EHF program through Preliminary Design Review, upgrade the SIL and purchase of additional GFP.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continuation and completion of the EHF Increment 2 Preliminary Design Review work efforts and to the next approved milestone event.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>		2.000	20.649	45.349	0.000	45.349
<p>MAJOR THRUST: B-52 ANTI-SKID REPLACEMENT</p>		0.000	0.795	5.996	0.000	5.996

UNCLASSIFIED

R-1 Line Item #117

Page 10 of 24

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>	PROJECT 675039: <i>B-52 Modernization</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>The SR2 program will undertake other activities, as required to support a Milestone A decision in FY 2011.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: The SR2 program will seek a Milestone A decision and continue the risk reduction activities as necessary to prepare the Capabilities Development Document (CDD).</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>						
<p>MAJOR THRUST: MODE S/5 IDENTIFICATION FRIEND OR FOE (IFF).</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: N/A</p> <p><i>FY 2010 Plans:</i> In FY 2010: N/A</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Define requirements and begin development of the Group A hardware and control panel; conduct system safety analysis of APX-119 FMECA as it relates to the aircraft integration. Address aircraft integration issues related to space, weight, electrical power, hydraulics, cooling impacts. Begin development of test strategy to define criteria to verify the system meets B-52 requirements. Develop source control drawings, develop/revise wiring diagrams, harness designs and installations drawings. Procure APX-119 test article and Common Control Panel prototype to begin lab testing of design.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>		0.000	0.000	8.583	0.000	8.583
		0.958	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>		PROJECT 675039: <i>B-52 Modernization</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Systems engineering and development for additional SMO's including JASSM/JASSM-ER through Informal Qualification Test, Formal Qualification Test and Systems Integration Test; begin development of MALD/MALD-J SMOs; begin contractor test support for JASSM/JASSM-ER and supporting fielding documentation. Produce two prototypes to facilitate incremental development and testing of multiple SMOs; support initial test concept development and planning; support technical documentation and test mission development; support test instrumentation and modification to test aircraft.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>								
Accomplishments/Planned Programs Subtotals				39.835	93.930	146.096	0.000	146.096
				FY 2009	FY 2010			
<p>Congressional Add: B-52 TACTICAL DATA LINK (TDL) will integrate Line of Sight (LoS) TDL, LINK-16 or new technologies alternative waveforms for inclusion in the CONECT architecture.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: N/A</p> <p><i>FY 2010 Plans:</i> In FY 2010: Develop TDL architecture with an Information Support Plan. Perform an AoA. Develop candidate requirements/architecture definition for the B-52 CONECT architecture baseline. Perform SIL demonstration. Perform aircraft installation trade study.</p>				0.000	6.000			
				0.000	2.400			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>	PROJECT 675039: <i>B-52 Modernization</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)		
	FY 2009	FY 2010
Congressional Add: In FY 2009: N/A		
<i>FY 2009 Accomplishments:</i> In FY 2010: Perform a conceptual study of the requirements needed to harden the IWIU for existing Global Strike weapons and future nuclear 1760 capable weapons. The study will look at the feasibility of the integration of the Nuclear hardened IWIU (NHIWIU) on both the Common Strategic Rotary launcher and the SUU-67/72 pylons.		
<i>FY 2010 Plans:</i> In FY 2011: N/A		
Congressional Adds Subtotals	0.000	8.400

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0101113F: <i>B52 Squadrons, Aircraft Procurement BP11, Mods APAF</i>	11.501	61.270	69.074	0.000	69.074	156.560	118.892	111.257	139.417	0.000	0.000
• PE 0101113F (1): <i>B52 Squadrons, Aircraft Procurement BP13, ICS APAF</i>	0.000	0.000	3.443	0.000	3.443	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0101113F (2): <i>B52 Squadrons, Aircraft Procurement BP16, Initial Spares APAF</i>	0.063	8.460	7.050	0.000	7.050	12.759	13.809	13.781	2.530	0.000	0.000
	0.000	0.000	6.732	0.000	6.732	0.000	0.000	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>	PROJECT 675039: <i>B-52 Modernization</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0101113F (3): <i>B52 Squadrons, Aircraft Procurement BP19, Depot Standup APAF</i>											

D. Acquisition Strategy

The B-52 CONECT EMD prime contract is sole source to Boeing, Wichita, KS. Boeing will design, develop, test and procure the necessary equipment from their subcontractors; develop engineering drawings, logistic and technical data, and time compliance technical order (TCTO) for installation on the B-52. The EMD effort includes installing and testing CONECT equipment on a B-52 aircraft. The B-52 trainer assets will be modified to support CONECT.

The B-52 EHF EMD prime contract is sole source to Boeing, Wichita, KS. Boeing will integrate the Government Furnished Property (GFP) Family of Beyond-Line-Of-Sight Terminals (FAB-T); develop engineering drawings, logistic and technical data, and time compliance technical order (TCTO) for installation on the B-52. The EMD effort includes installing and testing EHF equipment on a B-52 aircraft. The B-52 trainer assets will be modified to support EHF.

The B-52 Advanced Targeting Pod (ATP) program is sole sourced the software development contract to Boeing Integrated Defense Systems (IDS), Wichita. The ATP trainer development contract will be awarded by OO-ALC via their trainer contract.

The 1760 In the Bay program will acquire software development and hardware design via a sole-source contract to Boeing IDS, Wichita KS. Deliverables include an updated J-series weapon SMOs (software), a prototype modified CSRL, logistics support, ground and flight test support, and engineering drawings. Production of IWIU, required for each modified CSRL, and will be sole source to Boeing. The program will competitively procure the CSRL modification kits (cables, connectors, and mounting brackets).

The B-52 Anti-Skid program is a joint effort between OC-ALC and OO-ALC. The modification will be implemented via Program Depot Maintenance (PDM) and Contract Field Team (CFT).

The B-52 Strategic Radar Replacement (SR2) Program is in the initial stage of acquisition planning. The detailed acquisition strategy will be developed based on the results of market research and the Materiel Development Decision, and the Analysis of Alternatives.

The Mode S/5 IFF Program is in the initial stage of acquisition planning. A detailed acquisition plan will be developed based on the results of the engineering studies being completed by ARINC Engineering Services, Oklahoma City, OK. Proposed implementation via PDM and CFT.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>	PROJECT 675039: <i>B-52 Modernization</i>
<p>The B-52 Electromagnetic Pulse (EMP) engineering assignment was contracted with Boeing IDS to deliver a plan and procedures for an active and passive EMP test of a USAF B-52 aircraft to be conducted at Patuxent River MD. This effort is a result of a STRATCOM requirement for a re-baselining and re-certification of B-52 EMP hardness. The last test was conducted in 1980.</p> <p>The Tactical Data Link (TDL) will be sole sourced to Boeing IDS, Wichita KS for the integration of TDL based on the CONECT baseline. This is determined by Congressional language.</p> <p>The Reconstitution of B-52 Nuclear Capability Study will be sole source to Boeing IDS utilizing an Engineering Assignment, Time and Materials via either the ESP or FAST IDIQ contracts.</p> <p>E. Performance Metrics</p> <p>Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.</p>		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>				PROJECT 675039: <i>B-52 Modernization</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CONNECT EMD	SS/CPIF	Boeing Wichita, KS	28.383	31.233		5.092		0.000		5.092	Continuing	Continuing	0.000
B-52 EHF EMD	SS/CPIF	Boeing Wichita, KS	2.000	15.933	Apr 2010	34.294		0.000		34.294	Continuing	Continuing	0.000
Advanced Pod Functions	MIPR	WPAFB, OH Dayton OH	1.571	0.500	Jan 2010	0.000		0.000		0.000	0.000	2.071	0.000
Mode S/5 IFF EMD	C/CPFF	ARINC Engineering Services Oklahoma City, OK	0.000	0.000		8.583		0.000		8.583	Continuing	Continuing	0.000
Strategic Radar Replacement (SR2)	TBD/TBD	TBD TBD	0.000	7.000	Jan 2010	28.318	Jan 2011	0.000		28.318	116.000	151.318	0.000
Anti-Skid Replacement	Various/ Various	Boeing Wichita, KS, ES3, Clearwater UT	0.000	0.795	Mar 2011	5.353	Mar 2012	0.000		5.353	Continuing	Continuing	0.000
1760 In the Bay Software Development	C/CPFF	Boeing Wichita, KS	0.000	5.800	Aug 2010	5.700	Mar 2011	0.000		5.700	0.000	11.500	0.000
1760 In the Bay Production Development	TBD/TBD	Boeing Wichita, KS	0.000	2.000	Aug 2010	11.500	Mar 2011	0.000		11.500	0.000	13.500	0.000
Tactical Data Link	C/FFP	Boeing Wichita, KS	0.000	6.000	Jun 2010	0.000		0.000		0.000	0.000	6.000	0.000
Reconstitution of B-52 Nuclear Capability Study	TM	Boeing Wichita, KS	0.000	2.400	Jun 2010	0.000		0.000		0.000	0.000	2.400	0.000
Subtotal			31.954	71.661		98.840		0.000		98.840			0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>	PROJECT 675039: <i>B-52 Modernization</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CONNECT Simulator/Trainer	MIPR	509 ACSS OO-ALC: UT	0.410	3.100		11.900		0.000		11.900	Continuing	Continuing	0.000
B-52 EHF Simulator/Trainer	MIPR	509 ACSS OO-ALC: UT	0.000	0.000		6.705		0.000		6.705	Continuing	Continuing	0.000
B-52 EHF Satellite Simulator - Lincoln Labs (FFRDC)	MIPR	ESC Hanscom AFB MA	0.000	4.000	Jan 2010	0.000		0.000		0.000	0.000	4.000	0.000
CONNECT Program Support, Studies & Analysis	Various/ Various	Various Various	0.000	0.350		0.100		0.000		0.100	Continuing	Continuing	0.000
B-52 EHF Program Support, Studies & Analysis	Various/ Various	Various Various	0.000	0.100		0.100		0.000		0.100	Continuing	Continuing	0.000
Pod Software Trainer Upgrades	MIPR	OO-ALC UT	0.000	0.000		2.180	Jan 2011	0.000		2.180	0.000	2.180	0.000
Pod Test Support	TBD/TBD	Boeing Wichita KS	0.000	2.700	Feb 2010	0.000		0.000		0.000	0.000	2.700	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>				PROJECT 675039: <i>B-52 Modernization</i>					

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Pod Logistics Support	TBD/TBD	Wright-Patterson AFB OH	0.070	0.089	Jun 2010	0.000		0.000		0.000	0.000	0.159	0.000
Strategic Radar Replacement (SR2)	TBD/TBD	TBD TBD	0.000	1.000		2.000		0.000		2.000	5.000	8.000	0.000
1760 In the Bay Trainer/ Simulation Development	MIPR	OO-ALC UT	0.000	0.000		0.950	Jun 2011	0.000		0.950	0.000	0.950	0.000
Subtotal			0.480	11.339		23.935		0.000		23.935			0.000

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CONNECT 419 FLTS	PO	Edwards AFB CA	1.615	2.300		1.300		0.000		1.300	Continuing	Continuing	0.000
B-52 EHF 419 FLTS	PO	Edwards AFB CA	0.000	0.072	Jan 2010	0.267		0.000		0.267	Continuing	Continuing	0.000
CONNECT JTIC	MIPR	Fort Huachuca AZ	0.200	0.200		0.200		0.000		0.200	Continuing	Continuing	0.000
B-52 EHF JTIC	MIPR	Fort Huachuca AZ	0.000	0.041		0.050		0.000		0.050	Continuing	Continuing	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>				PROJECT 675039: <i>B-52 Modernization</i>					

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Advanced Pod Test 419 FLTS	PO	Edwards AFB CA	0.000	5.269	Feb 2010	0.000		0.000		0.000	0.000	5.269	0.000
Strategic Radar Replacement (SR2)	PO	Edwards AFB CA	0.000	0.000		1.000		0.000		1.000	20.000	21.000	0.000
Anti-Skid Replacement	TBD/TBD	Edwards, AFB CA	0.000	0.000		0.643	Apr 2011	0.000		0.643	0.000	0.643	0.000
Electromagnetic Pulse (EMP) Test	TM	Boeing, Wichita KS	0.958	0.000		0.000		0.000		0.000	0.000	0.958	0.000
1760 In the Bay Government Test	PO	Edwards AFB CA	0.000	0.000		6.200	Jun 2011	0.000		6.200	0.000	6.200	0.000
Subtotal			2.773	7.882		9.660		0.000		9.660			0.000

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CONNECT 651 AESS	Various/ Various	Wright-Patterson AFB OH	3.478	4.970		3.601		0.000		3.601	Continuing	Continuing	0.000
B-52 EHF 651 AESS	Various/ Various	Wright-Patterson AFB	0.000	0.503		3.933		0.000		3.933	Continuing	Continuing	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>					PROJECT 675039: <i>B-52 Modernization</i>				

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		OH											
CONNECT 327 ACSG	TBD/TBD	Tinker AFB OK	1.025	1.300		1.350		0.000		1.350	Continuing	Continuing	0.000
B-52 EHF 327 ACSG	TBD/TBD	Tinker AFB OK	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
ATP Management Support	TBD/TBD	Tinker AFB OK	0.125	0.050		0.000		0.000		0.000	0.000	0.175	0.000
Anti-Skid Replacement	TBD/TBD	Tinker AFB OK	0.000	0.000	Feb 2010	0.000		0.000		0.000	7.266	7.266	0.000
Strategic Radar Replacement (SR2)	TBD/TBD	Tinker AFB OK	0.000	4.425		4.605		0.000		4.605	15.593	24.623	0.000
1760 In the Bay Program Management Support	TBD/TBD	Tinker AFB OK	0.000	0.200	Aug 2010	0.172	Aug 2011	0.000		0.172	0.000	0.372	0.000
Subtotal			4.628	11.448		13.661		0.000		13.661			0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	39.835	102.330	146.096	0.000	146.096			0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0101113F: B-52 SQUADRONS

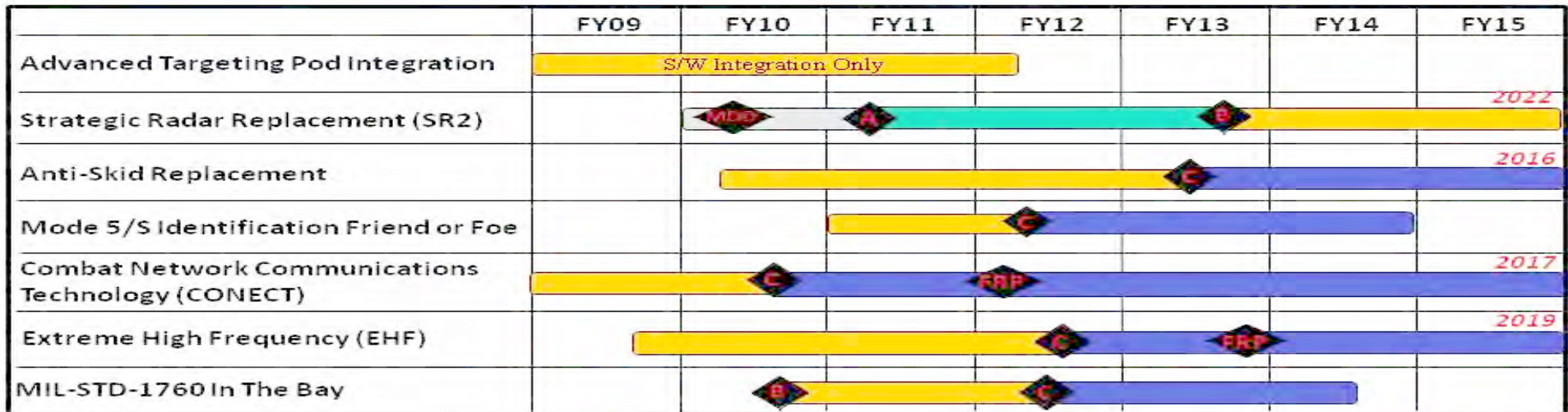
PROJECT

675039: B-52 Modernization



B-52 Modernization Schedule

U.S. AIR FORCE



As of: 7 Jan 2010

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101113F: <i>B-52 SQUADRONS</i>	PROJECT 675039: <i>B-52 Modernization</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
CONNECT EMD	1	2009	4	2011
CONNECT Ground/Flight Test Drop C	4	2009	2	2010
CONNECT LRIP Milestone C	3	2010	3	2010
B-52 EHF EMD Increment 1	3	2009	4	2010
B-52 EHF EMD Increment 2	3	2010	4	2011
Anti-Skid EMD	2	2010	4	2011
Strategic Radar Replacement EMD	2	2010	4	2011
Targeting Pod Test	1	2011	1	2011
Mode S/5 IFF EMD	1	2011	4	2011
1760 In the Bay EMD	2	2010	4	2011
1760 In the Bay Milestone C	4	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101122F: <i>AIR LAUNCHED CRUISE MISSILE</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.384	3.652	3.631	0.000	3.631	0.424	50.061	248.273	495.514	Continuing	Continuing
674797: <i>Flight Testing & Navigation Enhancement</i>	0.384	3.652	3.631	0.000	3.631	0.424	50.061	248.273	495.514	Continuing	Continuing

A. Mission Description and Budget Item Justification

The AGM-86B, Air Launched Cruise Missile (ALCM), is a subsonic, air-to-surface strategic nuclear missile, operational since 1982. Armed with a W-80 warhead, it is designed to evade air and ground-based defenses in order to strike targets at any location within any enemy's territory. The ALCM is designed for B-52H internal and external carriage.

A Service Life Extension Plan (SLEP) was developed to meet an AF Long Range Plan requirement to extend ALCM Service Life to FY30. The results of Service Life Extension Program (SLEP) studies identified system components that cannot be sustained beyond the initial missile service life. The current system is experiencing obsolescence of parts/components. Missile components and support equipment are becoming non-supportable. Service Life Extension of this critical weapon is essential to meet Air Combat Command (ACC) and United States Strategic Command (USSTRATCOM) commitments (also known as OPLAN 8010).

The W-80 LEP replaces warhead components to extend its service life. The National Nuclear Security Administration (NNSA) is responsible for most of the refurbishment costs associated with the W-80 warhead. The Air Force was responsible for funding ALCM W-80 integration. Integration included evaluation of interface control changes as part of the Initial Concept Design (ICD), missile testing, and logistics requirements necessary to support a First Production Unit (FPU) delivery in 2008. The W-80 LEP program has been archived.

Aging and surveillance program for ALCM critical components such as those in the safe arm and fuze subsystem, navigation/guidance system, and electrical/power distribution system. This is needed to identify aging trends prior to failures in fielded components that would result in fleet-wide reliability and supportability problems.

Analysis of alternatives (AOA) is in development for the future of long range strategic stand-off vehicles.

These programs are in Budget Activity 7, Operational System Development, due to efforts supporting a fielded, post Milestone III operational weapon system.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101122F: <i>AIR LAUNCHED CRUISE MISSILE</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.395	3.652	0.000	0.000	0.000
Current President's Budget	0.384	3.652	3.631	0.000	3.631
Total Adjustments	-0.011	0.000	3.631	0.000	3.631
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.011	0.000	3.631	0.000	3.631

Change Summary Explanation

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner."

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0101122F: <i>AIR LAUNCHED CRUISE MISSILE</i>				PROJECT 674797: <i>Flight Testing & Navigation Enhancement</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674797: <i>Flight Testing & Navigation Enhancement</i>	0.384	3.652	3.631	0.000	3.631	0.424	50.061	248.273	495.514	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The AGM-86B, Air Launched Cruise Missile (ALCM), is a subsonic, air-to-surface strategic nuclear missile, operational since 1982. Armed with a W-80 warhead, it is designed to evade air and ground-based defenses in order to strike targets at any location within any enemy's territory. The ALCM is designed for B-52H internal and external carriage.

A Service Life Extension Plan (SLEP) was developed to meet an AF Long Range Plan requirement to extend ALCM Service Life to FY30. The results of Service Life Extension Program (SLEP) studies identified system components that cannot be sustained beyond the initial missile service life. The current system is experiencing obsolescence of parts/components. Missile components and support equipment are becoming non-supportable. Service Life Extension of this critical weapon is essential to meet Air Combat Command (ACC) and United States Strategic Command (USSTRATCOM) commitments (also known as OPLAN 8010).

The W-80 LEP replaces warhead components to extend its service life. The National Nuclear Security Administration (NNSA) is responsible for most of the refurbishment costs associated with the W-80 warhead. The Air Force was responsible for funding ALCM W-80 integration. Integration included evaluation of interface control changes as part of the Initial Concept Design (ICD), missile testing, and logistics requirements necessary to support a First Production Unit (FPU) delivery in 2008. The W-80 LEP program has been archived.

Aging and surveillance program for ALCM critical components such as those in the safe arm and fuze subsystem, navigation/guidance system, and electrical/power distribution system. This is needed to identify aging trends prior to failures in fielded components that would result in fleet-wide reliability and supportability problems.

Analysis of alternatives (AOA) is in development for the future of long range strategic stand-off vehicles.

These programs are in Budget Activity 7, Operational System Development, due to efforts supporting a fielded, post Milestone III operational weapon system.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force							DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0101122F: <i>AIR LAUNCHED CRUISE MISSILE</i>			PROJECT 674797: <i>Flight Testing & Navigation Enhancement</i>					
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.											
MAJOR THRUST: Conduct Analysis of Alternatives (AOA) for future long range stand-off vehicle (LRSO). <i>FY 2009 Accomplishments:</i> IN FY2009: Not Applicable <i>FY 2010 Plans:</i> IN FY 2010: Initiate LRSO AoA study plan and begin LRSO AOA <i>FY 2011 Base Plans:</i> IN FY 2011: Complete LRSO AOA <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.						0.000	3.300	3.300	0.000	3.300	
Accomplishments/Planned Programs Subtotals						0.384	3.652	3.631	0.000	3.631	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0101122F: <i>MPAF, Missile Modifications (BA 03, P-15)</i>	10.120	0.000	10.795	0.000	10.795	10.013	6.267	0.000	0.000	0.000	0.000
• PE 0101122F (1): <i>MPAF, Missile Modifications Initial Spares (BA 04 P-16)</i>	0.194	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.270	10.875	0.266	0.000	0.266	1.298	5.202	4.570	4.829	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force										DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0101122F: <i>AIR LAUNCHED CRUISE MISSILE</i>				PROJECT 674797: <i>Flight Testing & Navigation Enhancement</i>				
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0101122F (2): <i>MPAF, Replenishment Spares (BA 04, P-16)</i>											
• PE 0101122F (3): <i>OPAF, Electronics and Telecommunications Equipment (BP83) (BA 03, P-18)</i>	1.495	1.535	1.584	0.000	1.584	1.611	1.638	1.662	1.690	0.000	0.000
D. Acquisition Strategy											
The ALCM/W-80 LEP integration is being performed by the prime contractor utilizing a Time and Materials (T&M) engineering assignment on an existing sustainment contract.											
The ALCM JTA-8 Replacement Support will be performed utilizing a Firm Fixed Price (FFP) contract.											
The ALCM Aging and Surveillance Program will be developed and matured by the prime contractor utilizing a Time and Materials (T&M) engineering assignment on an existing contract.											
Analysis of Alternatives (AOA) is in development for the future of long range strategic stand-off vehicles.											
E. Performance Metrics											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101122F: <i>AIR LAUNCHED CRUISE MISSILE</i>	PROJECT 674797: <i>Flight Testing & Navigation Enhancement</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
W80 LEP Support	TM	Boeing Seattle, WA	0.000	0.000		0.000		0.000		0.000	0.000	0.000	Continuing
JTA-1 Replacement Support	C/FFP	Boeing Seattle, WA	0.010	0.005	Feb 2010	0.070	Feb 2011	0.000		0.070	0.000	0.085	0.000
Subtotal			0.010	0.005		0.070		0.000		0.070	0.000	0.085	

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
W80 Support/PSM	TM	Boeing Seattle, WA	0.000	0.000		0.000		0.000		0.000	0.000	0.000	Continuing
ALCM Aging and Surveillance Program	TM	ESpectrum San Antonio, TX	0.374	0.347	Jun 2010	0.261	Jun 2011	0.000		0.261	0.000	0.982	0.000
Subtotal			0.374	0.347		0.261		0.000		0.261	0.000	0.982	

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101122F: <i>AIR LAUNCHED CRUISE MISSILE</i>	PROJECT 674797: <i>Flight Testing & Navigation Enhancement</i>
--	---	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
49th Test Wing (W-80 LEP)	MIPR	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	Continuing
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Cruise Missile AoA	MIPR	TBD TBD	0.000	3.300	Jan 2010	3.300	Jan 2011	0.000		3.300	0.000	6.600	0.000
Subtotal			0.000	3.300		3.300		0.000		3.300	0.000	6.600	0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	0.384	3.652		3.631		0.000		3.631	0.000	7.667	

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

R-1 Line Item #118

Page 8 of 10

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

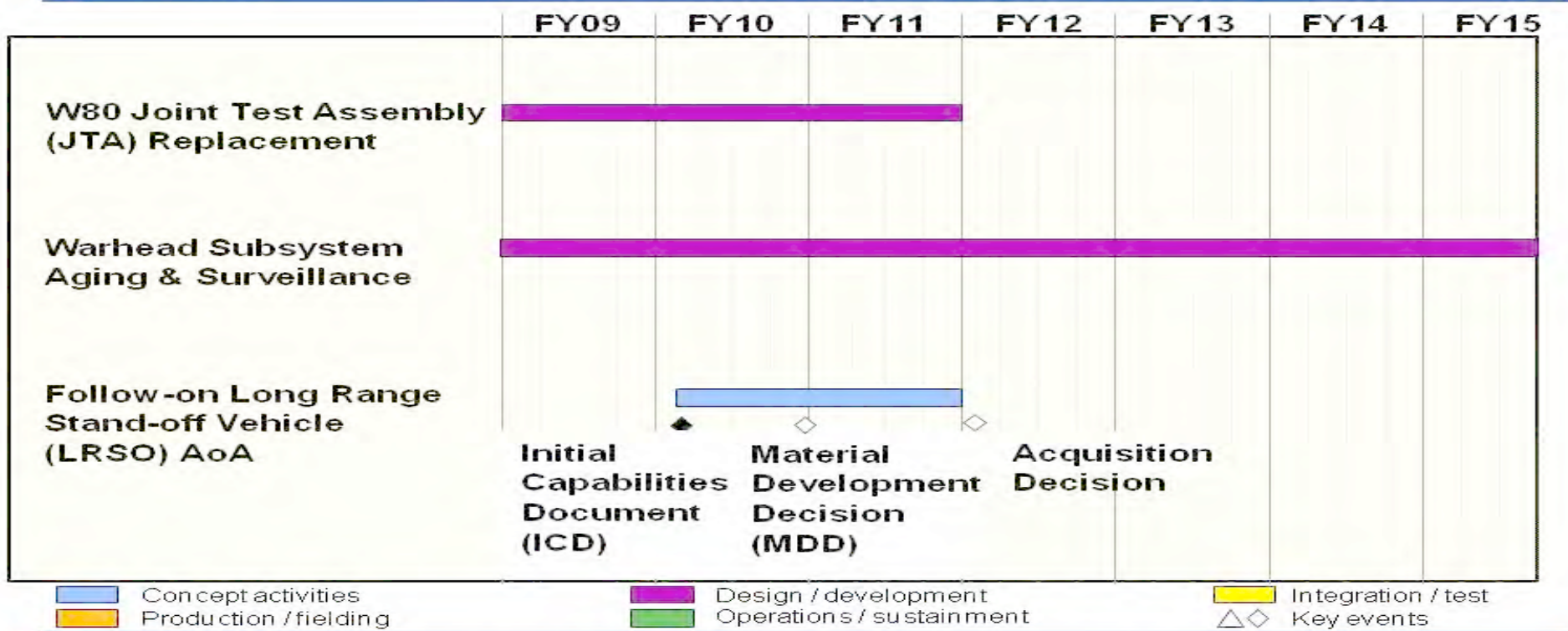
PE 0101122F: *AIR LAUNCHED CRUISE MISSILE*

PROJECT

674797: *Flight Testing & Navigation Enhancement*



PE 0101122F - ALCM



Integrity - Service - Excellence

UNCLASSIFIED

R-1 Line Item #118

Page 9 of 10

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0101122F: *AIR LAUNCHED CRUISE MISSILE*

PROJECT

674797: *Flight Testing & Navigation Enhancement*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
ALCM JTA-8 Support	1	2009	4	2011
LRSO AOA	2	2010	4	2011
ALCM Aging & Surveillance Program Development	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101126F: <i>B-1B SQUADRONS</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	143.360	33.234	0.000	33.234	6.273	3.851	0.089	0.084	Continuing	Continuing
675344: <i>B-1B Modernization</i>	0.000	143.360	33.234	0.000	33.234	6.273	3.851	0.089	0.084	0.000	0.000

Note

FY10, B-1B development efforts are transferring from PE 0604226F, Budget Program Activity Code (BPAC) 654596 to B-1B Squadrons, PE 0101126F, BPAC 675344. This transfers funds / efforts from Budget Activity (BA) 5 Demonstration / Validation to BA 7 Operations Systems Development.

A. Mission Description and Budget Item Justification

FY10 \$34.940M in Congressional Reductions was erroneously applied against this program. This reduction will be spread across all appropriate RDT&E Program Elements on the DD 1414, and the B1-B program amount will be \$178.278M.

This program provides RDT&E AF funding for the B-1B Modernization program. The Modernization program addresses potential aircraft grounding issues and provides new and improved capabilities to the B-1B weapon system that require significant hardware and software development and testing. In addition, the Modernization program addresses reliability and diminishing manufacturing sources (DMS) deficiencies to prevent future grounding of aircraft.

B-1B grounding items are addressed in the following efforts: Central Integrated Test System (CITS) upgrade, Radar Reliability and Maintainability Improvement Program (RMIP), Vertical Situational Display Upgrade (VSDU), and Inertial Navigation System (INS) upgrade.

B-1B improvement efforts include, but are not limited to, the development of the Fully Integrated Data Link (FIDL), ALQ-161A Preprocessor Avionics Control Unit (PACU) software re-host/development, Active Electronically Scanned Array (AESA) Radar study, and integration of the Mode S/Mode 5 Identification Friend/Foe (IFF) Upgrade.

FIDL integrates Link-16 and Beyond Line of Sight (BLOS) data links along with upgraded displays for improved connectivity to command and control authorities and for enhancements to targeting and weapons management. Upgrades to the B-1B training systems are included in the Modernization program to keep the training systems current with the aircraft configuration. In addition, program funds cover engineering/planning studies, related engineering efforts, and initiatives for future weapon system enhancements, including efforts to improve weapon system operational capabilities, safety, supportability, maintainability, reliability, and total ownership cost.

UNCLASSIFIED

R-1 Line Item #119

Page 1 of 13

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101126F: <i>B-1B SQUADRONS</i>
--	--

All B-1B development programs support planned requirements for unique identification in their production phases. The B-1B Modernization upgrade program is included in Budget Activity (BA) 7, Operational System Development.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	148.025	0.000	0.000	0.000
Current President's Budget	0.000	143.360	33.234	0.000	33.234
Total Adjustments	0.000	-4.665	33.234	0.000	33.234
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	-4.665	33.234	0.000	33.234

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 675344: *B-1B Modernization*

Congressional Add: *Active Electronically Scanned Array (AESA) Study*

Congressional Add Subtotals for Project: 675344

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	0.000	2.000
	0.000	2.000
	0.000	2.000

Change Summary Explanation

FY10 \$34.940M in Congressional Reductions was erroneously applied against this program. This reduction will be spread across all appropriate RDT&E Program Elements on the DD 1414, and the B1-B program amount will be \$178.278M.

FY 2010: Program increased by \$29M to support continued development of Fully Integrated Data Link (FIDL) and Vertical Situational Display Upgrade (VSDU). Program received \$2M Congressional Mark for Active Electronically Scanned Array (AESA) radar study.

UNCLASSIFIED

R-1 Line Item #119

Page 2 of 13

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	PE 0101126F: <i>B-1B SQUADRONS</i>

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, an explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101126F: <i>B-1B SQUADRONS</i>	PROJECT 675344: <i>B-1B Modernization</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675344: <i>B-1B Modernization</i>	0.000	143.360	33.234	0.000	33.234	6.273	3.851	0.089	0.084	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

FY10 \$34.940M in Congressional Reductions was erroneously applied against this program. This reduction will be spread across all appropriate RDT&E Program Elements on the DD 1414, and the B1-B program amount will be \$178.278M.

This program provides RDT&E AF funding for the B-1B Modernization program. The Modernization program addresses potential aircraft grounding issues and provides new and improved capabilities to the B-1B weapon system that require significant hardware and software development and testing. In addition, the Modernization program addresses reliability and diminishing manufacturing sources (DMS) deficiencies to prevent future grounding of aircraft.

B-1B grounding items are addressed in the following efforts: Central Integrated Test System (CITS) upgrade, Radar Reliability and Maintainability Improvement Program (RMIP), Vertical Situational Display Upgrade (VSDU), and Inertial Navigation System (INS) upgrade.

B-1B improvement efforts include, but are not limited to, the development of the Fully Integrated Data Link (FIDL), ALQ-161A Preprocessor Avionics Control Unit (PACU) software re-host/development, Active Electronically Scanned Array (AESA) Radar study, and integration of the Mode S/Mode 5 Identification Friend/Foe (IFF) Upgrade.

FIDL integrates Link-16 and Beyond Line of Sight (BLOS) data links along with upgraded displays for improved connectivity to command and control authorities and for enhancements to targeting and weapons management. Upgrades to the B-1B training systems are included in the Modernization program to keep the training systems current with the aircraft configuration. In addition, program funds cover engineering/planning studies, related engineering efforts, and initiatives for future weapon system enhancements, including efforts to improve weapon system operational capabilities, safety, supportability, maintainability, reliability, and total ownership cost.

All B-1B development programs support planned requirements for unique identification in their production phases. The B-1B Modernization upgrade program is included in Budget Activity (BA) 7, Operational System Development.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0101126F: <i>B-1B SQUADRONS</i>		PROJECT 675344: <i>B-1B Modernization</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
S Mode 5 and related support. Simulator/Trainer development/support will continue. General development related support for the flight test effort will continue. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.								
MAJOR THRUST: Mode S/Mode 5 New Start <i>FY 2009 Accomplishments:</i> In FY 2009: Not Applicable. <i>FY 2010 Plans:</i> In FY 2010: Not Applicable. <i>FY 2011 Base Plans:</i> In FY 2011: Initial development activities associated with integration of Mode S/Mode 5 capabilities into existing B-1 Identification Friend or Foe (IFF) subsystem begins. This is an FY 2011 New Start. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.				0.000	0.000	0.200	0.000	0.200
Accomplishments/Planned Programs Subtotals				0.000	176.278	33.234	0.000	33.234
				FY 2009	FY 2010			
Congressional Add: Active Electronically Scanned Array (AESA) Study <i>FY 2009 Accomplishments:</i> In FY 2009: Not Applicable.				0.000	2.000			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101126F: <i>B-1B SQUADRONS</i>	PROJECT 675344: <i>B-1B Modernization</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
<i>FY 2010 Plans:</i> In FY 2010: Execute a trade study to establish physical & functional interface requirements for potential B-1B Active Electronically Scanned Array (AESA) integration.		
Congressional Adds Subtotals	0.000	2.000

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (160): <i>PE0101126F, Aircraft Procurement BP11, Mods</i>	0.000	98.416	199.694	0.000	199.694	192.394	177.910	124.527	93.891	0.000	0.000
• PE 0101126F: <i>B-1B, Aircraft Procurement BP16, Initial Spares</i>	0.000	9.883	12.533	0.000	12.533	10.299	8.784	6.452	6.477	0.000	0.000
• PE 0101126F (1): <i>B-1B, Aircraft Procurement BP12, Common Support Equipment</i>	0.000	2.663	10.272	0.000	10.272	13.592	9.682	4.041	2.865	0.000	0.000
• PE 0101126F (2): <i>B-1B, Aircraft Procurement BP13, Post Production Charges</i>	0.000	3.916	6.791	0.000	6.791	5.914	1.074	0.470	0.000	0.000	0.000

D. Acquisition Strategy

(U) Key elements of the overall B-1B Modernization acquisition strategy include: use of a sole source contract with a prime/integrating contractor (Boeing); installed performance responsibility; use of cost plus incentive fee (CPIF) development contracts; and combining developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime and differences in fielded configurations.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0101126F: <i>B-1B SQUADRONS</i>				PROJECT 675344: <i>B-1B Modernization</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Central Integrated Test System (CITS) Upgrade	SS/CPIF	Boeing Long Beach, CA	0.000	3.976	Oct 2009	0.000		0.000		0.000	0.000	3.976	0.000
Vertical Situation Display Upgrade (VSDU)	SS/CPFF	Boeing Long Beach, CA	0.000	42.321	Oct 2009	5.000	Oct 2010	0.000		5.000	4.000	51.321	0.000
Radar Reliability and Maintainability Improvement Program (RMIP)	SS/CPIF	Boeing Long Beach, CA	0.000	38.736	Oct 2009	1.620	Nov 2010	0.000		1.620	0.000	40.356	0.000
Inertial Navigation System (INS) upgrade	SS/CPIF	Boeing Long Beach, CA	0.000	41.177	Oct 2009	4.592	Oct 2010	0.000		4.592	0.000	45.769	0.000
Fully Integrated Data Link (FIDL)	SS/CPIF	Boeing Long Beach, CA	0.000	38.113	Oct 2009	18.125	Oct 2010	0.000		18.125	0.000	56.238	0.000
ALQ-161A Preprocessor Avionics Control Unit (PACU)	SS/CPFF	561st Robins AFB GA	0.000	7.500	Oct 2009	0.500	Oct 2010	0.000		0.500	0.000	8.000	0.000
Active Electronically Scanned Array (AESA) Radar	TBD/TBD	TBD TBD	0.000	2.000	Mar 2010	0.000		0.000		0.000	0.000	2.000	0.000
Mode S/Mode 5	TBD/TBD	TBD TBD	0.000	0.000		0.200	Oct 2010	0.000		0.200	3.880	4.080	0.000
Subtotal			0.000	173.823		30.037		0.000		30.037	7.880	211.740	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101126F: <i>B-1B SQUADRONS</i>	PROJECT 675344: <i>B-1B Modernization</i>
--	--	---

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
A&AS	TBD/TBD	TBD TBD	0.000	3.588		2.526		0.000		2.526	0.600	6.714	0.000
Studies & Analyses / Modeling & Simulation	TBD/TBD	TBD TBD	0.000	0.496		0.300		0.000		0.300	1.512	2.308	0.000
Subtotal			0.000	4.084		2.826		0.000		2.826	2.112	9.022	0.000

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AFFTC	Various/ Various	Various Various	0.000	0.371		0.371		0.000		0.371	0.376	1.118	0.000
Subtotal			0.000	0.371		0.371		0.000		0.371	0.376	1.118	0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		0.000	178.278	33.234	0.000	33.234	10.368	221.880	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101126F: <i>B-1B SQUADRONS</i>	PROJECT 675344: <i>B-1B Modernization</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

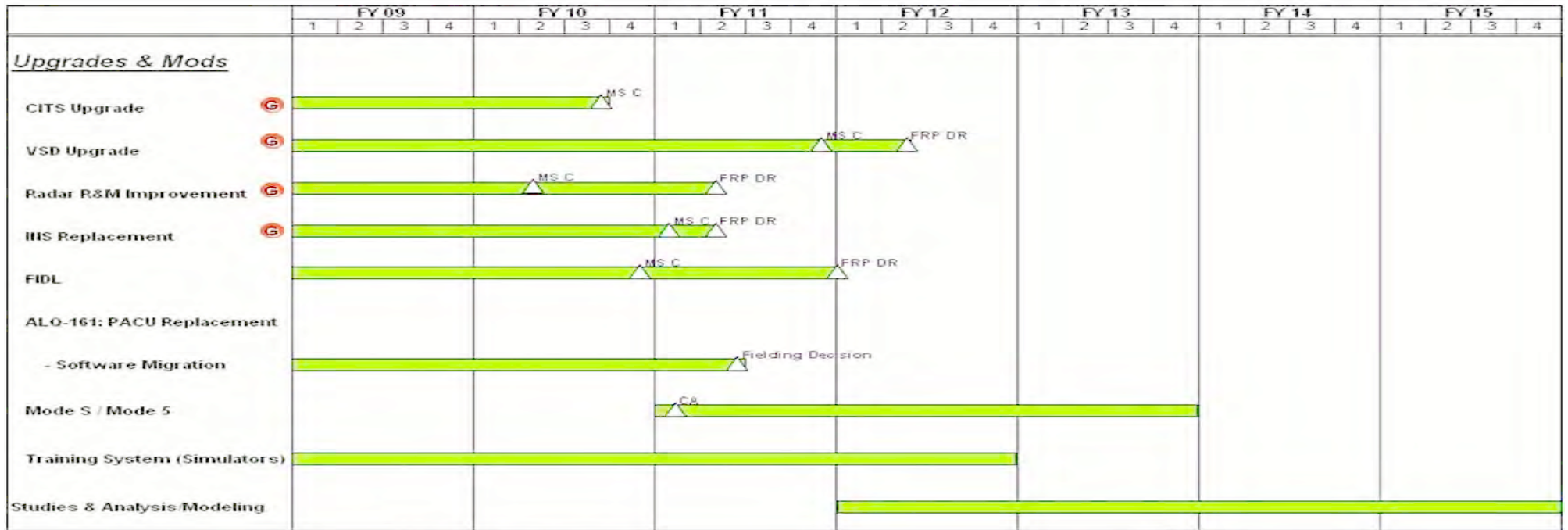
R-1 ITEM NOMENCLATURE

PE 0101126F: *B-1B SQUADRONS*

PROJECT

675344: *B-1B Modernization*

Development Activity



CA - Contract Award	▲ Forecast Activity
MS - Milestone	▲ Completed
PDR - Preliminary Design Review	[Green Bar] RDT&E Funding
CDR - Critical Design Review	Ⓞ Grounding Item
FRP DR- Full Rate Production Decision Review	
HW - Hardware	
LCTP - Laptop Controlled Targeting Pod	
RAA - Required Assets Available	
UNR - Urgent Need Request	

17 Dec 09

UNCLASSIFIED

R-1 Line Item #119

Page 11 of 13

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101126F: <i>B-1B SQUADRONS</i>	PROJECT 675344: <i>B-1B Modernization</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Central Integrated Test System (CITS) Upgrade - MS C/program started FY2005	3	2010	3	2010
Central Integrated Test System (CITS) Upgrade - program completion	3	2010	3	2010
Vertical Situation Display Upgrade (VSDU) - MS C/program started FY2006	4	2011	4	2011
Vertical Situation Display Upgrade (VSDU) - program completion FY2012	1	2011	4	2011
Radar Reliability & Maintainability Improvement Program (RMIP) - MS C/program started FY2006	2	2010	2	2010
Radar Reliability & Maintainability Improvement Program (RMIP) - FRP DR	2	2011	2	2011
Radar Reliability & Maintainability Improvement Program (RMIP) - program completion	2	2011	2	2011
Inertial Navigation System (INS) - MS C	1	2011	1	2011
Inertial Navigation System (INS) - FRP DR	2	2011	2	2011
Inertial Navigation System (INS) - program completion	2	2011	2	2011
Fully Integrated Data Link (FIDL) - MS C/program started FY2004	4	2010	4	2010
Fully Integrated Data Link (FIDL) - FRP DR	4	2010	4	2010
Fully Integrated Data Link (FIDL) - program completion	4	2011	4	2011
ALQ-161A Preprocessor Avionics Control Unit (PACU) Software Migration - Fielding Decision/program started FY2004	2	2011	2	2011
ALQ-161A Preprocessor Avionics Control Unit (PACU) Software Migration -	2	2011	2	2011
Mode S/Mode 5 Identification, Friend or Foe (IFF) Upgrade - Contract Award/program started FY2011	1	2011	1	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101126F: <i>B-1B SQUADRONS</i>	PROJECT 675344: <i>B-1B Modernization</i>
--	--	---

Event	Start		End	
	Quarter	Year	Quarter	Year
Mode S/Mode 5 Identification, Friend or Foe (IFF) Upgrade - program completion FY2013	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101127F: <i>B-2 SQUADRONS</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	407.189	260.466	0.000	260.466	295.333	399.052	390.798	318.270	Continuing	Continuing
675345: <i>B-2 Modernization</i>	0.000	407.189	260.466	0.000	260.466	295.333	399.052	390.798	318.270	Continuing	Continuing

A. Mission Description and Budget Item Justification

The B-2A Spirit is the world's most advanced long-range strike asset. The unique combination of range, precision, payload, and ability to operate in anti-access environments allow the B-2 to identify, locate, target, and destroy the highest value enemy targets. The B-2 can accomplish its mission regardless of location, return to base safely, and permit freedom of movement for follow-on forces, including other long range strike platforms. The array of planned RDT&E projects are necessary to both preserve this strategic advantage as well as increase the flexibility, lethality, and survivability of this national asset tasked across a broad spectrum, from tactical to national objectives.

Avionics upgrades include, but are not limited to, Radar Modernization Program (RMP), Link-16 Center Instrument Display (CID)/In-Flight Replanner (IFR), Ultra High Frequency (UHF) Satellite Communication (SATCOM), Mode 5/S Identification Friend or Foe (IFF), Adaptable Communications Suite (ACS), Extremely High Frequency (EHF) SATCOM and Computers, Defensive Management System (DMS), EMP Hardening Testing, and advanced, low detection data links upgrades. RMP changes the operating frequency of the radar to enable the B-2 to operate as the primary user worldwide in the future. Link-16 CID/IFR upgrade allows the B-2 access to theater tactical data links, improving on-board situational awareness while greatly enhancing the ability of the theater commanders to coordinate the B-2 with other assets. UHF SATCOM provides beyond line of sight secure communications to aircrews enabling verbal and data updates to missions. ACS provides UHF SATCOM data for beyond line of sight Link-16 situational awareness and airborne mission transfer. EHF SATCOM and Computers provides a secure, survivable communication and Net Ready infrastructure systems upgrade, preserving the critical ability to guarantee communication in a nuclear environment, as well as a basis for surveillance and reconnaissance. EHF SATCOM and Computers will provide a dramatic increase in the B-2 processing capability, paving the way for greater bandwidth and integration into the Global Information Grid (GIG), and Airborne Network Attack in an anti-access environment. Upgrades include extremely high frequency components and the computer infrastructure upgrades such as, but not limited to, flight management processors and onboard network components necessary to host new capability on the aircraft. Mode 5 provides enhanced combat identification of friend or foe functions for military Air Traffic Management; Mode S provides enhanced surveillance functions with commercial Air Traffic Management to allow operations in controlled air space. The DMS upgrade includes improvements and counters obsolescence of the defensive management processors and threat emitter system. The display processing improvement included in the DMS upgrade will be in harmony with the B-2 display architecture, which is common to all future upgrades requiring a cockpit display. Defensive Management System upgrades and improved displays are essential to ensuring platform survivability and reducing non-mission capable events. These system upgrades will transition from the current analog design to modern digital technology and provide necessary infrastructure which is prerequisite to enhanced threat location, identification, and warning capability for improved survivability, and enabling increased flexibility in strike, moving target kill, and non-traditional surveillance/reconnaissance (NTSR), positioning the B-2 for increased combat lethality, becoming the world's premier anti-access moving target kill platform. Electro-magnetic pulse (EMP) hardening

UNCLASSIFIED

R-1 Line Item #120

Page 1 of 14

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101127F: <i>B-2 SQUADRONS</i>	
<p>requirements will test individual components and the entire B-2 fleet at higher EMP levels for NC2 Survivability. Integrated Strike Warfare (ISW) Airborne Network project will model and simulate combat effects and performance constraints in an environment that can demonstrate, integrate, generate and validate four generic wave form models which will be used on the B-2 platform. Additionally, this project will establish a viable end-to-end distributed modeling and simulation network. Advanced Tactical Data Link (TDL) will identify B-2 CONOPS requirements and integration issues which will permit B-2 to communicate with other stealth platforms in an anti-access environment to enhance situational awareness and to permit time-critical targeting and engagement.</p> <p>Armament upgrades include, but are not limited to, integration of new and/or advanced weapons on the B-2 to destroy a wider array of target sets, to include moving target sets and Hardened, Deeply Buried Targets (HDBT), as well as destroy more targets per sortie. Integration of the 30K lb class Massive Ordnance Penetrator (MOP) will provide the nation with the ability to hold additional HDBT targets at risk that are currently unachievable with 5K lb class penetrator munitions. The B-2 is the only anti-access penetrating platform capable of carrying the MOP and meets Urgent Operational Needs (UON) requirements. The MOP project will design, develop, integrate, and test hardware, software, and support equipment required for carriage, jettison, and release of both weapons from the B-2. The initial MOP Quick Reaction Capability (QRC) effort will be expanded to include a fully developed Launch Acceptability Region (LAR), single Smart Bomb Rack Controller (SBRC) per bay weapon control and monitor, dual fuze control, and mixed carriage capability with Smart Bomb Rack Assemblies (SBRA). The Moving Target Kill (MTK) effort will leverage a high precision munition such as the Small Diameter Bomb II (SDB II) as the mobile target kill munition forming the foundation to exploit the modularity and improved precision algorithms of Universal Armament Interface as well as a display infrastructure that can support the integration of this future weapon. Planned upgrades also include integration of upgrades to currently fielded or inventory weapons and weapons development, such as but not limited to, GBU-28 E/B Selective Availability Anti-Spoofing Module (SAASM) with impact angle control and GBU-28 D/B SAASM with impact angle control, Hard Target Void Sensing Fuse (HTVSF), extended range Joint Air-to-Surface Standoff Missile (JASSM-ER), and JDAM-5000. Finally, basic armament improvements include, but are not limited to, stores management hardware and software modernization and improvements to enable a simultaneous configuration of the Rotary Launcher Assemblies (RLA) and the Smart Bomb Rack Assemblies (SBRA), and integration of new and improved weapon capabilities thus affording maximum strike flexibility. The B-2 Weapons System Tester and its associated Test Program Sets (TPS) will be continually upgraded for increased reliability and performance to support current and new B-2 weapon suspension and release systems.</p> <p>Structures improvements include, but are not limited to, Aft Deck upgrade which addresses an interim and long term solution to persistent cracking of aft deck surfaces while preserving the key stealth characteristics that are vital to the survivability of the B-2; windshield redesign provides improved components and windshield manufacturing processes to remedy windshield cracking and electrical conductivity limitations; Proximity Sensor Logic Unit (PSLU) replacement counters obsolescence issues with electronic components, improving safety of maintainers working around various aircraft bay doors.</p> <p>Engine improvements include, but are not limited to, the F-118 engine service life extension program. Stage 1 and 3 engine fan blade improvements will reduce engine changes, increasing aircraft availability. Engine upgrades are necessary to maintain commonality with the F110 engine core.</p> <p>Low Observable (LO) programs include, but are not limited to, improvements to door edge treatments, tile protection system, Magnetic Radar Absorbing Material (MAGRAM) picture framing and other LO materials development, hot structures, tailpipe material improvements, nozzle bay doors, windshield low observable treatments, advanced topcoat system, radar frequency diagnostics and other LO diagnostic tools development such as improvements of the Signature Diagnostic</p>		

UNCLASSIFIED

R-1 Line Item #120

Page 2 of 14

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101127F: <i>B-2 SQUADRONS</i>
--	---

System database, Low Observable Combat Readiness Model, and other low observable information systems. These upgrades decrease maintenance man-hours and increase aircraft availability while improving/maintaining LO signature of the B-2 fleet.

Baseline support maintains the B-2 unique flight test aircraft and as well as obtains, modifies, and operates a flying test bed and developmental hardware/software and test equipment to support developmental systems integration and flight test, reducing the need for additional operational aircraft and accelerates deployment of advanced operational capabilities to the warfighter. Baseline support also ensures the B-2 training systems keep pace with aircraft system updates and counters obsolescence issues; ensures the Mission Planning system keeps pace with aircraft modifications and mission planning core system updates; provides for other B-2 unique government costs, and includes acquisition planning activities for future capabilities such as, but not limited to, Stores Management Processor/Infrastructure upgrades, Advanced Tactical Datalink capabilities, Port Transducer upgrades, mixed weapon load-outs, Universal Armament Interface (UAI), Global Positioning System (GPS) M-Code receivers upgrades, Joint Precision Approach and Landing System (JPALS) upgrades, Radar Processor Modernization (RPM), Automatic Dependent Surveillance - Broadcast (ADS-B), and Extended Mission Oil Tank.

This program is included in budget activity code 07, Operational System Development.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	415.414	0.000	0.000	0.000
Current President's Budget	0.000	407.189	260.466	0.000	260.466
Total Adjustments	0.000	-8.225	260.466	0.000	260.466
• Congressional General Reductions		-30.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		21.775			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	260.466	0.000	260.466

Change Summary Explanation

FY09 and prior fiscal years are funded from PE 0604240F.

FY10 changes reflect the completion of development for the B-2 radar modernization program

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

R-1 Line Item #120

Page 3 of 14

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101127F: <i>B-2 SQUADRONS</i>	PROJECT 675345: <i>B-2 Modernization</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
<i>675345: B-2 Modernization</i>	0.000	407.189	260.466	0.000	260.466	295.333	399.052	390.798	318.270	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The B-2A Spirit is the world's most advanced long-range strike asset. The unique combination of range, precision, payload, and ability to operate in anti-access environments allow the B-2 to identify, locate, target, and destroy the highest value enemy targets. The B-2 can accomplish its mission regardless of location, return to base safely, and permit freedom of movement for follow-on forces, including other long range strike platforms. The array of planned RDT&E projects are necessary to both preserve this strategic advantage as well as increase the flexibility, lethality, and survivability of this national asset tasked across a broad spectrum, from tactical to national objectives.

Avionics upgrades include, but are not limited to, Radar Modernization Program (RMP), Link-16 Center Instrument Display (CID)/In-Flight Replanner (IFR), Ultra High Frequency (UHF) Satellite Communication (SATCOM), Mode 5/S Identification Friend or Foe (IFF), Adaptable Communications Suite (ACS), Extremely High Frequency (EHF) SATCOM and Computers, Defensive Management System (DMS), EMP Hardening Testing, and advanced, low detection data links upgrades. RMP changes the operating frequency of the radar to enable the B-2 to operate as the primary user worldwide in the future. Link-16 CID/IFR upgrade allows the B-2 access to theater tactical data links, improving on-board situational awareness while greatly enhancing the ability of the theater commanders to coordinate the B-2 with other assets. UHF SATCOM provides beyond line of sight secure communications to aircrews enabling verbal and data updates to missions. ACS provides UHF SATCOM data for beyond line of sight Link-16 situational awareness and airborne mission transfer. EHF SATCOM and Computers provides a secure, survivable communication and Net Ready infrastructure systems upgrade, preserving the critical ability to guarantee communication in a nuclear environment, as well as a basis for surveillance and reconnaissance. EHF SATCOM and Computers will provide a dramatic increase in the B-2 processing capability, paving the way for greater bandwidth and integration into the Global Information Grid (GIG), and Airborne Network Attack in an anti-access environment. Upgrades include extremely high frequency components and the computer infrastructure upgrades such as, but not limited to, flight management processors and onboard network components necessary to host new capability on the aircraft. Mode 5 provides enhanced combat identification of friend or foe functions for military Air Traffic Management; Mode S provides enhanced surveillance functions with commercial Air Traffic Management to allow operations in controlled air space. The DMS upgrade includes improvements and counters obsolescence of the defensive management processors and threat emitter system. The display processing improvement included in the DMS upgrade will be in harmony with the B-2 display architecture, which is common to all future upgrades requiring a cockpit display. Defensive Management System upgrades and improved displays are essential to ensuring platform survivability and reducing non-mission capable events. These system upgrades will transition from the current analog design to modern digital technology and provide necessary infrastructure which is prerequisite to enhanced threat location, identification, and warning capability for improved survivability, and enabling increased flexibility in strike, moving target kill, and non-traditional surveillance/reconnaissance (NTSR), positioning the B-2 for increased combat lethality, becoming the world's premier anti-access moving target kill platform. Electro-magnetic pulse (EMP) hardening

UNCLASSIFIED

R-1 Line Item #120

Page 4 of 14

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101127F: <i>B-2 SQUADRONS</i>	PROJECT 675345: <i>B-2 Modernization</i>
<p>requirements will test individual components and the entire B-2 fleet at higher EMP levels for NC2 Survivability. Integrated Strike Warfare (ISW) Airborne Network project will model and simulate combat effects and performance constraints in an environment that can demonstrate, integrate, generate and validate four generic wave form models which will be used on the B-2 platform. Additionally, this project will establish a viable end-to-end distributed modeling and simulation network. Advanced Tactical Data Link (TDL) will identify B-2 CONOPS requirements and integration issues which will permit B-2 to communicate with other stealth platforms in an anti-access environment to enhance situational awareness and to permit time-critical targeting and engagement.</p> <p>Armament upgrades include, but are not limited to, integration of new and/or advanced weapons on the B-2 to destroy a wider array of target sets, to include moving target sets and Hardened, Deeply Buried Targets (HDBT), as well as destroy more targets per sortie. Integration of the 30K lb class Massive Ordnance Penetrator (MOP) will provide the nation with the ability to hold additional HDBT targets at risk that are currently unachievable with 5K lb class penetrator munitions. The B-2 is the only anti-access penetrating platform capable of carrying the MOP and meets Urgent Operational Needs (UON) requirements. The MOP project will design, develop, integrate, and test hardware, software, and support equipment required for carriage, jettison, and release of both weapons from the B-2. The initial MOP Quick Reaction Capability (QRC) effort will be expanded to include a fully developed Launch Acceptability Region (LAR), single Smart Bomb Rack Controller (SBRC) per bay weapon control and monitor, dual fuze control, and mixed carriage capability with Smart Bomb Rack Assemblies (SBRA). The Moving Target Kill (MTK) effort will leverage a high precision munition such as the Small Diameter Bomb II (SDB II) as the mobile target kill munition forming the foundation to exploit the modularity and improved precision algorithms of Universal Armament Interface as well as a display infrastructure that can support the integration of this future weapon. Planned upgrades also include integration of upgrades to currently fielded or inventory weapons and weapons development, such as but not limited to, GBU-28 E/B Selective Availability Anti-Spoofing Module (SAASM) with impact angle control and GBU-28 D/B SAASM with impact angle control, Hard Target Void Sensing Fuse (HTVSF), extended range Joint Air-to-Surface Standoff Missile (JASSM-ER), and JDAM-5000. Finally, basic armament improvements include, but are not limited to, stores management hardware and software modernization and improvements to enable a simultaneous configuration of the Rotary Launcher Assemblies (RLA) and the Smart Bomb Rack Assemblies (SBRA), and integration of new and improved weapon capabilities thus affording maximum strike flexibility. The B-2 Weapons System Tester and its associated Test Program Sets (TPS) will be continually upgraded for increased reliability and performance to support current and new B-2 weapon suspension and release systems.</p> <p>Structures improvements include, but are not limited to, Aft Deck upgrade which addresses an interim and long term solution to persistent cracking of aft deck surfaces while preserving the key stealth characteristics that are vital to the survivability of the B-2; windshield redesign provides improved components and windshield manufacturing processes to remedy windshield cracking and electrical conductivity limitations; Proximity Sensor Logic Unit (PSLU) replacement counters obsolescence issues with electronic components, improving safety of maintainers working around various aircraft bay doors.</p> <p>Engine improvements include, but are not limited to, the F-118 engine service life extension program. Stage 1 and 3 engine fan blade improvements will reduce engine changes, increasing aircraft availability. Engine upgrades are necessary to maintain commonality with the F110 engine core.</p> <p>Low Observable (LO) programs include, but are not limited to, improvements to door edge treatments, tile protection system, Magnetic Radar Absorbing Material (MAGRAM) picture framing and other LO materials development, hot structures, tailpipe material improvements, nozzle bay doors, windshield low observable treatments, advanced topcoat system, radar frequency diagnostics and other LO diagnostic tools development such as improvements of the Signature Diagnostic</p>		

UNCLASSIFIED

R-1 Line Item #120

Page 5 of 14

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101127F: <i>B-2 SQUADRONS</i>	PROJECT 675345: <i>B-2 Modernization</i>
--	---	--

System database, Low Observable Combat Readiness Model, and other low observable information systems. These upgrades decrease maintenance man-hours and increase aircraft availability while improving/maintaining LO signature of the B-2 fleet.

Baseline support maintains the B-2 unique flight test aircraft and as well as obtains, modifies, and operates a flying test bed and developmental hardware/software and test equipment to support developmental systems integration and flight test, reducing the need for additional operational aircraft and accelerates deployment of advanced operational capabilities to the warfighter. Baseline support also ensures the B-2 training systems keep pace with aircraft system updates and counters obsolescence issues; ensures the Mission Planning system keeps pace with aircraft modifications and mission planning core system updates; provides for other B-2 unique government costs, and includes acquisition planning activities for future capabilities such as, but not limited to, Stores Management Processor/Infrastructure upgrades, Advanced Tactical Datalink capabilities, Port Transducer upgrades, mixed weapon load-outs, Universal Armament Interface (UAI), Global Positioning System (GPS) M-Code receivers upgrades, Joint Precision Approach and Landing System (JPALS) upgrades, Radar Processor Modernization (RPM), Automatic Dependent Surveillance - Broadcast (ADS-B), and Extended Mission Oil Tank.

This program is included in budget activity code 07, Operational System Development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: B-2 baseline support <i>FY 2009 Accomplishments:</i> In FY2009: Not applicable. Work was performed under PE 0604240F <i>FY 2010 Plans:</i> In FY2010: Continue B-2 baseline support to include developmental flight test aircraft modification and base of operations; Mission Planning, Trainer support, long range planning, studies, program integration activities, acquisition planning, and other government costs. <i>FY 2011 Base Plans:</i> In FY2011: Continue B-2 baseline support to include developmental flight test aircraft modification and base of operations; Mission Planning, Trainer support, long range planning, studies, program integration activities, acquisition planning, and other government costs.	0.000	23.165	14.560	0.000	14.560

UNCLASSIFIED

R-1 Line Item #120

Page 6 of 14

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101127F: <i>B-2 SQUADRONS</i>	PROJECT 675345: <i>B-2 Modernization</i>
--	---	--

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0101127F: <i>B-2 Squadrons, A/C Proc, AF, Modifications/BA05/B-2A</i>	0.000	240.968	57.415	0.000	57.415	98.593	137.629	226.394	145.791	0.000	0.000
• PE 0101127F (1): <i>B-2 Squadrons, A/C Proc, AF, Post Prod Support/BA07/B-2A/ICS (XX50)</i>	0.000	24.403	20.755	0.000	20.755	20.688	21.528	21.498	21.018	0.000	0.000
• PE 0101127F (2): <i>B-2 Squadrons, A/C Proc, AF, Post Prod Support/BA07/B-2A</i>	0.000	19.800	5.462	0.000	5.462	1.142	2.795	2.843	2.896	0.000	0.000
• PE 0101127F (3): <i>B-2 Squadrons, A/C Proc, AF, A/C Initial Spares/BA06/B-2A</i>	0.000	0.000	15.099	0.000	15.099	14.900	6.273	13.695	5.488	0.000	0.000
• PE 0101127F (4): <i>B-2 Squadrons, A/C Proc, AF, Depot Activation/BA07/B-2A</i>	0.000	19.153	166.067	0.000	166.067	12.068	10.593	4.961	2.123	0.000	0.000

D. Acquisition Strategy

Key elements of the overall acquisition strategy include: use of sole source contract with a prime/integrating contractor (Northrop Grumman); use of cost plus award fee/ incentive fee (CPAF/IF) development contracts; and the combination of developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime, and differences in fielded configurations.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101127F: <i>B-2 SQUADRONS</i>	PROJECT 675345: <i>B-2 Modernization</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Air Vehicle	Various/ Various	Various Various	0.000	378.837	Oct 2009	240.953	Oct 2010	0.000		240.953	Continuing	Continuing	0.000
Aircrew Training	Various/ Various	Various Various	0.000	3.170	Jan 2010	3.183	Jan 2011	0.000		3.183	Continuing	Continuing	0.000
Mission Planning	Various/ Various	Various Various	0.000	2.504	Jan 2010	2.017	Jan 2011	0.000		2.017	Continuing	Continuing	0.000
Engines	Various/ Various	Various Various	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			0.000	384.511		246.153		0.000		246.153			0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Other Government Costs	Various/ Various	Various Various	0.000	17.898	Oct 2009	8.560	Oct 2010	0.000		8.560	Continuing	Continuing	0.000
Subtotal			0.000	17.898		8.560		0.000		8.560			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0101127F: <i>B-2 SQUADRONS</i>				PROJECT 675345: <i>B-2 Modernization</i>					

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Test	Various/ Various	AFFTC Various	0.000	4.780	Oct 2009	5.753	Oct 2010	0.000		5.753	Continuing	Continuing	0.000
Subtotal			0.000	4.780		5.753		0.000		5.753			0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	0.000	407.189		260.466	0.000	260.466		

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0101127F: *B-2 SQUADRONS*

PROJECT

675345: *B-2 Modernization*

reflects EMB 09-02

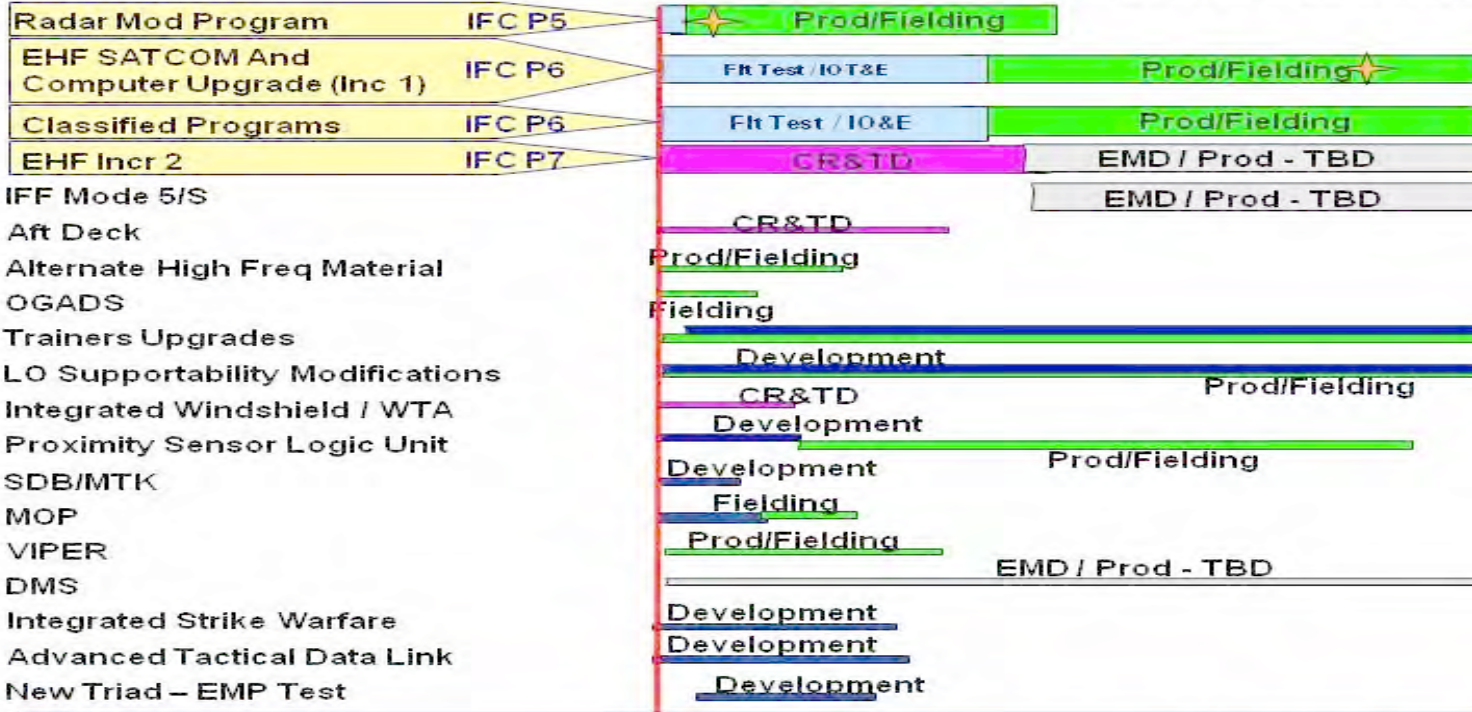


U.S. AIR FORCE

B-2 Detailed Schedule

AIRCRAFT MODS

FY10	FY11	FY12	FY13	FY14	FY15
------	------	------	------	------	------



★ Initial Operational Capability

FY10	FY11	FY12	FY13	FY14	FY15
------	------	------	------	------	------

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101127F: <i>B-2 SQUADRONS</i>	PROJECT 675345: <i>B-2 Modernization</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
EHF SATCOM and Computers Inc 1 First Flight	2	2010	2	2010
EHF SATCOM and Computers Inc 2 CAD Contract Award	1	2010	1	2010
EMP Testing Contract Award	3	2010	3	2010
Viper Contract Award	3	2010	3	2010
DMS TD Contract Award	3	2011	3	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	17.013	33.746	28.441	0.000	28.441	20.026	20.223	9.940	10.109	Continuing	Continuing
675059: <i>Strategic War Planning System (SWPS)</i>	10.614	10.429	18.904	0.000	18.904	10.434	10.481	0.000	0.000	0.000	0.000
675282: <i>Joint Navigation Warfare Center (JNWC)</i>	6.399	8.267	9.529	0.000	9.529	9.583	9.729	9.924	10.092	Continuing	Continuing
675368: <i>GSIN (Global Sensor Integrated Network)</i>	0.000	15.050	0.008	0.000	0.008	0.009	0.013	0.016	0.017	Continuing	Continuing

Note
In FY2010 Project 5368, Global Sensor Integrated Network (GSIN) transferred from PE 0105921F, Service Support to STRATCOM Space Activities, in order to better align effort and appropriation.

A. Mission Description and Budget Item Justification
The mission of USSTRATCOM is to establish and provide full-spectrum global strike, coordinated space and information operations capabilities to meet both deterrent and decisive national security objectives, and to provide operational space support, integrated missile defense, Global Command Control Communications and Computers Intelligence Surveillance and Reconnaissance (C4ISR), and specialized planning expertise to the joint warfighter. This mission has been defined by the 2002 Unified Command Plan (UCP) changes 1 and 2. To enable completion of these missions, USSTRATCOM is modernizing the Integrated Strategic Planning and Analysis Network (ISPAN) (formerly known as SWPS), developing information systems and techniques to counter and conduct Navigation Warfare (NAVWAR) and establishing a unified national architecture integrating disparate Missile Warning/Missile Defense (MW/MD) systems into a single Internet Protocol (IP)-based system known as the Global Sensor Integrated Network (GSIN) to provide redundant and unambiguous MW/MD data to national leadership.

When the ISPAN modernization is complete the system will support the warfighter in both deliberate and adaptive planning environments while allowing the National Command Authorities to employ the full spectrum of kinetic and non-kinetic weapons. The ISPAN system will continue to evolve as weapon systems are matured, new systems are developed, and the threat changes, particularly in the area of worldwide proliferation of Weapons of Mass Destruction (WMD).

Navigation Warfare (NAVWAR) is a warfighting application of electronic warfare (EW), Information Operations (IO) and space control (SC) employing various techniques and technologies to negate or prevent hostile use of positioning, navigation, and timing (PNT) information and protect unimpeded use of PNT information by U.S., Allied, and Coalition Forces while not unduly disrupting peaceful use outside an area of operation. The Joint Navigation Warfare Center (JNWC) was established

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>
--	---

to integrate and coordinate NAVWAR PNT capabilities across the mission areas of intelligence, surveillance, reconnaissance, information operations, electronic warfare, and space control. The JNWC is also commissioned to integrate NAVWAR into space operations and assists the warfighter with subject matter expertise to “operationalize” NAVWAR, encouraging the NAVWAR view that the Global Positioning System is a taskable weapons system in addition to being a worldwide PNT service. The JNWC establishes and maintains the Department’s premier basis of NAVWAR expertise, and provides subject matter expertise and knowledge support to warfighters, Department decision makers, the Federal Interagency (the Department of Homeland Security and other civil agencies concerned with the Critical National Infrastructure), and the coalition through testing and evaluation; modeling, simulation and analysis; and exercise and training support.

The Nation's strategic C2, sensors and mission planning programs can not rapidly exchange information across multiple missions, creating ambiguity that delays time critical national C2 decision making processes. GSIN establishes a unified national architecture integrating disparate MW/MD systems into a single IP-based system providing redundant and unambiguous MW/MD data to national leadership. GSIN nets together all sensors, from tactical to strategic, including the Nation's most modern and capable assets - taking advantage of their larger numbers, improved algorithms, mobility and forward deployment to provide earlier cross-cueing and expanded decision space when every second counts. GSIN will permit an IP-based UDOP to augment voice conferencing and rapidly build a single, unambiguous missile event picture allowing real-time senior collaboration for nuclear C2 and improved senior leader situational awareness (SA) and decision-making.

All SWPS development efforts (including ISPAN, JNWC and GSIN development activities) are in budget activity 7, Operational System Development, because their systems are operational, and currently support capabilities to create, verify, and produce OPLAN 8010, meet new UCP taskings, and produce other products.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	17.505	33.836	0.000	0.000	0.000
Current President's Budget	17.013	33.746	28.441	0.000	28.441
Total Adjustments	-0.492	-0.090	28.441	0.000	28.441
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.492	-0.090	28.441	0.000	28.441

UNCLASSIFIED

R-1 Line Item #121

Page 2 of 28

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*

Change Summary Explanation

- FY10 increase is for the Global Sensor Integrated Network (GSIN) effort.
- FY11 decrease reflects completion of the ISPAN Block 1 effort, ramp up of the ISPAN Increment 2 effort and reduction of GSIN development for higher Air Force priorities.

UNCLASSIFIED

R-1 Line Item #121

Page 3 of 28

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>	PROJECT 675059: <i>Strategic War Planning System (SWPS)</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675059: <i>Strategic War Planning System (SWPS)</i>	10.614	10.429	18.904	0.000	18.904	10.434	10.481	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The mission of USSTRATCOM is to establish and provide full-spectrum global strike, coordinated space and information operations capabilities to meet both deterrent and decisive national security objectives, and to provide operational space support, integrated missile defense, Global Command Control Communications and Computers Intelligence Surveillance and Reconnaissance (C4ISR), and specialized planning expertise to the joint warfighter. This mission has been defined by the 2002 Unified Command Plan (UCP) changes 1 and 2. To enable these missions, the Integrated Strategic Planning and Analysis Network (ISPAN) (formerly known as SWPS) must be capable of both deliberate and adaptive planning employing the full spectrum of kinetic and non-kinetic weapons. The planning system will continue to evolve as weapon systems are matured, new systems are developed, and the threat changes, particularly in the area of worldwide proliferation of Weapons of Mass Destruction (WMD).

The ISPAN modernization program includes initiation of Course of Action (COA) Development as a service to the DoD enterprise, workflow and decision support development, Combatant Commander (COCOM) Collaboration (Global Operations Center Collaborative Environment (GOC CE), User Defined Operational Picture (UDOP)), conventional mission planning integration, and Mission Planning Analysis System (MPAS) maintenance and modernization. This includes software coding, integration of multiple internal and external planning applications, as well as developmental and early operational test activities. ISPAN also includes automated data processing equipment (ADPE), software, facilities support, manpower, and training to support the mission objectives of ISPAN, associated deployable and distributed data processing nodes, and subsidiary systems. Activities also include studies and analysis to support both current program planning and execution and future program planning.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: ISPAN Block 1 Modernization (MPAS)	1.484	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS -</i> <i>USSTRATCOM</i>	PROJECT 675059: <i>Strategic War Planning System</i> <i>(SWPS)</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A						
MAJOR THRUST: ISPAN Block 1 Post-IOC Enhancement <i>FY 2009 Accomplishments:</i> In FY 2009: Funds used to expand user base at distributed operations, continue (complete) Global Distributed Enhancement (GDE), (complete) Enterprise Service Bus migration and technology enhancements, improve Global Situational Awareness tool performance and deliver portal enhancements. <i>FY 2010 Plans:</i> In FY 2010: Funds will be used to develop Post IOC enhancements for web services and develop solutions for Information Assurance deficiencies. <i>FY 2011 Base Plans:</i> In FY 2011: N/A <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A		5.591	2.800	0.000	0.000	0.000
MAJOR THRUST: ISPAN Increment 2 Modernization <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Funds will be used for pre and post Milestone B development efforts for the next increment of planning tools for the ISPAN Collaborative Information Environment (CIE). Increment 2 continues by building on capabilities delivered in Block 1. Increment 2 will develop advanced decision		0.000	7.629	17.904	0.000	17.904

UNCLASSIFIED

R-1 Line Item #121

Page 6 of 28

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>	PROJECT 675059: <i>Strategic War Planning System (SWPS)</i>
--	---	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0101313F: <i>Strategic War Planning Systems (OPAF)</i>	12.487	13.212	13.344	0.000	13.344	13.588	13.823	6.877	6.989	0.000	0.000

D. Acquisition Strategy

ISPAN will develop and modernize strategic planning tools for the combatant commanders using an evolutionary acquisition strategy with development contracts that are negotiated and awarded in a competitive environment.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>	PROJECT 675059: <i>Strategic War Planning System (SWPS)</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Air Vehicle Planning System (APS)	TM	BAE San Diego, CA	0.000	0.000		0.000		0.000		0.000	0.000	0.000	47.100
Missile Graphics Planning System (MGPS)	C/CPAF	Northrop Grumman Bellevue, NE	1.484	0.000		0.000		0.000		0.000	0.000	1.484	41.000
Targeting	C/CPAF	SAIC San Diego, Ca	0.000	0.000		0.000		0.000		0.000	0.000	0.000	36.200
ISPAN Modernization	C/CPAF	Lockheed Martin Integrated Systems Papillion, NE	6.385	7.692	Oct 2009	16.167	Oct 2010	0.000		16.167	25.181	55.425	164.783
Miscellaneous Contracts	C/CPAF	TBD TBD	2.745	2.737	Oct 2009	2.737	Oct 2010	0.000		2.737	5.546	13.765	Continuing
Classified Project (FY08 Supplemental)	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			10.614	10.429		18.904		0.000		18.904	30.727	70.674	

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	10.614	10.429	18.904	0.000	18.904	30.727	70.674	

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

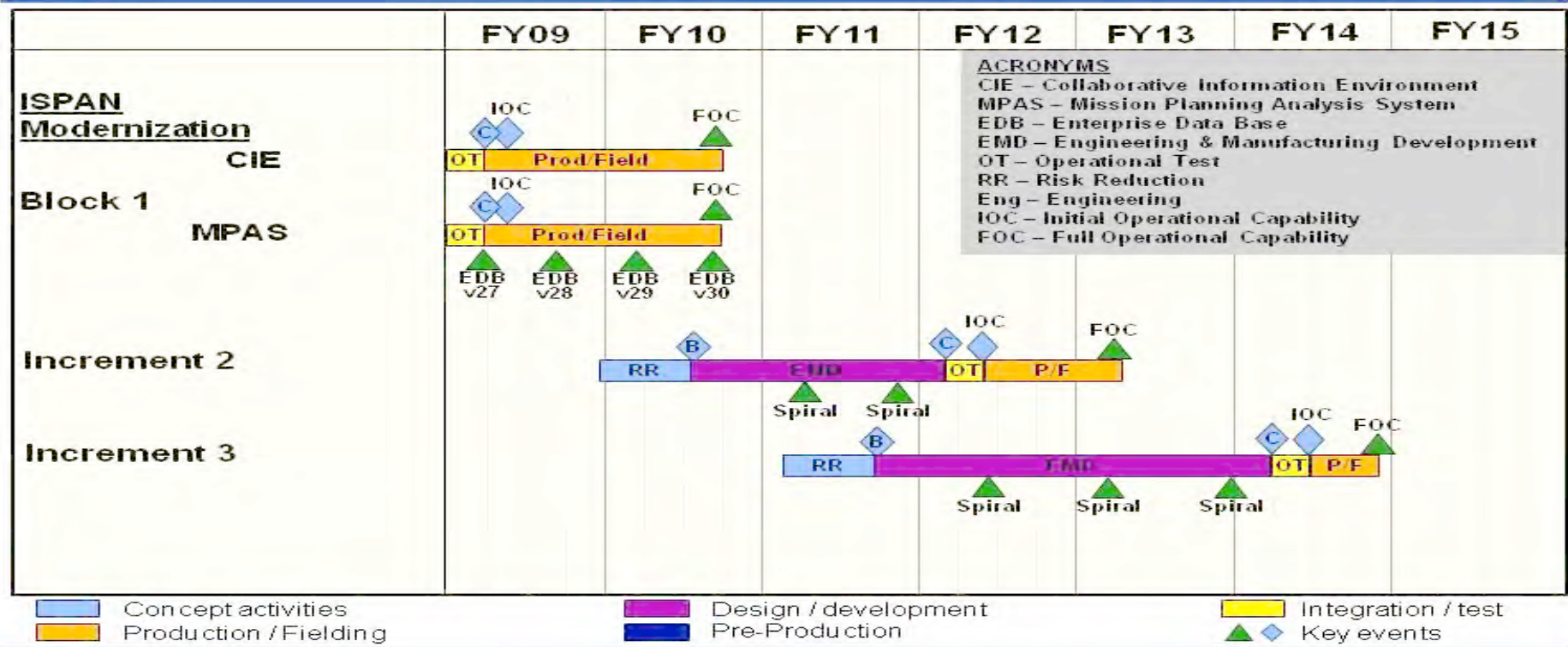
PE 0101313F: STRAT WAR PLANNING SYS -
USSTRATCOM

PROJECT

675059: Strategic War Planning System
(SWPS)



ISPAN Block 1 / Increment Schedule



11APOM R-Docs

Depicted by installation/production flow

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>	PROJECT 675059: <i>Strategic War Planning System (SWPS)</i>
--	---	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
ISPAN Block 1 MS C	2	2009	2	2009
ISPAN Block 1 IOC	2	2009	2	2009
ISPAN Increment 2 MS B	3	2010	3	2010
ISPAN Block 1 FOC	3	2010	3	2010
ISPAN Increment 2 development	3	2010	4	2011
ISPAN Increment 3 MS B	3	2011	3	2011
ISPAN Increment 3 development	4	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>				PROJECT 675282: <i>Joint Navigation Warfare Center (JNWC)</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675282: <i>Joint Navigation Warfare Center (JNWC)</i>	6.399	8.267	9.529	0.000	9.529	9.583	9.729	9.924	10.092	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Navigation Warfare (NAVWAR) is a warfighting application of electronic warfare (EW), Information Operations (IO), and space control (SC) employing various techniques and technologies to negate or prevent hostile use of positioning, navigation, and timing (PNT) information and protect unimpeded use of PNT information by U.S., Allied, and Coalition Forces while not unduly disrupting peaceful use outside an area of operation. The Joint Navigation Warfare Center (JNWC) integrates and coordinates NAVWAR PNT capabilities across the mission areas of intelligence, surveillance, reconnaissance, information operations, electronic warfare, cyber and space control. The JNWC establishes and maintains the Department's premier basis of NAVWAR expertise, and provides subject matter expertise and knowledge support to warfighters, Department decision makers, the Federal Interagency (the Department of Homeland Security and other civil agencies concerned with the Critical National Infrastructure), and the coalition through testing and evaluation; modeling, simulation and analysis; and exercise and training support. In recent years, the Global Positioning System (GPS) has become one of the most critical enablers of modern, advanced technology warfare. In an era where everything from advanced weapons systems to basic goods and services are tracked or guided by navigation systems such as GPS, Navigation Warfare is an interest and concern, especially if those systems are interrupted or lost. Likewise, as Global Navigation Satellite Systems (GNSS) proliferate, it becomes necessary to consider not only denying adversary use of GPS but also negating adversary use of alternate GNSS systems for PNT. The primary mission of the JNWC is to provide joint warfighter NAVWAR support through three broad mission areas:

- a. Warfighter Operational Support – The JNWC applies knowledge of PNT vulnerabilities, prevention capabilities, and system operations to integrate NAVWAR as an element of warfighting operations. The JNWC provides reach-back capabilities to assist in resolving NAVWAR issues, address situations involving degradation or denial of PNT capabilities, and recommend actions to mitigate effects of both hostile and non-hostile events. The JNWC develops and maintains current information for the warfighter and theater commanders to include assessments of adversary capabilities, assessments of coalition capabilities and limitations, and other topics of special interest. The JNWC also provides subject matter expertise and knowledge support to Department acquisition and policy decision makers, the Federal Interagency (the Department of Homeland Security and other civil agencies concerned with the Critical National Infrastructure), and the coalition.
- b. Test, Training, Exercises, and Experiments – This JNWC mission area is the centerpiece for maintaining NAVWAR currency of information for the warfighter. The JNWC conducts annual NAVWAR field test events, and provides NAVWAR technical assistance for training, exercises and experiments. The JNWC, as part of this effort, maintains Integrated Joint NAVWAR Test Roadmaps and current intelligence products on adversary NAVWAR capabilities and Coalition NAVWAR capabilities

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>	PROJECT 675282: <i>Joint Navigation Warfare Center (JNWC)</i>
--	---	---

and vulnerabilities. JNWC GYPSY field test events focus on fielded operational systems and capabilities to integrate NAVWAR and PNT operations, to baseline current NAVWAR electronic protection, support, and attack capabilities, and to assist warfighters optimize and deconflict theater/tactical assets. JNWC FORTUNE field test events are more engineering focused and are used to evaluate specific NAVWAR capabilities or vulnerabilities, and to reduce engineering risk for GYPSY events. Test, training, exercise and experiment activities: 1) prepare the joint warfighter for operations in current and rapidly evolving NAVWAR threat environments; 2) establish priorities, standardized operational procedures for tactics, techniques, and procedures; 3) test electronic attack CONOPs to endure deconfliction and optimization with other operations to mitigate blue force fratricide; and 4) evolve standardized test methods.

c. Navigation Warfare Information Analysis Center (IAC) – The JNWC develops and maintains methods, standards, models and simulations used in NAVWAR analysis and operates the NAVWAR Information Analysis Center (IAC). JNWC evaluates new models for accuracy and applicability to specific situations and rapidly evolving threat environments. It also develops and maintains standard test methodologies created solely by the U.S. as well as test methods developed in collaboration with coalition partners. These standard methodologies ensure data sharing is efficient and effective, and ensures accurate feedback to the operational communities. The JNWC, as part of this effort, manages the GPS EA Frequency Clearance process and conducts independent analysis and verification of EA frequency clearance requests. It also maintains and upgrades the GPS-RPM GPS frequency clearance model as required and conducts modeling and simulation exercises on GPS interference to include test and exercise threat laydowns for DoD organizations unable to perform their own modeling. The NAVWAR IAC serves as a source of NAVWAR information and technical expertise for DoD researchers, engineers, program managers, warfighters, testers, and others. It collects, analyzes, synthesizes, and disseminates scientific and technical information in clearly defined specialized subject areas. It promotes standardization by: 1) providing in-depth analyses; 2) creating products that respond to technical inquiries; 3) preparing state-of-the-art reports, handbooks, and databases; 4) conducting technology assessments; and 5) supporting the exchange of information within the NAVWAR community.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: NAVWAR Operational Warfighter Support <i>FY 2009 Accomplishments:</i> In FY 2009: Funds provided COCOM reachback analysis and develop adversary, threat and intel assessments.	1.455	1.780	2.223	0.000	2.223

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>	PROJECT 675282: <i>Joint Navigation Warfare Center (JNWC)</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2009 Accomplishments:</i> In FY 2009: Funds used to support Information Analysis Center (IAC), develop Global Positioning System Reliability Prediction Model (GPS-RPM) Upgrades, GPS frequency clearance evaluations, modeling and simulation methodologies, standards and analysis.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Funds will support the Information Analysis Center (IAC), develop Global Positioning System Reliability Prediction Model (GPS-RPM) Upgrades, GPS frequency clearance evaluations, modeling and simulation methodologies, standards and analysis.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Funds will support the Information Analysis Center (IAC), develop Global Positioning System Reliability Prediction Model (GPS-RPM) Upgrades, GPS frequency clearance evaluations, modeling and simulation methodologies, standards and analysis.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>					
Accomplishments/Planned Programs Subtotals	6.399	8.267	9.529	0.000	9.529

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (3121): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

NAVWAR will investigate, test, and simulate potential threats and mitigation strategies for preventing the hostile use of Positioning, Navigation and Timing (PNT) information through the use of competitive contracts and selective employment of government agencies.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS -</i> <i>USSTRATCOM</i>	PROJECT 675282: <i>Joint Navigation Warfare Center</i> <i>(JNWC)</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>				PROJECT 675282: <i>Joint Navigation Warfare Center (JNWC)</i>					

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NAVWAR Warfighter Operational Support	TM	Overlook Systems Technologies Inc Vienna VA; Kirtland AFB, NM	1.455	1.780	Nov 2009	2.223	Nov 2010	0.000		2.223	Continuing	Continuing	Continuing
NAVWAR Modeling, Simulation, Tools & Methods and Integrated Analysis Center	TM	Overlook Systems Technologies Inc Vienna VA; Kirtland AFB, NM	2.497	3.446	Nov 2009	3.804	Nov 2010	0.000		3.804	Continuing	Continuing	Continuing
Subtotal			3.952	5.226		6.027		0.000		6.027			

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
FORTUNE and GYPSY field tests, NATO trials, US Tests, Exercises and Experiments	PO	Overlook Systems Technologies Inc Vienna VA; Kirtland AFB, NM	2.447	3.041	Nov 2009	3.502	Nov 2010	0.000		3.502	Continuing	Continuing	Continuing
Subtotal			2.447	3.041		3.502		0.000		3.502			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>	PROJECT 675282: <i>Joint Navigation Warfare Center (JNWC)</i>
--	---	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
Multiple Government Agencies and Test Ranges

Project Cost Totals	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		6.399	8.267	9.529	0.000	9.529		

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

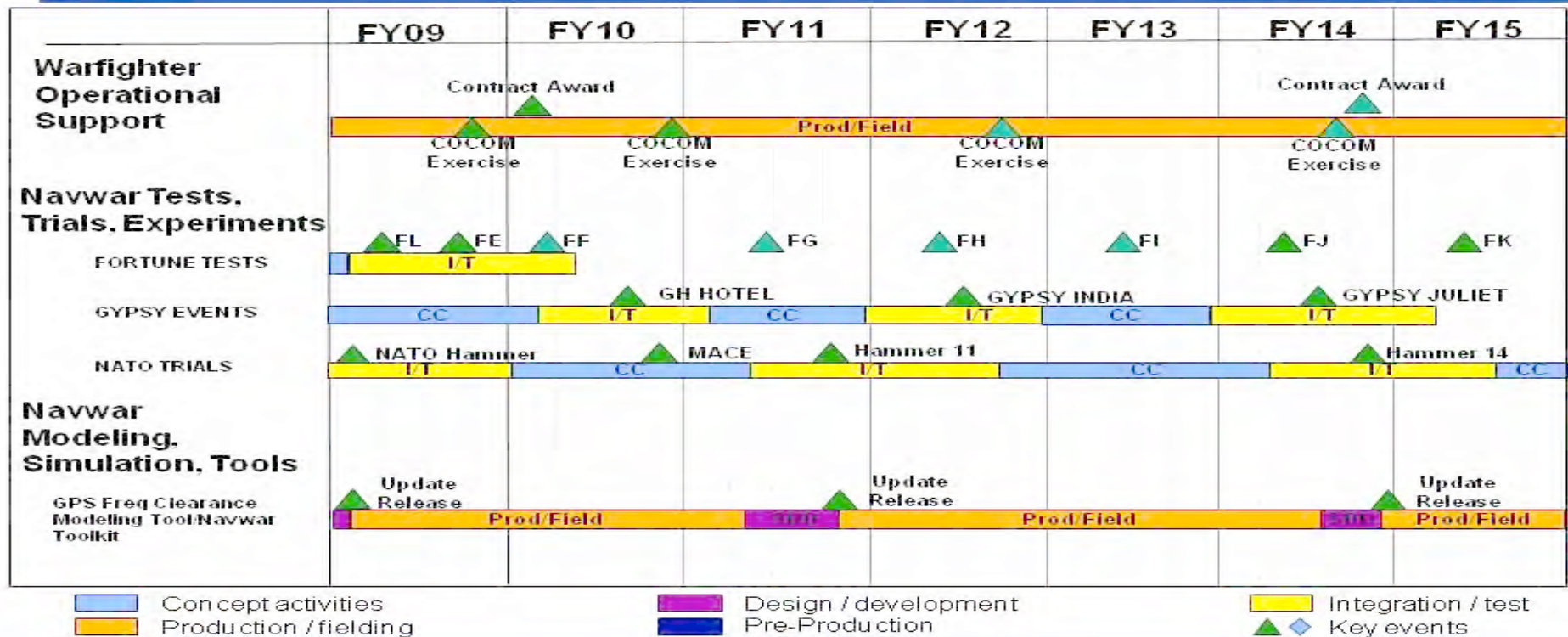
PE 0101313F: STRAT WAR PLANNING SYS -
USSTRATCOM

PROJECT

675282: Joint Navigation Warfare Center
(JNWC)



Navwar Program Schedule



- Concept activities
- Production / fielding
- Design / development
- Pre-Production
- Integration / test
- Key events

PB10 R-Docs

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>	PROJECT 675282: <i>Joint Navigation Warfare Center (JNWC)</i>
--	---	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
NAVWAR Operational Support Contract Award	1	2010	1	2010
NAVWAR Test, Training, Exercises and Experiments - FORTUNE Field Tests	2	2009	2	2011
NAVWAR Test, Training, Exercises & Experiments - GYPSY HOTEL Tests	3	2010	3	2010
NAVWAR Test, Training, Exercises & Experiments - NATO Trials & Exercises	1	2009	4	2011
GPS Frequency Clearance	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>				PROJECT 675368: <i>GSIN (Global Sensor Integrated Network)</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675368: <i>GSIN (Global Sensor Integrated Network)</i>	0.000	15.050	0.008	0.000	0.008	0.009	0.013	0.016	0.017	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
Note In FY2010 Project 5368, Global Sensor Integrated Network (GSIN) transferred from PE 0105921F, Service Support to STRATCOM Space Activities, in order to better align effort and appropriation.											
A. Mission Description and Budget Item Justification The mission of USSTRATCOM is to establish and provide full-spectrum global strike, coordinated space and information operations capabilities to meet both deterrent and decisive national security objectives, and to provide operational space support, integrated missile defense, Global Command Control Communications and Computers Intelligence Surveillance and Reconnaissance (C4ISR), and specialized planning expertise to the joint warfighter. This mission has been defined by the 2002 Unified Command Plan (UCP) changes 1 and 2. GSIN nets together all sensors, from tactical to strategic, including the Nation's most modern and capable assets - taking advantage of their larger numbers, improved algorithms, mobility and forward deployment to provide earlier cross-cueing and expanded decision space when every second counts. GSIN will permit an IP-based User Defined Operating Picture (UDOP) to augment voice conferencing and rapidly build a single, unambiguous missile event picture allowing real-time senior collaboration for nuclear C2 and improved senior leader situational awareness (SA) and decision-making. The Nation's strategic C2, sensors and mission planning programs can not rapidly exchange information across multiple missions, creating ambiguity that delays time critical national C2 decision making processes. The problem is most evident in the Department's missile warning (MW) and missile defense (MD) programs. GSIN establishes a unified national architecture integrating disparate MW/MD systems into a single IP-based system providing redundant and unambiguous MW/MD data to national leadership. Activities also include studies and analysis to support both current program planning and execution and future program planning.											
B. Accomplishments/Planned Program (\$ in Millions)											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>		PROJECT 675368: <i>GSIN (Global Sensor Integrated Network)</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: N/A</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>								
<p>MAJOR THRUST: GSIN Increment 1 Interoperability</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: N/A</p> <p><i>FY 2010 Plans:</i> In FY 2010: Funds will develop software for DISA secret and below interoperability; create and coordinate Information Assurance documentation; support security test and evaluation; conduct development, non-degradation, and operational testing. Registers data schema and services with appropriate registries/catalogs, system and software accreditation.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Funds continue software development for DISA secret and below interoperability; support security test and evaluation; conduct development, non-degradation, and operational testing.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>				0.000	3.000	0.008	0.000	0.008
Accomplishments/Planned Programs Subtotals				0.000	15.050	0.008	0.000	0.008

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>	PROJECT 675368: <i>GSIN (Global Sensor Integrated Network)</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0105921F: <i>Service Support to STRATCOM Space Activities (O&M)</i>	5.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.000	5.000

D. Acquisition Strategy

GSIN will use ESC, MDA, and other contract vehicles to manage, develop and modernize the combined Missile Warning/Missile Defense data exposure architecture and solution. These contract vehicles are already in place and available.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>	PROJECT 675368: <i>GSIN (Global Sensor Integrated Network)</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Missile Warning software development	C/CPIF	Lockheed Martin Colorado Springs, CO	0.000	1.000	Jan 2010	0.000	Jan 2011	0.000		0.000	0.000	1.000	0.000
Missile Defense software development	C/CPAF	Lockheed Martin Gaithersburg, MD	0.000	7.000	Jan 2010	0.000	Jan 2011	0.000		0.000	Continuing	Continuing	Continuing
Data Correlation	C/CPAF	MIT/LL Boston, MA	0.000	3.700	Jan 2010	0.000	Jan 2011	0.000		0.000	0.000	3.700	0.000
Common Schema	C/CPAF	BAH Omaha, NE	0.000	2.240	Jan 2010	0.000		0.000		0.000	0.000	2.240	0.000
Subtotal			0.000	13.940		0.000		0.000		0.000			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Functional management support	C/CPAF	Various Various	0.000	0.410	Jan 2010	0.002	Jan 2011	0.000		0.002	Continuing	Continuing	0.000
Development Review and Management	C/FP	Various Various	0.000	0.700	Jan 2010	0.006	Jan 2011	0.000		0.006	0.000	0.706	0.000
Subtotal			0.000	1.110		0.008		0.000		0.008			0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>	PROJECT 675368: <i>GSIN (Global Sensor Integrated Network)</i>
--	---	--

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Remarks													
			Total Prior Years Cost	FY 2010	FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			0.000	15.050	0.008		0.000		0.008				

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*

PROJECT

675368: *GSIN (Global Sensor Integrated Network)*



GSIN Schedule

		FY09	FY10	FY11	FY12	FY13	FY14	FY15
Increment 1:	Requirement Analysis and Refinement	Req'ts Refinement ◆ SRR ◆ SRR ◆ SRR						
	Services and Display Development and Data exposure		◆ Contract Awd ◆ SDR ◆ PDR ◆ Design/Development ◆ CDR	◆ DT				

SRR= System Requirements Review
 SDR = System Design Review
 PDR = Preliminary Design Review
 CDR = Critical Design Review
 IDR = Interim Design Review
 DT = Developmental Testing
 TRR = Test Readiness Review

- Concept activities
- Design / development
- Integration / test
- Production / fielding
- Pre-Production
- ▲ ◆ Key events

PB10 R-Docs

Depicted by installation/production flow

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101313F: <i>STRAT WAR PLANNING SYS - USSTRATCOM</i>	PROJECT 675368: <i>GSIN (Global Sensor Integrated Network)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Systems Requirement Review Missile Warning Capability	1	2009	4	2009
Increment 1 contract award	2	2010	2	2010
Increment 1 System Design Review (MW Capability)	2	2010	2	2010
Increment 1 Preliminary Design Review (MW Capability)	4	2010	4	2010
Increment 1 Critical Design Review (MW Capability)	2	2011	2	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102325F: <i>JOINT SURVEILLANCE SYSTEM</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	9.832	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
675371: <i>CRITICAL PARTS REPLACEMENT PROGRAM</i>	0.000	9.832	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification

The FPS-117 radar supports the NORAD, USNORTHCOM, and PACOM missions. The radars are part of the Atmospheric Early Warning System (AEWS), providing radar data to both USAF and Federal Aviation Administration control systems in Alaska. The radars also provide air surveillance capability as part of a bi-national defense program with Canada. The USAF FPS-117s (versions 1 & 4) are no longer in production, however the latest FPS-117 (version 7, aka Block 3) is in production. The Original Equipment Manufacturer (OEM) has continued to advance this radar system's technology and perform service life upgrades for other developing nations, however, Sixty-five percent of LRUs installed in the North American system are no longer manufactured by the OEM and many subcomponents are obsolete rendering the AEWS unsupportable.

Air surveillance is NORAD's number #1 issue as stated by the NORAD Commander to Congress in March 2008. Without the immediate replacement of this equipment NORAD will lose air surveillance capability by 2013 due to failing radars.

The AN/FPS-117 Essential Parts Replacement Program restores the radar system capability to its original availability rates by eliminating parts obsolescence and replacing high failure rate components.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102325F: <i>JOINT SURVEILLANCE SYSTEM</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	9.832	0.000	0.000	0.000
Current President's Budget	0.000	9.832	0.000	0.000	0.000
Total Adjustments	0.000	0.000	0.000	0.000	0.000
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0102325F: <i>JOINT SURVEILLANCE SYSTEM</i>				PROJECT 675371: <i>CRITICAL PARTS REPLACEMENT PROGRAM</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675371: <i>CRITICAL PARTS REPLACEMENT PROGRAM</i>	0.000	9.832	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification											
<p>The FPS-117 radar supports the NORAD, USNORTHCOM, and PACOM missions. The radars are part of the Atmospheric Early Warning System (AEWS), providing radar data to both USAF and Federal Aviation Administration control systems in Alaska. The radars also provide air surveillance capability as part of a bi-national defense program with Canada. The USAF FPS-117s (versions 1 & 4) are no longer in production, however the latest FPS-117 (version 7, aka Block 3) is in production. The Original Equipment Manufacturer (OEM) has continued to advance this radar system's technology and perform service life upgrades for other developing nations, however, Sixty-five percent of LRUs installed in the North American system are no longer manufactured by the OEM and many subcomponents are obsolete rendering the AEWS unsupportable.</p> <p>Air surveillance is NORAD's number #1 issue as stated by the NORAD Commander to Congress in March 2008. Without the immediate replacement of this equipment NORAD will lose air surveillance capability by 2013 due to failing radars.</p> <p>The AN/FPS-117 Essential Parts Replacement Program restores the radar system capability to its original availability rates by eliminating parts obsolescence and replacing high failure rate components.</p>											
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
MAJOR THRUST: System Integration, Purchase of Government Furnished Equipment, Documentation, Test and Certification Support						0.000	8.150	0.000	0.000	0.000	
<i>FY 2009 Accomplishments:</i> In FY 2009: N/A											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102325F: <i>JOINT SURVEILLANCE SYSTEM</i>	PROJECT 675371: <i>CRITICAL PARTS REPLACEMENT PROGRAM</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2010 Plans:</i> In FY 2010: Program Support					
<i>FY 2011 Base Plans:</i> In FY 2011: N/A					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	0.000	9.832	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (3765): <i>OPAF, BPAC 8330810 Comm Elec Mods BP83</i>	0.000	20.000	38.000	0.000	38.000	32.000	26.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The RDT&E will be used to conduct acquisition activities, integration with equipment not being replaced, documentation and testing. Ogden ALC will be the SPD for this program. They are the best option as they have been the program office/acquisition authority for the radars while it has been in sustainment and have the expertise to conduct the procurement. There will be a full and open competition followed by a Firm Fixed Price contract award.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0102325F: <i>JOINT SURVEILLANCE SYSTEM</i>				PROJECT 675371: <i>CRITICAL PARTS REPLACEMENT PROGRAM</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prototype Integration	C/FFP	TBD TBD	0.000	7.150	Jun 2010	0.000		0.000		0.000	0.000	7.150	0.000
Subtotal			0.000	7.150		0.000		0.000		0.000	0.000	7.150	0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Support	Various	OO ALC	0.000	0.432	Jun 2010	0.000		0.000		0.000	0.000	0.432	0.000
Subtotal			0.000	0.432		0.000		0.000		0.000	0.000	0.432	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102325F: <i>JOINT SURVEILLANCE SYSTEM</i>	PROJECT 675371: <i>CRITICAL PARTS REPLACEMENT PROGRAM</i>
--	---	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prototype and Testing	Various	OO ALC	0.000	1.000	Jun 2010	0.000		0.000		0.000	0.000	1.000	0.000
Subtotal			0.000	1.000		0.000		0.000		0.000	0.000	1.000	0.000

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Management	C/FFP	A&AS Contractor TBD	0.000	1.250	Dec 2010	0.000		0.000		0.000	0.000	1.250	0.000
Subtotal			0.000	1.250		0.000		0.000		0.000	0.000	1.250	0.000

Remarks

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Cost Totals			0.000	9.832		0.000		0.000	0.000	9.832	0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102325F: <i>JOINT SURVEILLANCE SYSTEM</i>	PROJECT 675371: <i>CRITICAL PARTS REPLACEMENT PROGRAM</i>

Joint Surveillance System

Schedule Profile Milestones	FY10 Q1	FY10 Q2	FY10 Q3	FY10 Q4
A&AS Contract Award	▲			
Prototype Integration Contract Award		▲		
Engineering Design Evaluation			▲	
Prototype Testing				▲

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102325F: <i>JOINT SURVEILLANCE SYSTEM</i>	PROJECT 675371: <i>CRITICAL PARTS REPLACEMENT PROGRAM</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
A&AS Contract	2	2010	3	2010
Prototype Inegration Contract	2	2010	3	2010
Engineeirng Design Evaluation	2	2010	3	2010
Prototype Testing	2	2010	3	2010

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102326F: <i>REGION/ SECTOR OPERATIONS CONTROL CENTER</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	23.151	25.589	23.732	0.000	23.732	24.701	22.588	22.262	22.443	Continuing	Continuing
674592: <i>Region/Sector Operations Modernization Center (R/SAOC)</i>	23.151	25.589	23.732	0.000	23.732	24.701	22.588	22.262	22.443	Continuing	Continuing

A. Mission Description and Budget Item Justification

Battle Control System-Fixed (BCS-F) is the replacement for the fixed sites for the Region/Sector Air Operations Center (R/SAOC), also known as Region Air Operations Center-Air Defense Sector (RAOC-ADS), for the Atmospheric Early Warning System (AEWS). The BCS-F program, which supports NOBLE EAGLE, is a next-generation battle management command and control system with enhanced capability to integrate data from existing and future civil and military defense surveillance systems into a comprehensive recognized air picture and National Capital Region/Integrated Air Defense System (NCR/IADS). This multi-input single integrated air control picture enhances the North American Aerospace Defense/Combatant Commander's (NORAD/CC's) capability to conduct peacetime air sovereignty, transition, and conventional warfare in the event of aggression toward the North American continent (including Hawaii). The BCS-F system serves as the Air Force's Homeland Defense battle management, command, and control hub and integrates data from radar sensors, data links, and the supporting communications architecture. It provides the tactical communications and data link capabilities that enable planning, directing, coordinating, and controlling forces for air surveillance, air defense, and control of sovereign US air space (including the National Capital Region). BCS-F is a bi-national cooperative program with Canada, ensuring air defense and surveillance capability for the entire North American continent (including Hawaii).

BCS-F achieved Initial Operational Capability in October 2006. The current effort focuses on the modernization and improvement of the hardware and software suite to address operational gaps as well as preventing and overcoming diminishing manufacturing sources and obsolescence issues.

This program is in Budget Activity 7, Operational System Development, because it provides funding for the replacement of a currently existing and operating system.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102326F: <i>REGION/ SECTOR OPERATIONS CONTROL CENTER</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	23.151	25.734	0.000	0.000	0.000
Current President's Budget	23.151	25.589	23.732	0.000	23.732
Total Adjustments	0.000	-0.145	23.732	0.000	23.732
• Congressional General Reductions		-0.145			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	23.732	0.000	23.732

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0102326F: <i>REGION/ SECTOR</i> <i>OPERATIONS CONTROL CENTER</i>				PROJECT 674592: <i>Region/Sector Operations</i> <i>Modernization Center (R/SAOC)</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674592: <i>Region/Sector Operations Modernization Center (R/SAOC)</i>	23.151	25.589	23.732	0.000	23.732	24.701	22.588	22.262	22.443	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Battle Control System-Fixed (BCS-F) is the replacement for the fixed sites for the Region/Sector Air Operations Center (R/SAOC), also known as Region Air Operations Center-Air Defense Sector (RAOC-ADS), for the Atmospheric Early Warning System (AEWS). The BCS-F program, which supports NOBLE EAGLE, is a next-generation battle management command and control system with enhanced capability to integrate data from existing and future civil and military defense surveillance systems into a comprehensive recognized air picture and National Capital Region/Integrated Air Defense System (NCR/IADS). This multi-input single integrated air control picture enhances the North American Aerospace Defense/Combatant Commander's (NORAD/CC's) capability to conduct peacetime air sovereignty, transition, and conventional warfare in the event of aggression toward the North American continent (including Hawaii). The BCS-F system serves as the Air Force's Homeland Defense battle management, command, and control hub and integrates data from radar sensors, data links, and the supporting communications architecture. It provides the tactical communications and data link capabilities that enable planning, directing, coordinating, and controlling forces for air surveillance, air defense, and control of sovereign US air space (including the National Capital Region). BCS-F is a bi-national cooperative program with Canada, ensuring air defense and surveillance capability for the entire North American continent (including Hawaii).

BCS-F achieved Initial Operational Capability in October 2006. The current effort focuses on the modernization and improvement of the hardware and software suite to address operational gaps as well as preventing and overcoming diminishing manufacturing sources and obsolescence issues.

This program is in Budget Activity 7, Operational System Development, because it provides funding for the replacement of a currently existing and operating system.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: System Development of BCS-F.	15.221	17.715	15.023	0.000	15.023

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102326F: <i>REGION/ SECTOR</i> <i>OPERATIONS CONTROL CENTER</i>	PROJECT 674592: <i>Region/Sector Operations</i> <i>Modernization Center (R/SAOC)</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Perform follow-on testing and certification of Increment 3.1 as the system fields.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Perform DT/OT of Increment 3.2.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>					
Accomplishments/Planned Programs Subtotals	23.151	25.589	23.732	0.000	23.732

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0102362F: <i>Region/ Sector</i> <i>Operations Control Center (BCS-F)</i> <i>(OPAF)</i>	14.266	11.132	13.989	0.000	13.989	12.546	11.622	12.014	12.338	0.000	0.000

D. Acquisition Strategy

The BCS-Fixed program is utilizing an incremental development acquisition strategy to further advance tactical Battle Management C2 capabilities.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102326F: <i>REGION/ SECTOR</i> <i>OPERATIONS CONTROL CENTER</i>	PROJECT 674592: <i>Region/Sector Operations</i> <i>Modernization Center (R/SAOC)</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Continue acquisition activities associated with System Development	SS/CPAF	Thales Raytheon Systems Fullerton, CA	15.221	17.715	Dec 2009	15.023	Nov 2010	0.000		15.023	Continuing	Continuing	Continuing
Subtotal			15.221	17.715		15.023		0.000		15.023			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Tech Spt	TM	Various Various	1.569	1.754	Dec 2009	1.553	Dec 2010	0.000		1.553	Continuing	Continuing	Continuing
System Engineering	FFRDC	Mitre Bedford, MA	1.776	1.933	Oct 2009	2.011	Oct 2010	0.000		2.011	Continuing	Continuing	Continuing
Program Office Support	Various/ Various	Various Various	1.482	1.018	Oct 2009	1.513	Oct 2010	0.000		1.513	Continuing	Continuing	Continuing
Subtotal			4.827	4.705		5.077		0.000		5.077			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102326F: <i>REGION/ SECTOR OPERATIONS CONTROL CENTER</i>	PROJECT 674592: <i>Region/Sector Operations Modernization Center (R/SAOC)</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
46th Test Wing/Other Test Act	Various/ Various	Various Various	3.103	3.169	Nov 2009	3.232	Nov 2010	0.000		3.232	Continuing	Continuing	Continuing
NCR-IADS Integration Testing	Various/ Various	Various Various	0.000	0.000		0.400	Dec 2010	0.000		0.400	Continuing	Continuing	Continuing
Subtotal			3.103	3.169		3.632		0.000		3.632			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	23.151	25.589		23.732		0.000		23.732			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

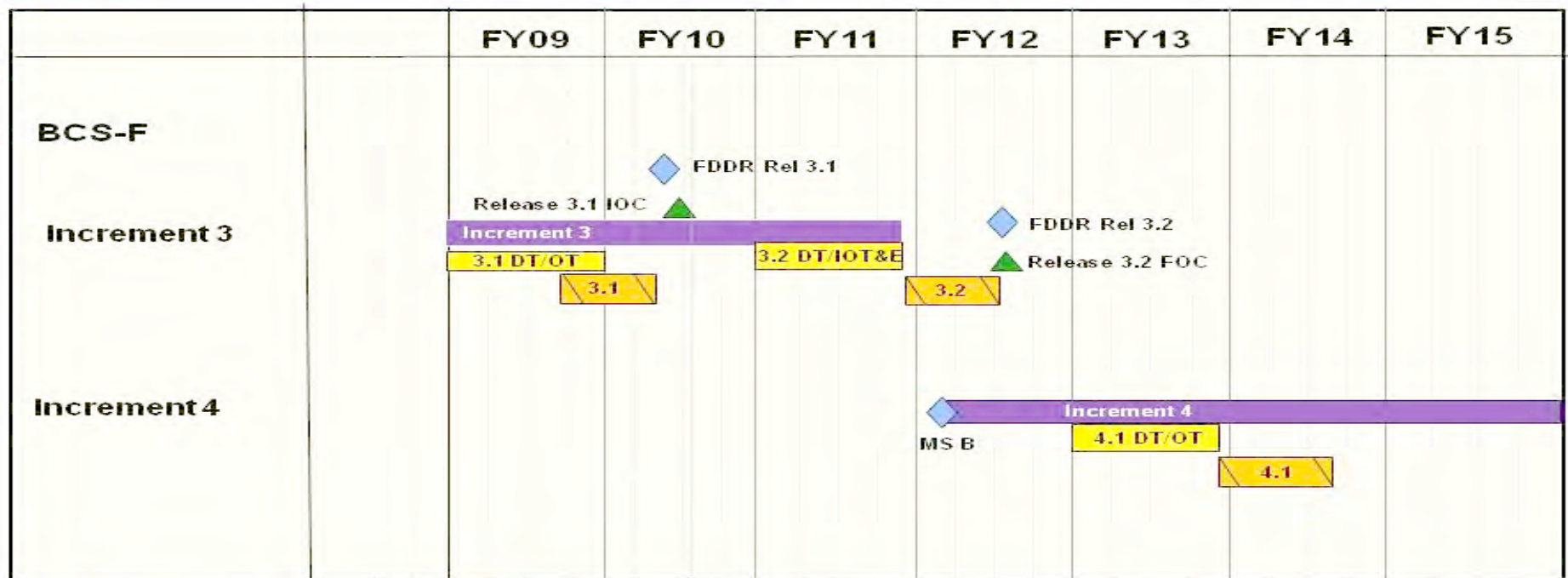
PE 0102326F: REGION/ SECTOR
OPERATIONS CONTROL CENTER

PROJECT

674592: Region/Sector Operations
Modernization Center (R/SAOC)



BCS - F Schedule



Design / development
 Integration / test
 Production / fielding
 Key events (Green Triangle)
 Key events (Blue Diamond)

As of Aug 2009

PB11 R-Docs

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102326F: <i>REGION/ SECTOR</i> <i>OPERATIONS CONTROL CENTER</i>	PROJECT 674592: <i>Region/Sector Operations</i> <i>Modernization Center (R/SAOC)</i>
--	--	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Continuation of BCS-F Increment 3 Software Development	1	2009	4	2011
BCS-F Increment 3 Release 3.1 DT/OT	1	2009	4	2009
BCS-F Increment 3 Release 3.1 Fielding Decisions	2	2010	2	2010
BCS-F Increment 3 Release 3.1 IOC	2	2010	2	2010
BCS-F Increment 3 Release 3.2 DT/IOT&E	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			PE 0102823F: <i>STRAT AEROSPACE INTEL SYS ACTIVITIES</i>								
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.015	0.018	0.015	0.000	0.015	0.015	0.016	0.015	0.016	Continuing	Continuing
675011: <i>Space Situational Awareness Initiatives</i>	0.015	0.018	0.015	0.000	0.015	0.015	0.016	0.015	0.016	Continuing	Continuing

A. Mission Description and Budget Item Justification

In the 2006 Strategic Master Plan, the AFSPC/CC identified a need to provide timely, accurate, relevant intelligence data to support Space Superiority operations - Offensive Counterspace (OCS), Defense Counterspace (DCS), and Space Situational Awareness (SSA). USSTRATCOM further stated the need for such a requirement in its February 2006 Space Control JCD. The SIPB HMMI is AFSPC/A2's response to those requirements. The SIPB HMMI is an information technology that links intelligence analysts to space operators, enabling them to share in the production, dissemination and visualization of predictive and highly graphic decision-making products - SIPBs. The SIPB HMMI gives the JSpOC, JFCCs, and COCOM J2/J3/J5s an Adaptive Planning tool to obtain adversary space and counterspace tactics, centers of gravity, and courses of action. Linking existing space operational and intelligence data, databases, and products, the SIPB HMMI becomes the integral effort for a space intelligence TCPED capability that influences the kill chain.

B. Program Change Summary (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	0.015	0.018	0.000	0.000	0.000
Current President's Budget	0.015	0.018	0.015	0.000	0.015
Total Adjustments	0.000	0.000	0.015	0.000	0.015
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.015	0.000	0.015

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102823F: <i>STRAT AEROSPACE INTEL</i> <i>SYS ACTIVITIES</i>	PROJECT 675011: <i>Space Situational Awareness</i> <i>Initiatives</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675011: <i>Space Situational Awareness Initiatives</i>	0.015	0.018	0.015	0.000	0.015	0.015	0.016	0.015	0.016	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

In the 2006 Strategic Master Plan, the AFSPC/CC identified a need to provide timely, accurate, relevant intelligence data to support Space Superiority operations - Offensive Counterspace (OCS), Defense Counterspace (DCS), and Space Situational Awareness (SSA). USSTRATCOM further stated the need for such a requirement in its February 2006 Space Control JCD. The SIPB HMMI is AFPSC/A2's response to those requirements. The SIPB HMMI is an information technology that links intelligence analysts to space operators, enabling them to share in the production, dissemination and visualization of predictive and highly graphic decision-making products - SIPBs. The SIPB HMMI gives the JSpOC, JFCCs, and COCOM J2/J3/J5s an Adaptive Planning tool to obtain adversary space and counterspace tactics, centers of gravity, and courses of action. Linking existing space operational and intelligence data, databases, and products, the SIPB HMMI becomes the integral effort for a space intelligence TCPED capability that influences the kill chain.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Develop net-centric capability for Space IPB data owners and subscribers across the space and non-space intelligence communities to rapidly update Space IPB doctrinal templates and un... <i>FY 2009 Accomplishments:</i> In FY 2009: Develop net-centric capability for Space IPB data owners and subscribers across the space and non-space intelligence communities to rapidly update Space IPB doctrinal templates and underlying data.	0.007	0.007	0.010	0.000	0.010

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102823F: <i>STRAT AEROSPACE INTEL</i> SYS ACTIVITIES	PROJECT 675011: <i>Space Situational Awareness Initiatives</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Develop net-centric capability for Space IPB data owners and subscribers across the space and non-space intelligence communities to rapidly update Space IPB doctrinal templates and underlying data.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Develop net-centric capability for Space IPB data owners and subscribers across the space and non-space intelligence communities to rapidly update Space IPB doctrinal templates and underlying data.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>						
<p>MAJOR THRUST: Supports integration into Single Integrated Space Picture (SISP)</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Supports integration into Single Integrated Space Picture (SISP)</p> <p><i>FY 2010 Plans:</i> In FY 2010: Supports integration into Single Integrated Space Picture (SISP)</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: N/A</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>		0.004	0.006	0.000	0.000	0.000
<p>MAJOR THRUST: Enable near-real time intelligence support to space battle management, space combat assessment, and adversary space trending and pattern analysis.</p>		0.004	0.005	0.005	0.000	0.005

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102823F: <i>STRAT AEROSPACE INTEL</i> SYS ACTIVITIES	PROJECT 675011: <i>Space Situational Awareness Initiatives</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2009 Accomplishments:</i> In FY 2009: Enable near-real time intelligence support to space battle management, space combat assessment, and adversary space trending and pattern analysis.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Enable near-real time intelligence support to space battle management, space combat assessment, and adversary space trending and pattern analysis.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: N/A</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	0.015	0.018	0.015	0.000	0.015

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (4495): N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Spiral 2 (June 2007 - May 2009): Transform Space IPB registered and tagged service oriented architecture data into a display of adversary space and counterspace situation. Provide capability to drill down to underlying specific threat data. Develop capability to rapidly updates Space IPB doctrinal templates and underlying data through immediate discovery, manipulation and posting of revised data by Space IPB data owners and subscribers across the space and non-space intelligence communities.

Spiral 3 (June 2007 - June 2009): Further refine the Space IPB HMMI concept by adding RAIDRS, Counter-ISR, and other data feeds to existing Space IPB data sources.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102823F: <i>STRAT AEROSPACE INTEL</i> <i>SYS ACTIVITIES</i>	PROJECT 675011: <i>Space Situational Awareness</i> <i>Initiatives</i>
<p>Spiral 4 (October 2009 - October 2016): Transition from Space IPB data and content management to architectures, hardware, and software that enable NRT intelligence support to space battle management, space combat assessment, and adversary space trending and pattern analysis. Establish an intelligence-influenced visualization tasking of global space surveillance and theater ISR assets as well as decision aids to interpret the delivery of recent combat effects.</p> <p>E. Performance Metrics</p> <p>Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.</p>		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102823F: <i>STRAT AEROSPACE INTEL</i> SYS ACTIVITIES	PROJECT 675011: <i>Space Situational Awareness Initiatives</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Space Situational Awareness Initiatives	TBD/TBD	TBD TBD	0.015	0.018	Jan 2010	0.015		0.000		0.015	Continuing	Continuing	Continuing
Subtotal			0.015	0.018		0.015		0.000		0.015			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	0.015	0.018		0.015	0.000	0.015		

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102823F: <i>STRAT AEROSPACE INTEL</i> SYS ACTIVITIES	PROJECT 675011: <i>Space Situational Awareness Initiatives</i>
--	---	--

	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Space Situational Awareness Initiatives	■	■	■	■	■	■	■	■																								

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102823F: <i>STRAT AEROSPACE INTEL</i> SYS ACTIVITIES	PROJECT 675011: <i>Space Situational Awareness Initiatives</i>
--	---	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Space Situational Awareness Initiatives	1	2009	4	2010

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761F: <i>Warfighter Rapid Acquisition Program</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	29.928	11.968	10.580	0.000	10.580	15.345	14.716	13.450	13.888	Continuing	Continuing
674936: <i>Warfighter Rapid Acquisition Program</i>	29.928	11.968	10.580	0.000	10.580	15.345	14.716	13.450	13.888	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Warfighter Rapid Acquisition Process (WRAP) provides rapid transition funding for the development and fielding of highly successful competitive experiments, demonstrations, and innovative approaches to support the Expeditionary Air Force (EAF) and other warfighters. WRAP supports the specific DoD goal of significantly shortening the acquisition response time and acquisition cycle times. This process is expected to shorten the project decision/initiation time by 2-5 years for selected projects due to the integrated headquarters review and immediate availability of transition funding. The WRAP process is specifically designed to deal with initiatives throughout the fiscal year as they arise resulting in a sequential distribution of WRAP funding over the course of that entire execution year. The WRAP process allows the Air Force the flexibility to acquire innovative concepts and initiatives and transition them to the warfighter annually in a manner that coincides with Air Forces' development of the President's Budget.

Candidate projects will compete for WRAP approval and funds based on business case analyses, actual or potential operational impacts, cost savings, project development, production, lifecycle costs, project risk and cost of delay.

The Air Force, through appropriate program offices, will manage the acquisition and development process for the integration and fielding of WRAP-approved projects. Each project will have a complete acquisition plan defined and approved as a criterion for project selection and subsequent funding. Each sponsoring Major Command/ Agency must to commit full project funding in the subsequent programming cycle.

Congress will be notified when all projects have been approved by the end of the current fiscal year via Congressional Notification Letters.

This effort is Budget Activity 7, Operational System Development, because the program provides a vehicle for developing operational concepts and new technologies for enhancing capabilities of the 21st century aerospace force.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761F: <i>Warfighter Rapid Acquisition Program</i>	

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	29.928	11.968	0.000	0.000	0.000
Current President's Budget	29.928	11.968	10.580	0.000	10.580
Total Adjustments	0.000	0.000	10.580	0.000	10.580
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	10.580	0.000	10.580

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0203761F: <i>Warfighter Rapid Acquisition Program</i>				PROJECT 674936: <i>Warfighter Rapid Acquisition Program</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674936: <i>Warfighter Rapid Acquisition Program</i>	29.928	11.968	10.580	0.000	10.580	15.345	14.716	13.450	13.888	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Warfighter Rapid Acquisition Process (WRAP) provides rapid transition funding for the development and fielding of highly successful competitive experiments, demonstrations, and innovative approaches to support the Expeditionary Air Force (EAF) and other warfighters. WRAP supports the specific DoD goal of significantly shortening the acquisition response time and acquisition cycle times. This process is expected to shorten the project decision/initiation time by 2-5 years for selected projects due to the integrated headquarters review and immediate availability of transition funding. The WRAP process is specifically designed to deal with initiatives throughout the fiscal year as they arise resulting in a sequential distribution of WRAP funding over the course of that entire execution year. The WRAP process allows the Air Force the flexibility to acquire innovative concepts and initiatives and transition them to the warfighter annually in a manner that coincides with Air Forces' development of the President's Budget.

Candidate projects will compete for WRAP approval and funds based on business case analyses, actual or potential operational impacts, cost savings, project development, production, lifecycle costs, project risk and cost of delay.

The Air Force, through appropriate program offices, will manage the acquisition and development process for the integration and fielding of WRAP-approved projects. Each project will have a complete acquisition plan defined and approved as a criterion for project selection and subsequent funding. Each sponsoring Major Command/ Agency must to commit full project funding in the subsequent programming cycle.

Congress will be notified when all projects have been approved by the end of the current fiscal year via Congressional Notification Letters.

This effort is Budget Activity 7, Operational System Development, because the program provides a vehicle for developing operational concepts and new technologies for enhancing capabilities of the 21st century aerospace force.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Planned WRAP project selection and project initiation	29.928	11.968	10.580	0.000	10.580

UNCLASSIFIED

R-1 Line Item #127

Page 3 of 8

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761F: <i>Warfighter Rapid Acquisition Program</i>	PROJECT 674936: <i>Warfighter Rapid Acquisition Program</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2009 Accomplishments:</i> In FY 2009: Planned for and selected 12 WRAP initiatives to receive WRAP funding and sponsorship.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Plan to select qualified initiatives to receive WRAP funding and sponsorship.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Plan to select qualified initiatives to receive WRAP funding and sponsorship.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>					
Accomplishments/Planned Programs Subtotals	29.928	11.968	10.580	0.000	10.580

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (4718): <i>Not Applicable</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

WRAP enables Air Force innovation including experimentation and spiral development processes to decrease fielding timelines and allows development, fielding, or upgrading of systems until the sponsoring MAJCOM/Agency can incorporate them into their subsequent submission. The Air Force, through appropriate program offices, will manage the acquisition and development process for the integration and fielding of WRAP approved projects. Each project will have a complete acquisition plan defined and approved as a criterion for project selection and subsequent funding. The Air Staff and the Air Force corporate structure will complete an Operations and Acquisition Review to ensure project affordability and appropriateness within the Air Force Overall program.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761F: <i>Warfighter Rapid Acquisition Program</i>	PROJECT 674936: <i>Warfighter Rapid Acquisition Program</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0203761F: <i>Warfighter Rapid Acquisition Program</i>				PROJECT 674936: <i>Warfighter Rapid Acquisition Program</i>					

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test & Eval	Various/ Various	Multiple Multiple	29.928	11.968	Jan 2010	10.580		0.000		10.580	Continuing	Continuing	Continuing
Various	Various	No text provided No text provided	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
Subtotal			29.928	11.968		10.580		0.000		10.580			

Remarks
WRAP funds are distributed to initiatives capable of utilizing 3600 monies.

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	29.928	11.968	10.580	0.000	10.580			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE





PE 0203761F: *Warfighter Rapid Acquisition Program*

PROJECT

674936: *Warfighter Rapid Acquisition Program*

Warfighting Rapid Acquisition Program – PE 23761F

WRAP Schedule	FY09	FY10				FY11				FY12				FY13				FY14				FY15				FY15			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Acquisition Milestones	Ongoing WRAP cycle																												
T&E Milestones	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Delivery Schedule	Ongoing WRAP cycle																												

-  Award of project funding for selected programs
-  Annual Data Call for subsequent year WRAP Projects
-  Second cycle of WRAP funding based on funds availability
-  Award of project funding for second cycle based on funds availability

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761F: <i>Warfighter Rapid Acquisition Program</i>	PROJECT 674936: <i>Warfighter Rapid Acquisition Program</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
FY 09 WRAP Project Approval/Project funding (Planned)	1	2009	3	2009
FY 10 WRAP Project Initiation (Planned)	1	2010	1	2010
FY 10 WRAP Project Approval/Project funding (Planned)	1	2010	2	2010
FY 11 WRAP Project Approval/Project funding (Planned)	1	2011	1	2011
FY 11 WRAP Project Approval/Project Funding (Planned) (1)	1	2011	2	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205219F: <i>MQ-9 Development and Fielding</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	57.205	93.145	125.427	0.000	125.427	111.627	80.159	52.896	27.352	Continuing	Continuing
675246: <i>MQ-9 Development and Fielding</i>	57.205	93.145	125.427	0.000	125.427	111.627	80.159	52.896	27.352	Continuing	Continuing

Note

FY09 funding totals includes \$1.0M provided via Omnibus reprogramming.
 FY10 funding totals include \$1.4M appropriated for Overseas Contingency Operations.
 FY09 Other Adjustments represents Omnibus funding mistakenly loaded into the MQ-9 PE and later reprogrammed for higher Air Force priorities.

A. Mission Description and Budget Item Justification

The basic MQ-9 Reaper system consists of the aircraft, sensors, a ground control station (GCS), communications equipment, weapon kits, support equipment, simulator and training devices, Readiness Spares Packages (RSP), technical data/training, and personnel required to operate, maintain, and sustain the system. The system is designed to be modular and open-ended: mission-specific equipment is employed in a 'plug-and-play' mission kit concept allowing specific aircraft and control station configurations to be tailored to fit mission needs.

The MQ-9 Reaper aircraft is a single-engine, turbo-prop remotely piloted aircraft designed to operate over-the-horizon at medium-to-high altitude for long endurance sorties. The aircraft is designed primarily to prosecute critical, emerging Time-Sensitive-Targets (TSTs) as a radar, Electro-optical/Infrared (EO/IR), and laser designator-based attack asset with on-board hard-kill capability (hunter-killer). It also performs Intelligence, Surveillance, Reconnaissance and Target Acquisition (ISR TA). In the hunter-killer role, the aircraft employs fused multi-spectral sensors to automatically find, fix, and track ground targets (Automatic Target Cueing (ATC), Target Location Accuracy (TLA), Metric Sensor and other capabilities), and assesses post-strike results. The MQ-9 system is continuing development and fields capability through incremental upgrades. Two test aircraft will be purchased in FY10 to support development and test activity. Future developmental capabilities include increasing the maximum gross takeoff weight of the aircraft; automatic takeoff and landing capability (ATLC); enhancing aircraft systems to include integrated redundant avionics; Predator Primary Data Link (PPDL) comm system upgrades and comm upgrades to include data link encryption and Ka frequency migration; anti-ice/de-ice capability; navigation system upgrades; electrical system upgrades; airframe and airframe system improvements; propulsion system improvements; secure voice and data communications, including SATCOM, upgrades; sensor/stores management computer improvement; MIL-STD-1760 advanced weapons data bus; advanced sensor and weapon payloads; improved human-machine interface; integrating precision weapons (e.g. AGM-114 Hellfire missile and GBU-12/38/49 guided bombs); Mode 5 / Automatic Dependent Surveillance - Broadcast (ADS-B) integration; hardware and software upgrades to the ground control station for MQ-9 operations; completing airworthiness certification; weapons system certification and accreditation; and producing applicable training devices that emulate weapon

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205219F: <i>MQ-9 Development and Fielding</i>
--	---

system capabilities. Subsequent investments will continue to evolve the MQ-9's capabilities to meet new operational requirements (e.g. SIGINT, communications, electronic attack (EA), Wide Area Airborne Surveillance (WAAS), and other sensors and weapons) and address reliability, maintainability, sustainability, and safety issues. Activities also include studies and analyses to support both current program planning and execution, and future program planning.

The Ground Control Station (GCS) functions as the aircraft cockpit and can control the aircraft either within line-of-sight (LOS) or beyond LOS (BLOS) via a combination of satellite relay and terrestrial communications. The GCS is either mobile to support forward operating locations or fixed at a facility to support Remote Split Operations (RSO). The GCS has the capability to perform mission planning; provides a means for manual control; allows personnel to launch, recover, and monitor aircraft, payloads, and system communications status; incorporates secure data links to send aircraft and payload commands and receive system telemetry and payload data; monitors threats to the aircraft; displays the common operational picture; and provides support functions. Launch and Recovery GCS (LRGCS) allow for servicing, systems checks, maintainance, and launch and recovery of aircraft under LOS control for hand-off to a mobile or fixed facility GCS. Additionally, there is a GCS configuration that allows for control of multiple aircraft and payloads. GCS upgrades will be developed and fielded in coordination with improvements to MQ-9 aircraft capabilities and in response to evolving operational requirements.

This program will participate in studies, analyses, development, testing, and implementation of future unmanned aircraft systems (UASs) and various standards to pursue joint, Allied, and coalition interoperability.

This program is in Budget Activity 7, Operational Systems Development, because it involves Air Force R&D to field a highly capable operational system and provide essential operational capabilities.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	46.431	39.245	0.000	0.000	0.000
Current President's Budget	57.205	93.145	125.427	0.000	125.427
Total Adjustments	10.774	53.900	125.427	0.000	125.427
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		53.900			
• Congressional Directed Transfers		0.000			
• Reprogrammings	10.774	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	125.427	0.000	125.427

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205219F: <i>MQ-9 Development and Fielding</i>
--	---

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 675246: *MQ-9 Development and Fielding*

Congressional Add: *MQ-9 UAS AirPortal, Hancock Field*

Congressional Add: *Unspecified Projects*

Congressional Add Subtotals for Project: 675246

Congressional Add Totals for all Projects

	FY 2009	FY 2010
	3.000	0.000
	0.000	52.500
	3.000	52.500
	3.000	52.500

Change Summary Explanation

FY09 funding totals includes \$1.0M provided via Omnibus reprogramming.

FY10 funding totals include Congressional add of \$52.5M and \$1.4M appropriated for Overseas Contingency Operations.

FY10 increase adds funding to increase development/test capacity and accelerate Block 5 aircraft and Ground Control Station capability development/test.

UNCLASSIFIED

R-1 Line Item #128

Page 3 of 15

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205219F: <i>MQ-9 Development and Fielding</i>	PROJECT 675246: <i>MQ-9 Development and Fielding</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675246: <i>MQ-9 Development and Fielding</i>	57.205	93.145	125.427	0.000	125.427	111.627	80.159	52.896	27.352	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

FY09 funding totals include \$1.0M provided via Omnibus reprogramming.
 FY10 funding totals include \$1.4M appropriated for Overseas Contingency Operations.
 FY09 Other Adjustments represents Omnibus funding mistakenly loaded into the MQ-9 PE and later reprogrammed for higher Air Force priorities.

A. Mission Description and Budget Item Justification

The basic MQ-9 Reaper system consists of the aircraft, sensors, a ground control station (GCS), communications equipment, weapon kits, support equipment, simulator and training devices, Readiness Spares Packages (RSP), technical data/training, and personnel required to operate, maintain, and sustain the system. The system is designed to be modular and open-ended: mission-specific equipment is employed in a 'plug-and-play' mission kit concept allowing specific aircraft and control station configurations to be tailored to fit mission needs.

The MQ-9 Reaper aircraft is a single-engine, turbo-prop remotely piloted aircraft designed to operate over-the-horizon at medium-to-high altitude for long endurance sorties. The aircraft is designed primarily to prosecute critical, emerging Time-Sensitive-Targets (TSTs) as a radar, Electro-optical/Infrared (EO/IR), and laser designator-based attack asset with on-board hard-kill capability (hunter-killer). It also performs Intelligence, Surveillance, Reconnaissance and Target Acquisition (ISR TA). In the hunter-killer role, the aircraft employs fused multi-spectral sensors to automatically find, fix, and track ground targets (Automatic Target Cueing (ATC), Target Location Accuracy (TLA), Metric Sensor and other capabilities), and assesses post-strike results. The MQ-9 system is continuing development and fields capability through incremental upgrades. Two test aircraft will be purchased in FY10 to support development and test activity. Future developmental capabilities include increasing the maximum gross takeoff weight of the aircraft; automatic takeoff and landing capability (ATLC); enhancing aircraft systems to include integrated redundant avionics; Predator Primary Data Link (PPDL) comm system upgrades and comm upgrades to include data link encryption and Ka frequency migration; anti-ice/de-ice capability; navigation system upgrades; electrical system upgrades; airframe and airframe system improvements; propulsion system improvements; secure voice and data communications, including SATCOM, upgrades; sensor/stores management computer improvement; MIL-STD-1760 advanced weapons data bus; advanced sensor and weapon payloads; improved human-machine interface; integrating precision weapons (e.g. AGM-114 Hellfire missile and GBU-12/38/49 guided bombs); Mode 5 / Automatic Dependent Surveillance - Broadcast (ADS-B) integration; hardware and software upgrades to the ground control station for MQ-9 operations; completing airworthiness certification; weapons system certification and accreditation; and producing applicable training devices that emulate weapon

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205219F: <i>MQ-9 Development and Fielding</i>	PROJECT 675246: <i>MQ-9 Development and Fielding</i>
--	---	--

system capabilities. Subsequent investments will continue to evolve the MQ-9's capabilities to meet new operational requirements (e.g. SIGINT, communications, electronic attack (EA), Wide Area Airborne Surveillance (WAAS), and other sensors and weapons) and address reliability, maintainability, sustainability, and safety issues. Activities also include studies and analyses to support both current program planning and execution, and future program planning.

The Ground Control Station (GCS) functions as the aircraft cockpit and can control the aircraft either within line-of-sight (LOS) or beyond LOS (BLOS) via a combination of satellite relay and terrestrial communications. The GCS is either mobile to support forward operating locations or fixed at a facility to support Remote Split Operations (RSO). The GCS has the capability to perform mission planning; provides a means for manual control; allows personnel to launch, recover, and monitor aircraft, payloads, and system communications status; incorporates secure data links to send aircraft and payload commands and receive system telemetry and payload data; monitors threats to the aircraft; displays the common operational picture; and provides support functions. Launch and Recovery GCS (LRGCS) allow for servicing, systems checks, maintainance, and launch and recovery of aircraft under LOS control for hand-off to a mobile or fixed facility GCS. Additionally, there is a GCS configuration that allows for control of multiple aircraft and payloads. GCS upgrades will be developed and fielded in coordination with improvements to MQ-9 aircraft capabilities and in response to evolving operational requirements.

This program will participate in studies, analyses, development, testing, and implementation of future unmanned aircraft systems (UASs) and various standards to pursue joint, Allied, and coalition interoperability.

This program is in Budget Activity 7, Operational Systems Development, because it involves Air Force R&D to field a highly capable operational system and provide essential operational capabilities.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: MQ-9 System Development and Demonstration (SDD) <i>FY 2009 Accomplishments:</i> In FY 2009: Aircraft/Communication system improvements (encryption); development/integration of follow-on sensors, weapons, payloads; test/training capability; Auto-takeoff & land; and technical data <i>FY 2010 Plans:</i> In FY 2010: Aircraft/Communication system improvements (encryption); development/integration of follow-on sensors, weapons, payloads; test/training capability; Auto-takeoff & land; and technical data	19.367	22.695	49.188	0.000	49.188

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205219F: <i>MQ-9 Development and Fielding</i>	PROJECT 675246: <i>MQ-9 Development and Fielding</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> In FY 2011: Aircraft/Communication system improvements (encryption); development/integration of follow-on sensors, weapons, payloads; test/training capability; Auto-takeoff & land; and technical data <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A						
MAJOR THRUST: Ground Control Station (GCS) Development <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: N/A <i>FY 2011 Base Plans:</i> In FY 2011: Develop Ground Control Station (GCS) improvements <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A		0.000	0.000	31.200	0.000	31.200
MAJOR THRUST: MQ-9 EO/IR Sensor <i>FY 2009 Accomplishments:</i> In FY 2009: Develop Target Location Accuracy improvements for EO/IR sensor <i>FY 2010 Plans:</i> In FY 2010: Continues Target Location Accuracy improvements for EO/IR sensor		7.021	4.041	15.600	0.000	15.600

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205219F: <i>MQ-9 Development and Fielding</i>	PROJECT 675246: <i>MQ-9 Development and Fielding</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2010 Plans:</i> In FY 2010: Integrate Encrypted Data Link (Vortex) into MQ-9 comm system (FY10 OCO)						
<i>FY 2011 Base Plans:</i> In FY 2011: N/A						
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A						
MAJOR THRUST: FY09 Omnibus reprogramming error <i>FY 2009 Accomplishments:</i> In FY 2009: FY09 Omnibus funding was mistakenly loaded into the MQ-9 PE and later reprogrammed for higher Air Force priorities.		16.500	0.000	0.000	0.000	0.000
<i>FY 2010 Plans:</i> In FY 2010: N/A						
<i>FY 2011 Base Plans:</i> In FY 2011: N/A						
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A						
Accomplishments/Planned Programs Subtotals		54.205	40.645	125.427	0.000	125.427
		FY 2009	FY 2010			
Congressional Add: MQ-9 UAS AirPortal, Hancock Field		3.000	0.000			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205219F: <i>MQ-9 Development and Fielding</i>	PROJECT 675246: <i>MQ-9 Development and Fielding</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
<i>FY 2009 Accomplishments:</i> In FY 2009: Funds development efforts for UAS airspace integration <i>FY 2010 Plans:</i> In FY 2010: N/A		
Congressional Add: Unspecified Projects <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Test Assets, GCS Development, acceleration of selected SDD elements	0.000	52.500
Congressional Adds Subtotals	3.000	52.500

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0205219F: <i>MQ-9 UAV, (APAF)</i>	526.876	544.539	1,016.217	108.000	1,124.217	1,279.200	1,353.589	1,177.466	1,171.893	0.000	0.000

D. Acquisition Strategy

The MQ-9 Reaper system will be acquired sole-source with General Atomics-ASI as the prime contractor. Raytheon is the sole source provider of the MTS-B system.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205219F: <i>MQ-9 Development and Fielding</i>	PROJECT 675246: <i>MQ-9 Development and Fielding</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MQ-9 System Development and Demonstration	SS/Various	GA-ASI Poway, CA	174.952	32.546	Jan 2010	49.188	Jan 2011	0.000		49.188	Continuing	Continuing	Continuing
Ground Control Station (GCS) Development	TBD/TBD	GA-ASI Poway, CA	0.000	22.900		31.200	Feb 2011	0.000		31.200	Continuing	Continuing	Continuing
EO/IR Development	Various/Various	Raytheon McKinney TX	15.339	4.950	Jan 2010	15.600	Apr 2011	0.000		15.600	Continuing	Continuing	Continuing
Operator Simulator Development	TBD/CPFF	677 AESG Wright-Patterson AFB OH	5.770	4.055		3.020	May 2011	0.000		3.020	Continuing	Continuing	Continuing
Test Assets	TBD/FFP	GA-ASI Poway, CA	0.000	18.840		0.000	Feb 2010	0.000		0.000	Continuing	Continuing	Continuing
SAR Enhancements	TBD/CPFF	GA-RSG Poway, CA	5.264	4.000	Dec 2009	17.000	Feb 2011	0.000		17.000	Continuing	Continuing	Continuing
MQ-9 encrypted data link (FY09 Omnibus Request)	TBD/TBD	TBD TBD	1.000	1.400	Jan 2011	0.000		0.000		0.000	0.000	2.400	0.000
Subtotal			202.325	88.691		116.008		0.000		116.008			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205219F: <i>MQ-9 Development and Fielding</i>	PROJECT 675246: <i>MQ-9 Development and Fielding</i>
--	---	--

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
See remark below.	TBD/TBD	TBD TBD	16.500	0.000		0.000		0.000		0.000	0.000	16.500	0.000
Subtotal			16.500	0.000		0.000		0.000		0.000	0.000	16.500	0.000

Remarks

FY09 funding includes \$16.5M mistakenly loaded into the MQ-9 PE and later reprogrammed for higher Air Force priorities.

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Support	Various/ Various	Various Various	26.702	4.454	Oct 2009	9.419	Oct 2010	0.000		9.419	Continuing	Continuing	Continuing
Subtotal			26.702	4.454		9.419		0.000		9.419			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	245.527	93.145		125.427		0.000		125.427			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205219F: <i>MQ-9 Development and Fielding</i>	PROJECT 675246: <i>MQ-9 Development and Fielding</i>
--	---	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0205219F: MQ-9 Development and Fielding

PROJECT

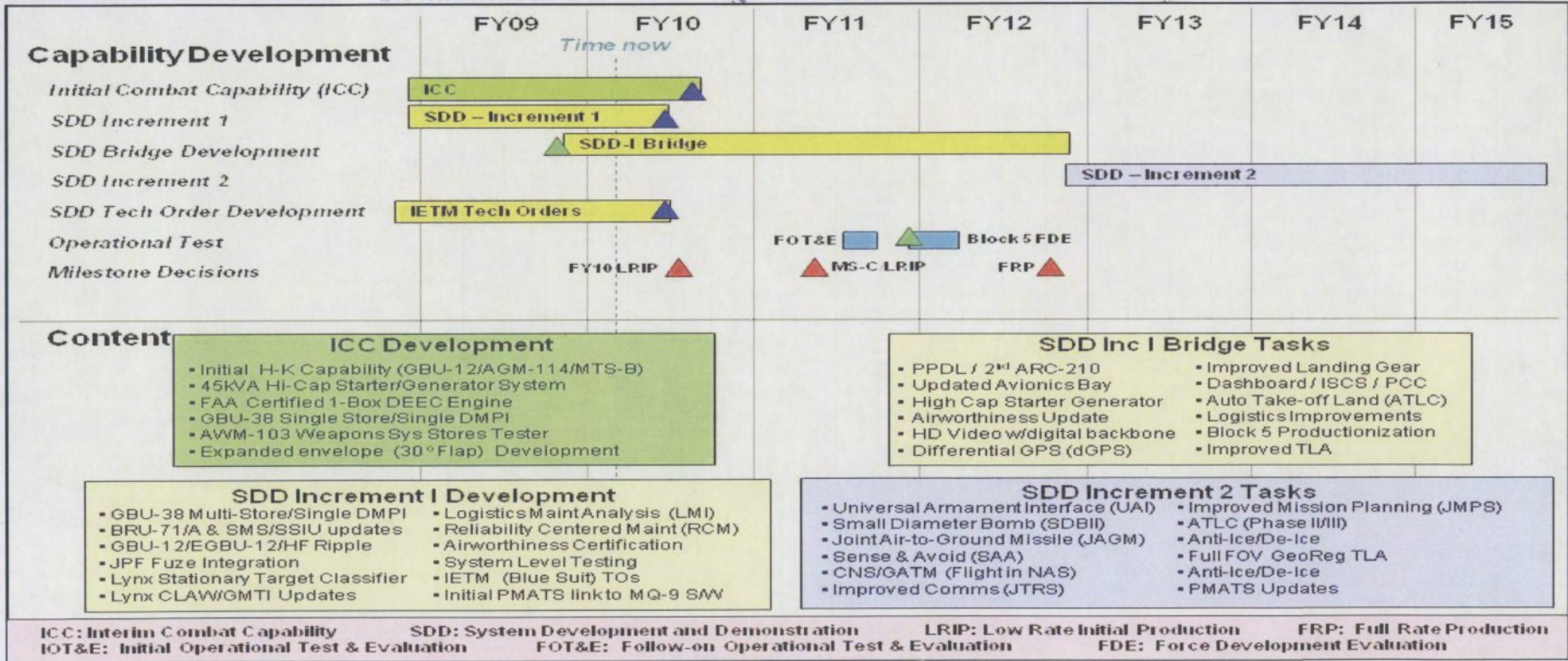
675246: MQ-9 Development and Fielding



MQ-9 Reaper Program Schedule

(FY11 PBR w/RMD 700 Reclama)

Dominant Air Power: Design For Tomorrow... Deliver Today



As of: 5 Jan 10 1

UNCLASSIFIED

R-1 Line Item #128

Page 14 of 15

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205219F: <i>MQ-9 Development and Fielding</i>	PROJECT 675246: <i>MQ-9 Development and Fielding</i>
--	---	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
SDD-I Bridge Contract Start	4	2009	4	2009
ICC Contract Completion	3	2010	3	2010
SDD Increment 1 Contract Completion	2	2010	2	2010
Blue Suit (IETM) Tech Order Contract End	2	2010	2	2010
Block 5 Force Development Evaluation (FDE) - Start	4	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207040F: <i>Multi-Platform Electronics</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	14.747	15.574	0.000	15.574	0.000	0.000	0.000	0.000	Continuing	Continuing
675310: <i>EA Pod DRFM Upgrade</i>	0.000	14.747	15.574	0.000	15.574	0.000	0.000	0.000	0.000	0.000	30.359

A. Mission Description and Budget Item Justification

Overall, the PE funds on-going sustainment, maintenance, and upgrade of Multi-Platform Electronic Attack (EA) jamming pods and associated combat test equipment as well as sustainment of various other Electronic Warfare equipment. Specifically, this program provides procurement, research and development, and operations and maintenance for sustaining the ALQ-131 and ALQ-184 EA jamming pods. These pods are the sole self-protection jamming systems for US Air Force A-10 aircraft and most models of the F-16 aircraft.

This upgrade to the ALQ-131 is necessary to keep pace with adversary technological advances in surface-to-air and air-to-air missile systems. Digital Radio Frequency Memory (DRFM) allows an electronic system to digitally record and store characteristics of received signals in order to produce a jamming pulse that more precisely replicates the threat systems pulse. With the current/near term threat systems the A-10 and F-16 are likely to encounter, this level of fidelity is necessary to effectively protect these aircraft in this increasingly lethal environment.

This PE is in Budget Activity 7 - Operational System Development because it supports upgrade development of the ALQ-131, a fielded system.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207040F: <i>Multi-Platform Electronics</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	14.747	0.000	0.000	0.000
Current President's Budget	0.000	14.747	15.574	0.000	15.574
Total Adjustments	0.000	0.000	15.574	0.000	15.574
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	15.574	0.000	15.574

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207040F: <i>Multi-Platform Electronics</i>	PROJECT 675310: <i>EA Pod DRFM Upgrade</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675310: <i>EA Pod DRFM Upgrade</i>	0.000	14.747	15.574	0.000	15.574	0.000	0.000	0.000	0.000	0.000	30.359
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Overall, the PE funds on-going sustainment, maintenance, and upgrade of Multi-Platform Electronic Attack (EA) jamming pods and associated combat test equipment as well as sustainment of various other Electronic Warfare equipment. Specifically, this program provides procurement, research and development, and operations and maintenance for sustaining the ALQ-131 and ALQ-184 EA jamming pods. These pods are the sole self-protection jamming systems for US Air Force A-10 aircraft and most models of the F-16 aircraft.

This upgrade to the ALQ-131 is necessary to keep pace with adversary technological advances in surface-to-air and air-to-air missile systems. Digital Radio Frequency Memory (DRFM) allows an electronic system to digitally record and store characteristics of received signals in order to produce a jamming pulse that more precisely replicates the threat systems pulse. With the current/near term threat systems the A-10 and F-16 are likely to encounter, this level of fidelity is necessary to effectively protect these aircraft in this increasingly lethal environment.

This PE is in Budget Activity 7 - Operational System Development because it supports upgrade development of the ALQ-131, a fielded system.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: ALQ-131 DRFM SDD	0.000	14.747	15.574	0.000	15.574
<i>FY 2009 Accomplishments:</i> In FY 2009: Not Applicable.					
<i>FY 2010 Plans:</i> In FY 2010: Continuation of above listed activities					

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010							
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207040F: <i>Multi-Platform Electronics</i>		PROJECT 675310: <i>EA Pod DRFM Upgrade</i>							
B. Accomplishments/Planned Program (\$ in Millions)											
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total			
<p><i>FY 2011 Base Plans:</i> In FY 2011: Continuation of above listed activities</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>											
Accomplishments/Planned Programs Subtotals				0.000	14.747	15.574	0.000	15.574			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 27040F: <i>ALQ-131 DRFM Kits</i> <i>(BP19) APAF</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
D. Acquisition Strategy											
All major contracts within this project will be awarded through full and open competition.											
E. Performance Metrics											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207040F: <i>Multi-Platform Electronics</i>	PROJECT 675310: <i>EA Pod DRFM Upgrade</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Robins AFB	TBD/TBD	TBD TBD	0.000	9.747		15.574		0.000		15.574	Continuing	Continuing	18.000
Subtotal			0.000	9.747		15.574		0.000		15.574			18.000

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Robins AFB	TBD/TBD	TBD TBD	0.000	5.000		0.000		0.000		0.000	0.000	5.000	13.000
Subtotal			0.000	5.000		0.000		0.000		0.000	0.000	5.000	13.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		0.000	14.747	15.574	0.000	15.574		31.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

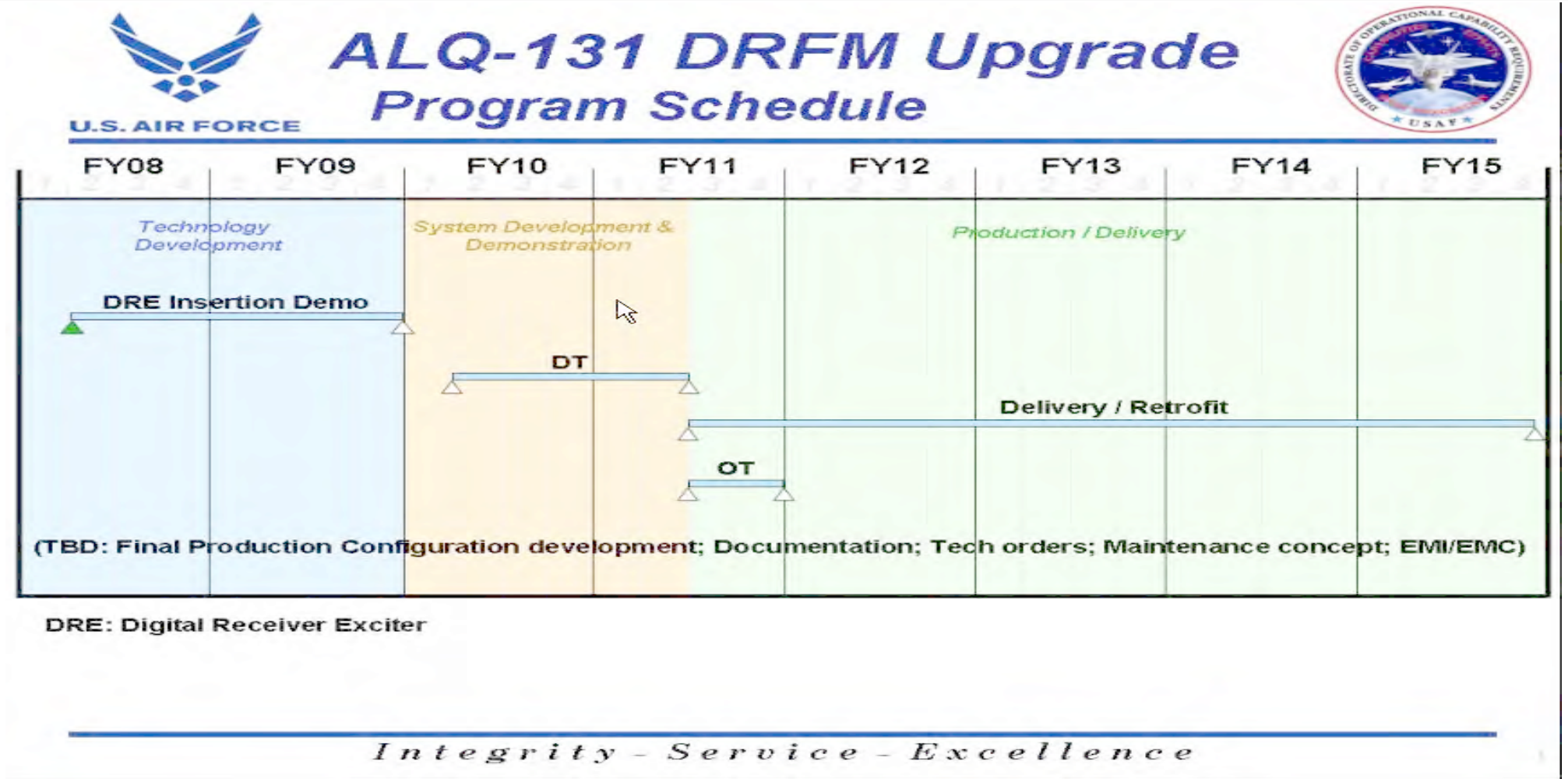
UNCLASSIFIED

R-1 Line Item #129

Page 5 of 7

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207040F: <i>Multi-Platform Electronics</i>	PROJECT 675310: <i>EA Pod DRFM Upgrade</i>



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207040F: *Multi-Platform Electronics*

PROJECT

675310: *EA Pod DRFM Upgrade*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Develomental Testing	1	2010	3	2011
Operational Testing	2	2010	4	2011
Delivery and Retrofit of Pods Start	2	2010	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207131F: <i>A-10 SQUADRONS</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	3.989	12.197	5.661	0.000	5.661	5.750	5.987	6.075	6.160	Continuing	Continuing
674809: <i>A-10 Squadrons</i>	3.989	12.197	5.661	0.000	5.661	5.750	5.987	6.075	6.160	Continuing	Continuing

Note

Note 1: In FY 2009 Congress added \$4.0M for Helmet Mounted Cuing System (HMCS). The title of the Add specified Scorpion HMCS, a brand name. The A-10 program has not selected a vendor for this effort, so the funds have not been obligated or expended.

Note 2: In FY 2010 Congress added \$2.5M for CAD/CAM Aircraft Structural Overhaul Work Center. A government-industry team will develop new repair procedures utilizing CAD/CAM technology.

A. Mission Description and Budget Item Justification

The concept of operations for the A-10 requires an agile and survivable weapon system that provides close-air support, combat search and rescue, and special operations support. The high operations tempo maintained by the Expeditionary Air Force requires that each combat platform exhibit the flexibility to effectively perform in a variety of operational roles. To implement these strategies, Combat Air Forces (CAF) must be able to conduct air operations around-the-clock under various weather conditions against numerous enemy threats employing a full spectrum of air defense systems to include countermeasures.

The A-10 is an essential component of successful air operations, and represents a significant percentage of the CAF force structure with 356 aircraft currently in service (plus one ground training aircraft). FY 2010 President's Budget (PB) projected the retirement of three aircraft in FY 2010. An additional six aircraft are projected for retirement in FY 2013.

FY 2011 RDT&E funds address continuing user requirements that need to be incorporated within the Operational Flight Program (OFP). Each year user developmental requirements are formally reviewed for incorporation in the annual aircraft OFP release cycle to bring new capability to the A-10 and to fix both hardware and software OFP deficiencies. The A-10 weapon system's attributes include excellent low speed maneuverability, high weapons payload, long loiter time, very high tolerance to battle damage, and the lowest cost per flying hour of any CAF fighter. The A-10 weapon system is the Air Force's most effective Close Air Support (CAS) and anti-armor platform.

UNCLASSIFIED

R-1 Line Item #130

Page 1 of 13

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207131F: <i>A-10 SQUADRONS</i>
--	--

Results of previously planned developmental and modernization actions provide the A-10 with new combat capabilities that employ a variety of smart weapons, improved situational awareness, increased service life to the wing and fuselage, and enhanced target identification and designation capability. The funds budgeted in the near term will provide updates to the aircraft OFP in Suites 6 and 7 and will address continued integration of Precision Engagement capabilities, for example J-Series and Variable Message Format (VMF) messages, and incorporation of Mode 5. Later in the Future Years Defense Program, subsequent OFP Suites are projected to incorporate additional functionality and capabilities such as electronic warfare, cursor on target and evolving targeting pod capabilities.

Ongoing planning and associated activities will continue to take place to prevent and overcome diminishing manufacturing sources and obsolescence issues as required.

This program is in Budget Activity 07 - Operational System Development because it supports a fielded weapon system.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	3.989	9.697	0.000	0.000	0.000
Current President's Budget	3.989	12.197	5.661	0.000	5.661
Total Adjustments	0.000	2.500	5.661	0.000	5.661
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		2.500			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	5.661	0.000	5.661

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 674809: *A-10 Squadrons*

Congressional Add: *Helmet Mounted Cueing System*

Congressional Add: *CAD CAM Aircraft Structural Overhaul Work Center*

Congressional Add Subtotals for Project: 674809

	<u>FY 2009</u>	<u>FY 2010</u>
	3.989	0.000
	0.000	2.500
Congressional Add Subtotals for Project: 674809	3.989	2.500

UNCLASSIFIED

R-1 Line Item #130

Page 2 of 13

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207131F: <i>A-10 SQUADRONS</i>
--	--

Congressional Add Details (\$ in Millions, and Includes General Reductions)	FY 2009	FY 2010
Congressional Add Totals for all Projects	3.989	2.500

Change Summary Explanation

Note 1: The FY 2010, Congress added \$2.5 million for a CAD/CAM Aircraft Structural Overhaul Work Center.

Note 2: The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207131F: <i>A-10 SQUADRONS</i>	PROJECT 674809: <i>A-10 Squadrons</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674809: <i>A-10 Squadrons</i>	3.989	12.197	5.661	0.000	5.661	5.750	5.987	6.075	6.160	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Note 1: In FY 2009, Congress added \$4.0M for Helmet Mounted Cuing System (HMCS). The title of the Add specified Scorpion HMCS, a brand name. The A-10 program has not selected a vendor for this effort, so the funds have not been obligated or expended.

Note 2: In FY 2010, Congress added \$2.5M for CAD/CAM Aircraft Structural Overhaul Work Center. A government-industry team will develop new repair procedures utilizing CAD/CAM technology.

A. Mission Description and Budget Item Justification

The concept of operations for the A-10 requires an agile and survivable weapon system that provides close-air support, combat search and rescue, and special operations support. The high operations tempo maintained by the Expeditionary Air Force requires that each combat platform exhibit the flexibility to effectively perform in a variety of operational roles. To implement these strategies, Combat Air Forces (CAF) must be able to conduct air operations around-the-clock under various weather conditions against numerous enemy threats employing a full spectrum of air defense systems to include countermeasures.

The A-10 is an essential component of successful air operations, and represents a significant percentage of the CAF force structure with 356 aircraft currently in service (plus one ground training aircraft). FY 2010 President's Budget (PB) projected the retirement of three aircraft in FY 2010. An additional six aircraft are projected for retirement in FY 2013.

FY 2011 RDT&E funds address continuing user requirements that need to be incorporated within the Operational Flight Program (OFP). Each year user developmental requirements are formally reviewed for incorporation in the annual aircraft OFP release cycle to bring new capability to the A-10 and to fix both hardware and software OFP deficiencies. The A-10 weapon system's attributes include excellent low speed maneuverability, high weapons payload, long loiter time, very high tolerance to battle damage, and the lowest cost per flying hour of any CAF fighter. The A-10 weapon system is the Air Force's most effective Close Air Support (CAS) and anti-armor platform.

Results of previously planned developmental and modernization actions provide the A-10 with new combat capabilities that employ a variety of smart weapons, improved situational awareness, increased service life to the wing and fuselage, and enhanced target identification and designation capability. The funds budgeted in the near term will provide updates to the aircraft OFP in Suites 6 and 7 and will address continued integration of Precision Engagement capabilities, for example

UNCLASSIFIED

R-1 Line Item #130

Page 4 of 13

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207131F: <i>A-10 SQUADRONS</i>		PROJECT 674809: <i>A-10 Squadrons</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: A-10C OFP Suite software is updated on an annual release cycle to permit rapid integration of new precision weapons, advanced targeting pods, improved avionics, and enhanced EW capabilities. These efforts are in response to Combatant Command Urgent Operational Needs and evolving mission needs in the ever-changing operational environment of close air support.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: A-10C OFP Suite software is updated on an annual release cycle to permit rapid integration of new precision weapons, advanced targeting pods, improved avionics, and enhanced EW capabilities. These efforts are in response to Combatant Command Urgent Operational Needs and evolving mission needs in the ever-changing operational environment of close air support.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable</p>								
Accomplishments/Planned Programs Subtotals				0.000	9.697	5.661	0.000	5.661
				FY 2009	FY 2010			
<p>Congressional Add: Helmet Mounted Cueing System</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: The Helmet Mounted Cueing System (HMCS) is an electro-optical device for displaying information on a visor in the pilot's line of sight during daytime and nighttime operations. The HMCS provides the pilot with the capability to cue the aircraft sensor suite and weapons outside of the Heads Up Display (HUD) field of view and provides sensor and weapon data feedback to the pilot. Along with the new helmet system, the HMCS program will also provide the capability for future upgrades to the flat-panel display incorporated into the helmet.</p>				3.989	0.000			

UNCLASSIFIED

R-1 Line Item #130

Page 6 of 13

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207131F: <i>A-10 SQUADRONS</i>	PROJECT 674809: <i>A-10 Squadrons</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
<i>FY 2010 Plans:</i> In FY 2010: Not Applicable		
Congressional Add: CAD CAM Aircraft Structural Overhaul Work Center <i>FY 2009 Accomplishments:</i> In FY 2009: Not Applicable <i>FY 2010 Plans:</i> In FY 2010: A government-industry team will develop new repair procedures utilizing CAD/CAM technology. The program will build upon a successful exploratory program for B-52 engine structural overhaul to enable the Hill Air Force Base (AFB) A-10 System Program Office and Mission Support Inc. to identify existing structural overhaul requirements for the A-10 that have extensive tooling requirements or are experiencing delays associated with tooling availability.	0.000	2.500
Congressional Adds Subtotals	3.989	2.500

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207131F: <i>A-10 Squadrons</i>	145.143	252.761	164.681	16.500	181.181	155.143	148.843	137.847	0.000	0.000	0.000
• PE 0207445F: <i>Fighter Tactical</i>	5.788	8.921	0.680	0.000	0.680	0.675	0.000	0.000	0.000	0.000	0.000
<i>Data Link</i>											

D. Acquisition Strategy

Helmet Mounted Cuing System (HMCS) acquisition strategy was developed with the F-16 SPO at Hill AFB to support both A-10 and F-16 requirements. The Request for Proposal was released to industry September 2009. Program is currently in source selection with estimated April 2010 contract award.

UNCLASSIFIED

R-1 Line Item #130

Page 7 of 13

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207131F: <i>A-10 SQUADRONS</i>	PROJECT 674809: <i>A-10 Squadrons</i>
<p>Computer Aided Design/Computer Aided Manufacture (CAD/CAM) Aircraft Structural Overhaul Work Center acquisition strategy is to award a sole source Small Business Set-Aside contract to Mission Support, Inc. The contract will describe the requirements for identifying existing structural overhaul activities for the A-10 that need tooling developed. Expedited tooling development will reduce production delays during parts remanufacturing and thus improve aircraft overhaul throughput and availability.</p> <p>MODE 5 acquisition strategy is being developed to meet Air Force directives.</p> <p>Prior to FY 2009, A-10 development efforts were conducted under the A-10 Prime Contract awarded to Lockheed Martin Systems Integration (LMSI) in December 1997 through a full-and-open competition. The original period of performance/ordering period ended in December 2006. A bridge contract was awarded with an ordering period through March 2010. Following the FY 2010 Suite 7 award scheduled for January 2010, subsequent development efforts are being considered for transfer to government (organic) sources in accordance with a September 2009 Source of Repair decision by Air Force Materiel Command.</p> <p>E. Performance Metrics</p> <p>Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.</p>		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207131F: <i>A-10 SQUADRONS</i>				PROJECT 674809: <i>A-10 Squadrons</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Precision Engagement Development	SS/CPIF	Lockheed Martin Systems Integration (LMSI) Owego NY	130.227	0.000		0.000		0.000		0.000	0.000	130.227	0.000
Helmet Mounted Cueing System	C/Various	TBD TBD	3.989	0.000		0.000		0.000		0.000	0.000	3.989	0.000
Mode 5 (IFF)	TBD/TBD	TBD TBD	0.000	2.970	Jan 2010	0.000		0.000		0.000	0.000	2.970	0.000
OFP Development (LMSI)	SS/Various	LMSI Owego NY	0.000	5.764	Jan 2010	4.353	Nov 2010	0.000		4.353	0.000	10.117	0.000
OFP Development (Organic)	TBD/TBD	TBD TBD	0.000	0.000		0.500	Dec 2010	0.000		0.500	0.000	0.500	0.000
CAD/CAM Aircraft Structural Overhaul Work Center	SS/TBD	Mission Support, Inc Clearfield, UT	0.000	2.500		0.000		0.000		0.000	0.000	2.500	0.000
Subtotal			134.216	11.234		4.853		0.000		4.853	0.000	150.303	0.000

Remarks

--

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207131F: <i>A-10 SQUADRONS</i>	PROJECT 674809: <i>A-10 Squadrons</i>
--	--	---

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
USAF (Multiple)	Various/ Various	Various Various	3.574	0.963	Jan 2010	0.808	Nov 2010	0.000		0.808	0.000	5.345	0.000
Subtotal			3.574	0.963		0.808		0.000		0.808	0.000	5.345	0.000

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
USAF (OFF)	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

Test and Evaluation costs are included in the "Support" line

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	137.790	12.197		5.661		0.000		5.661	0.000	155.648	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207131F: <i>A-10 SQUADRONS</i>	PROJECT 674809: <i>A-10 Squadrons</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	---------------------------	---------	-----------------	----------------	------------------	---------------------	------------	--------------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY
 3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0207131F: *A-10 SQUADRONS*

PROJECT
 674809: *A-10 Squadrons*

A-10 Master Schedule (PEC 0207131F)

	FY 2009				FY 2010				FY 2011				FY 2012	FY 2013	FY 2014	FY 2015
	1	2	3	4	1	2	3	4	1	2	3	4				
Suite 6 SDD & Test OFF Fielding	R&D / Development / Integration / Flight Test															
Suite 7 SDD & Test OFF Fielding	R&D / Development / Integration / Test															
Mode 5 (IFF)																
HMCS																
CAD/CAM																
Suite 8 SDD & Test OFF Fielding																
Suite 9 SDD & Test OFF Fielding																
Suite 10 SDD & Test OFF Fielding																
Suites 11 and beyond field on a yearly basis similar to Suite 10																

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207131F: <i>A-10 SQUADRONS</i>	PROJECT 674809: <i>A-10 Squadrons</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Suite 6 OFP System Design, Development & Flight Test	1	2009	3	2010
Suite 6 OFP Fields	3	2010	3	2010
Suite 7 OFP System Design, Development & Flight Test	1	2009	3	2011
Suite 7 Fields	3	2011	3	2011
Mode 5 (IFF) Integration	2	2010	4	2010
Helmet Mounted Cueing System	3	2010	2	2011
CAD/CAM Aircraft Structural Overhaul Work Center	2	2010	2	2011
Suite 8 OFP System Design, Development & Flight Test	4	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207133F: <i>F-16 SQUADRONS</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	123.733	142.620	129.103	0.000	129.103	110.939	112.632	109.054	110.659	Continuing	Continuing
672671: <i>F-16 Squadrons</i>	123.733	142.620	129.103	0.000	129.103	110.939	112.632	109.054	110.659	Continuing	Continuing

A. Mission Description and Budget Item Justification

The F-16 Fighting Falcon is the world's premier multi-mission fighter. It is a fixed-wing, high performance, single-engine fighter aircraft. In its 31-year history, the F-16 has proven itself in combat in a variety of air-to-air and air-to-surface missions such as close air support, combat air patrol, forward air control, battle air interdiction (day/night and all-weather) and suppression of enemy air defenses (SEAD)/Destruction of enemy air defenses (DEAD). Also during these years the aircraft has evolved in its capabilities to exploit the advances made in computer, avionics systems, engine, and structures technologies. The F-16 has been selected by more than 20 air forces around the world and foreign military sales production continues in the 21st century. The 312th Aeronautical Systems Group (312 AESG, the F-16 Development Management Office) develops, integrates, and qualifies systems to enhance the overall performance of the F-16 mission.

Enhancements which are being or will be developed during the FYDP include:

a. Operational Flight Program (OFP) Development: Blk 40-52 OFP (M-tapes) are updated continually to integrate new precision weapons, advanced targeting pods, improved avionics and other HW Group B subsystems. Major tapes (e.g., M5/M5+) are released every three years and a minor tape (e.g., M5.2+) is released 1 year after each major tape. The European Participating Air Forces (EPAF) countries participate in the development of M tapes and share the cost of developing common capabilities and totally fund development of their unique capabilities. Generally, three major or minor tapes are under development/testing at any one time. Extensive ground and flight testing is required to field each M tape. Integration efforts include Auto Ground Collision Avoidance System (Auto GCAS), software upgrades to the ALR-56M Radar Warning Receiver, manned fighter reconnaissance capabilities and Joint Helmet Mounted Cueing System (JHMCS) which allows the pilot to designate and shoot targets off-bore sight without maneuvering the aircraft. Advanced weapons integration includes Joint Air-to-Surface Stand-off Missile (JASSM) and Joint Direct Attack Munition (JDAM, Laser JDAM), Joint Stand-off Weapon (JSOW), Wind Corrected Munition Dispenser (WCMD), Small Diameter Bomb (SDB), AMRAAM, AIM-9X and updates to existing weapons into the F-16. Integration with the high angle off-bore sight AIM-9X missile provides the F-16 with enhanced first-look/first-shoot/first-kill advantage in the "dogfight" arena. Weapons integration also includes tasks such as performing risk reduction activities on advanced weapon integration, developing and integrating advanced racks, pylons, adapters, and the Universal Armament Interface, and ensuring nuclear surety, safety and compatibility. Link 16 provides the F-16s with a secure, jam resistant, high-capacity data communications link with other combat aircraft, airborne control aircraft, and ground control centers. Major new capabilities currently being integrated via M tapes include embedded GPS/INS to improve targeting accuracy and GPS security (i.e. selective availability anti-spoofing module), common weapons engagement zone, EGBU-12 (lazer/GPS guided bomb), mode 5 IFF, small diameter bomb with universal armament interface, AIM-120D, and joint mission planning system. Starting with M6/M6+ OFP, LM Aero will start transition activities for OFP workload and maintenance of M-series

UNCLASSIFIED

R-1 Line Item #131

Page 1 of 17

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207133F: <i>F-16 SQUADRONS</i>	
<p>OFP tapes to OO-ALC and assumes a "leader/follower" transition where LM Aero will produce M6/M6+ OFP as OO-ALC builds up capability (personnel, special test equipment, OFP development tools & processes, and training). OO-ALC will have software development responsibility for the next M-series OFP program (M7+). During transition, both Lockheed and Ogden may have some concurrent software development capabilities both in terms of special test equipment and personnel since OFP tape developments overlap. This funding is broken out through FY09 for clarity to separate these transition efforts from OFP Development.</p> <p>b. The Mode 5 program for Blk 40/50 aircraft provides secure, encrypted IFF transponder/interrogator capability. Modifications to the Air-to Air Interrogator (AAI) system through integration of a Mode 5 capable Combined Interrogator/Transponder (CIT) capability will field with M6+ OFP.</p> <p>c. Structural Fatigue Test: Initiate Full Scale Fatigue testing on F-16 40-50 A/C. The F 16 is operating under increased risk of unanticipated damage without this testing. Much of the current F 16 fleet is aging beyond the tested lifetime. Additionally, safe life extension past 8K hours is not feasible without this needed testing. Impact if not funded: Increased risk of unanticipated damage and higher probability of in flight failures, increased groundings, maintenance, and repair costs.</p> <p>d. Thunder Radar Pod: This is a development effort to procure one Thunder Radar Pod and associated equipment for testing. Funding provided by an FY09 and FY10 Congressional adds.</p> <p>e. EMD Hardware/Advanced Capability Improvements: EMD HW provides funding to develop, test, and qualify aircraft subsystems replaced or modified due to requirements changes, Pre-Planned Product Improvements (P3I) and Diminishing Manufacturing Source (DMS). The approach to contracting varies by individual project. These hardware improvements include but are not limited to flight systems, improved navigation, mux architecture, MMC upgrade, Embedded GPS/INS, Blk 40 Air-to-Air Interrogator (AAI), digital video recorder, Advanced Data Transfer Equipment (ADTE) and related data transfer devices, display upgrades, radio and communication studies, Electronic Warfare (EW), CAS Data Link and other subsystems. Advanced Capability Improvements includes software integration, sensor upgrades, enhanced self-protection/electronic protection (EP), 4th/5th gen fighter network communications, lab and/or on-aircraft evaluation of potential subsystem changes/capability improvements on the F-16 as well as establishment of associated requirement specification changes. These capability improvements also fund integration of pods including updates and tech order changes (SNIPER, LANTIRN, HTS, LITENING, THUNDER POD, Theatre Air Reconnaissance System (TARS/RECCE) etc.</p> <p>f. Beyond Line-of-Sight (BLOS) Communication Capability: The BLOS communication capability modification is in response to the revised AFCENT Urgent Operational Need to install BLOS capability in all fighter aircraft deploying in support of OIF/OEF. This modification will provide a satellite communication (SATCOM) capability to communicate with many rotary wing and ground maneuver units in the theater of operations. BLOS development for Blocks 30/32 received an OMNIBUS reprogramming and funding to initiate Blocks 40-52 development/integration was provided in the FY08 Supplemental Bill.</p>		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207133F: <i>F-16 SQUADRONS</i>
--	--

Since the development activities in this PE support an operational aircraft, these development activities are funded in the operational system development budget activity 7.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	126.834	141.020	0.000	0.000	0.000
Current President's Budget	123.733	142.620	129.103	0.000	129.103
Total Adjustments	-3.101	1.600	129.103	0.000	129.103
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		1.600			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-3.101	0.000			
• Other Adjustments	0.000	0.000	129.103	0.000	129.103

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 672671: *F-16 Squadrons*

Congressional Add: *Plus up/Thunder Pod*

Congressional Add Subtotals for Project: 672671

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	3.191	1.600
	3.191	1.600
	3.191	1.600

Change Summary Explanation

FY10: \$1.6M Congressional Add for Thunder Pod. The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner."

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207133F: <i>F-16 SQUADRONS</i>	PROJECT 672671: <i>F-16 Squadrons</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
672671: <i>F-16 Squadrons</i>	123.733	142.620	129.103	0.000	129.103	110.939	112.632	109.054	110.659	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The F-16 Fighting Falcon is the world's premier multi-mission fighter. It is a fixed-wing, high performance, single-engine fighter aircraft. In its 31-year history, the F-16 has proven itself in combat in a variety of air-to-air and air-to-surface missions such as close air support, combat air patrol, forward air control, battle air interdiction (day/night and all-weather) and suppression of enemy air defenses (SEAD)/Destruction of enemy air defenses (DEAD). Also during these years the aircraft has evolved in its capabilities to exploit the advances made in computer, avionics systems, engine, and structures technologies. The F-16 has been selected by more than 20 air forces around the world and foreign military sales production continues in the 21st century. The 312th Aeronautical Systems Group (312 AESG, the F-16 Development Management Office) develops, integrates, and qualifies systems to enhance the overall performance of the F-16 mission.

Enhancements which are being or will be developed during the FYDP include:

a. Operational Flight Program (OFP) Development: Blk 40-52 OFP (M-tapes) are updated continually to integrate new precision weapons, advanced targeting pods, improved avionics and other HW Group B subsystems. Major tapes (e.g., M5/M5+) are released every three years and a minor tape (e.g., M5.2+) is released 1 year after each major tape. The European Participating Air Forces (EPAF) countries participate in the development of M tapes and share the cost of developing common capabilities and totally fund development of their unique capabilities. Generally, three major or minor tapes are under development/testing at any one time. Extensive ground and flight testing is required to field each M tape. Integration efforts include Auto Ground Collision Avoidance System (Auto GCAS), software upgrades to the ALR-56M Radar Warning Receiver, manned fighter reconnaissance capabilities and Joint Helmet Mounted Cueing System (JHMCS) which allows the pilot to designate and shoot targets off-bore sight without maneuvering the aircraft. Advanced weapons integration includes Joint Air-to-Surface Stand-off Missile (JASSM) and Joint Direct Attack Munition (JDAM, Laser JDAM), Joint Stand-off Weapon (JSOW), Wind Corrected Munition Dispenser (WCMD), Small Diameter Bomb (SDB), AMRAAM, AIM-9X and updates to existing weapons into the F-16. Integration with the high angle off-bore sight AIM-9X missile provides the F-16 with enhanced first-look/first-shoot/first-kill advantage in the "dogfight" arena. Weapons integration also includes tasks such as performing risk reduction activities on advanced weapon integration, developing and integrating advanced racks, pylons, adapters, and the Universal Armament Interface, and ensuring nuclear surety, safety and compatibility. Link 16 provides the F-16s with a secure, jam resistant, high-capacity data communications link with other combat aircraft, airborne control aircraft, and ground control centers. Major new capabilities currently being integrated via M tapes include embedded GPS/INS to improve targeting accuracy and GPS security (i.e. selective availability anti-spoofing module), common weapons engagement zone, EGBU-12 (lazer/GPS guided bomb), mode 5 IFF, small diameter bomb with universal armament interface, AIM-120D, and joint mission planning system. Starting with M6/M6+ OFP, LM Aero will start transition activities for OFP workload and maintenance of M-series

UNCLASSIFIED

R-1 Line Item #131

Page 4 of 17

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207133F: <i>F-16 SQUADRONS</i>	PROJECT 672671: <i>F-16 Squadrons</i>
<p>OFP tapes to OO-ALC and assumes a "leader/follower" transition where LM Aero will produce M6/M6+ OFP as OO-ALC builds up capability (personnel, special test equipment, OFP development tools & processes, and training). OO-ALC will have software development responsibility for the next M-series OFP program (M7+). During transition, both Lockheed and Ogden may have some concurrent software development capabilities both in terms of special test equipment and personnel since OFP tape developments overlap. This funding is broken out through FY09 for clarity to separate these transition efforts from OFP Development.</p> <p>b. The Mode 5 program for Blk 40/50 aircraft provides secure, encrypted IFF transponder/interrogator capability. Modifications to the Air-to Air Interrogator (AAI) system through integration of a Mode 5 capable Combined Interrogator/Transponder (CIT) capability will field with M6+ OFP.</p> <p>c. Structural Fatigue Test: Initiate Full Scale Fatigue testing on F-16 40-50 A/C. The F 16 is operating under increased risk of unanticipated damage without this testing. Much of the current F 16 fleet is aging beyond the tested lifetime. Additionally, safe life extension past 8K hours is not feasible without this needed testing. Impact if not funded: Increased risk of unanticipated damage and higher probability of in flight failures, increased groundings, maintenance, and repair costs.</p> <p>d. Thunder Radar Pod: This is a development effort to procure one Thunder Radar Pod and associated equipment for testing. Funding provided by an FY09 and FY10 Congressional adds.</p> <p>e. EMD Hardware/Advanced Capability Improvements: EMD HW provides funding to develop, test, and qualify aircraft subsystems replaced or modified due to requirements changes, Pre-Planned Product Improvements (P3I) and Diminishing Manufacturing Source (DMS). The approach to contracting varies by individual project. These hardware improvements include but are not limited to flight systems, improved navigation, mux architecture, MMC upgrade, Embedded GPS/INS, Blk 40 Air-to-Air Interrogator (AAI), digital video recorder, Advanced Data Transfer Equipment (ADTE) and related data transfer devices, display upgrades, radio and communication studies, Electronic Warfare (EW), CAS Data Link and other subsystems. Advanced Capability Improvements includes software integration, sensor upgrades, enhanced self-protection/electronic protection (EP), 4th/5th gen fighter network communications, lab and/or on-aircraft evaluation of potential subsystem changes/capability improvements on the F-16 as well as establishment of associated requirement specification changes. These capability improvements also fund integration of pods including updates and tech order changes (SNIPER, LANTIRN, HTS, LITENING, THUNDER POD, Theatre Air Reconnaissance System (TARS/RECCE) etc.</p> <p>f. Beyond Line-of-Sight (BLOS) Communication Capability: The BLOS communication capability modification is in response to the revised AFCENT Urgent Operational Need to install BLOS capability in all fighter aircraft deploying in support of OIF/OEF. This modification will provide a satellite communication (SATCOM) capability to communicate with many rotary wing and ground maneuver units in the theater of operations. BLOS development for Blocks 30/32 received an OMNIBUS reprogramming and funding to initiate Blocks 40-52 development/integration was provided in the FY08 Supplemental Bill.</p>		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010																			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207133F: <i>F-16 SQUADRONS</i>		PROJECT 672671: <i>F-16 Squadrons</i>																			
B. Accomplishments/Planned Program (\$ in Millions)																							
<table border="1"> <thead> <tr> <th></th> <th>FY 2009</th> <th>FY 2010</th> <th>FY 2011 Base</th> <th>FY 2011 OCO</th> <th>FY 2011 Total</th> </tr> </thead> <tbody> <tr> <td> <p>activities that will be performed as part of Phase II development at Ogden including cost and schedule milestones.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: For the M5.2+ OFP minor release, accomplish operational flight testing, develop technical orders, receive the OFP and data from the vendor, as well as obtain ACC approval to field the M5.2+ Minor Tape OFP which completes the M5+ program. M6.1+ OFP major release, completing the final software design and software development activity and continuing the System Integration Lab and Developmental Flight Testing. Three meetings with the pilots will be held to determine the priorities and detailed design of the M7+ candidates. The 312th will contract with LM Aero to do requirements definition for common development. OO-ALC and the 312th will document agreements on activities that will be performed as part of M7+ Phase III development efforts starting in FY12 at OO-ALC. Final SIL HW asset requirements will be procured as part of the transition of the OFP from LM Aero to OO-ALC.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p> </td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> <p>MAJOR THRUST: Continue Flight Test DT&E-funds F-16 test & evaluation at the Combined Test Facility, tests subsystem & weapon integration with F-16 OFPs</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: F-16 Baseline Flight Test funds F-16 test and evaluation at the Combined Test Facility (CTF) at Edwards AFB for Developmental Test (DT) including integration test of associated subsystems and weapons. Includes flight test activities to maintain test schedule for F-16 Block 40/50 Operational Flight Programs (OFPs), weapons integration, and systems to ensure capabilities meet ACC 's fielding schedule. FY09 funding supports CTF infrastructure (Government and Contractor) and DT flight sorties for Block 40/50 M5.1+ OFP DT&E and combined DT/OT, M4.3+ weapons/subsystem regression for JDAM , AIM-9X and AIM-120, and M6+ DT&E risk reduction.</p> </td> <td align="right">23.832</td> <td align="right">25.741</td> <td align="right">24.106</td> <td align="right">0.000</td> <td align="right">24.106</td> </tr> </tbody> </table>							FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	<p>activities that will be performed as part of Phase II development at Ogden including cost and schedule milestones.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: For the M5.2+ OFP minor release, accomplish operational flight testing, develop technical orders, receive the OFP and data from the vendor, as well as obtain ACC approval to field the M5.2+ Minor Tape OFP which completes the M5+ program. M6.1+ OFP major release, completing the final software design and software development activity and continuing the System Integration Lab and Developmental Flight Testing. Three meetings with the pilots will be held to determine the priorities and detailed design of the M7+ candidates. The 312th will contract with LM Aero to do requirements definition for common development. OO-ALC and the 312th will document agreements on activities that will be performed as part of M7+ Phase III development efforts starting in FY12 at OO-ALC. Final SIL HW asset requirements will be procured as part of the transition of the OFP from LM Aero to OO-ALC.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>						<p>MAJOR THRUST: Continue Flight Test DT&E-funds F-16 test & evaluation at the Combined Test Facility, tests subsystem & weapon integration with F-16 OFPs</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: F-16 Baseline Flight Test funds F-16 test and evaluation at the Combined Test Facility (CTF) at Edwards AFB for Developmental Test (DT) including integration test of associated subsystems and weapons. Includes flight test activities to maintain test schedule for F-16 Block 40/50 Operational Flight Programs (OFPs), weapons integration, and systems to ensure capabilities meet ACC 's fielding schedule. FY09 funding supports CTF infrastructure (Government and Contractor) and DT flight sorties for Block 40/50 M5.1+ OFP DT&E and combined DT/OT, M4.3+ weapons/subsystem regression for JDAM , AIM-9X and AIM-120, and M6+ DT&E risk reduction.</p>	23.832	25.741	24.106	0.000	24.106
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total																		
<p>activities that will be performed as part of Phase II development at Ogden including cost and schedule milestones.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: For the M5.2+ OFP minor release, accomplish operational flight testing, develop technical orders, receive the OFP and data from the vendor, as well as obtain ACC approval to field the M5.2+ Minor Tape OFP which completes the M5+ program. M6.1+ OFP major release, completing the final software design and software development activity and continuing the System Integration Lab and Developmental Flight Testing. Three meetings with the pilots will be held to determine the priorities and detailed design of the M7+ candidates. The 312th will contract with LM Aero to do requirements definition for common development. OO-ALC and the 312th will document agreements on activities that will be performed as part of M7+ Phase III development efforts starting in FY12 at OO-ALC. Final SIL HW asset requirements will be procured as part of the transition of the OFP from LM Aero to OO-ALC.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>																							
<p>MAJOR THRUST: Continue Flight Test DT&E-funds F-16 test & evaluation at the Combined Test Facility, tests subsystem & weapon integration with F-16 OFPs</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: F-16 Baseline Flight Test funds F-16 test and evaluation at the Combined Test Facility (CTF) at Edwards AFB for Developmental Test (DT) including integration test of associated subsystems and weapons. Includes flight test activities to maintain test schedule for F-16 Block 40/50 Operational Flight Programs (OFPs), weapons integration, and systems to ensure capabilities meet ACC 's fielding schedule. FY09 funding supports CTF infrastructure (Government and Contractor) and DT flight sorties for Block 40/50 M5.1+ OFP DT&E and combined DT/OT, M4.3+ weapons/subsystem regression for JDAM , AIM-9X and AIM-120, and M6+ DT&E risk reduction.</p>	23.832	25.741	24.106	0.000	24.106																		

UNCLASSIFIED

R-1 Line Item #131

Page 7 of 17

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207133F: <i>F-16 SQUADRONS</i>	PROJECT 672671: <i>F-16 Squadrons</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Integrate MODE 5 IFF, APX-113-60 Integration activities and DoD AIMS & FAA interrogation management activities will continue.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011 Integrate MODE 5 IFF, APX-113-60 Not Applicable</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>						
<p>MAJOR THRUST: Full scale test of a Block 40/50 airframe to determine repairs/modifications required to extend the service life of the Block 40-52</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Not Applicable</p> <p><i>FY 2010 Plans:</i> In FY 2010: Not Applicable</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Initiate Full Scale Fatigue testing on F16 40-50 A/C.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>		0.000	0.000	20.000	0.000	20.000
<p>MAJOR THRUST: EMD HW/Advanced Capabilities Improvements provides funding to develop, test & qualify subsystems modified due to requirements changes, PPPI and DMS</p>		0.600	0.500	0.500	0.000	0.500

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207133F: <i>F-16 SQUADRONS</i>		PROJECT 672671: <i>F-16 Squadrons</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: BLOS RDTE funds required for contractor to support modification and installation of developed BLOS modification kits on designated test aircraft for operational flight test.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Not Applicable</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>								
Accomplishments/Planned Programs Subtotals				120.542	141.020	129.103	0.000	129.103
				FY 2009	FY 2010			
<p>Congressional Add: Plus up/Thunder Pod</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: This is a development effort to integrate Thunder Radar Pod and associated equipment onto the F-16 for testing.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continue development effort to integrate Thunder Radar Pod and associated equipment onto the F-16 for testing</p>				3.191	1.600			
Congressional Adds Subtotals				3.191	1.600			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207133F: <i>F-16 SQUADRONS</i>	PROJECT 672671: <i>F-16 Squadrons</i>

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0207133F: <i>Aircraft Procurement Line Item 40, F-16 Mods</i>	359.816	218.128	162.486	0.000	162.486	77.551	16.507	0.712	0.724	0.000	0.000
• PE 0207445F: <i>Aircraft Procurement Line Item 40, F-16 Mods</i>	0.000	0.000	0.000	0.000	0.000	3.872	3.861	3.926	7.252	0.000	0.000
• PE 0809731F: <i>Aircraft Procurement Line Item 40, F-16 Mods</i>	13.157	4.633	4.702	0.000	4.702	4.775	4.862	4.951	5.049	0.000	0.000
• PE 0207133F (1): <i>Aircraft Procurement, Line Item 89, Post Production Support</i>	2.269	12.910	17.838	0.000	17.838	15.989	16.230	16.395	16.668	0.000	0.000

D. Acquisition Strategy

RDT&E funds will primarily be executed in developing improved capability, maintenance and safety mods. Operational Flight Program (OFP) software will be continuously updated to complement mod development efforts. OFP transition activities to OO-ALC started in FY06 as part of the "follower/leader" effort with software development starting with M7+. The EMD Hardware Development line provides funding to develop, test, and qualify aircraft subsystems upgrades, communication upgrades and Diminishing Manufacturing Source (DMS). The approach to contracting varies by individual project. Lockheed Martin Aeronautics Company (LM Aero) is the prime contractor on all systems except the General Electric Engines and the Pratt & Whitney Engines. Contract types are T&M, CPIF, CPFF and FFP.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207133F: <i>F-16 SQUADRONS</i>	PROJECT 672671: <i>F-16 Squadrons</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OFP Updates	Various/ Various	Various Various	78.695	105.759	Oct 2009	84.497	Oct 2010	0.000		84.497	Continuing	Continuing	0.000
OFP Transition	Various/ Various	Various Various	7.745	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
Mode 5 IFF for CAF Aircraft	SS/CPIF	LM Aero Ft Worth, TX	9.100	7.520	Feb 2010	0.000		0.000		0.000	Continuing	Continuing	0.000
Structural Fatigue Test	SS/Various	LM Aero Ft Worth, TX	0.000	0.000		20.000	Jan 2011	0.000		20.000	Continuing	Continuing	0.000
EMD HW/Advanced Capabilities Improvements	SS/Various	LM Aero Ft Worth, TX	0.600	0.500	Mar 2010	0.500	Mar 2011	0.000		0.500	Continuing	Continuing	0.000
BLOS development/integration	Various/ Various	Various Various	0.570	1.500	Dec 2009	0.000		0.000		0.000	0.000	2.070	0.000
Plus up (Thunder Pods)	MIPR	OO-ALC OK	3.191	1.600	Sep 2010	0.000		0.000		0.000	0.000	4.791	0.000
Subtotal			99.901	116.879		104.997		0.000		104.997			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207133F: <i>F-16 SQUADRONS</i>	PROJECT 672671: <i>F-16 Squadrons</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Flight Tests	Various/ Various	Various Various	23.832	25.741	Oct 2009	24.106	Oct 2010	0.000		24.106	Continuing	Continuing	0.000
Subtotal			23.832	25.741		24.106		0.000		24.106			0.000

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Rescission	TBD/TBD	No text provided No text provided	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	123.733	142.620		129.103		0.000		129.103			0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

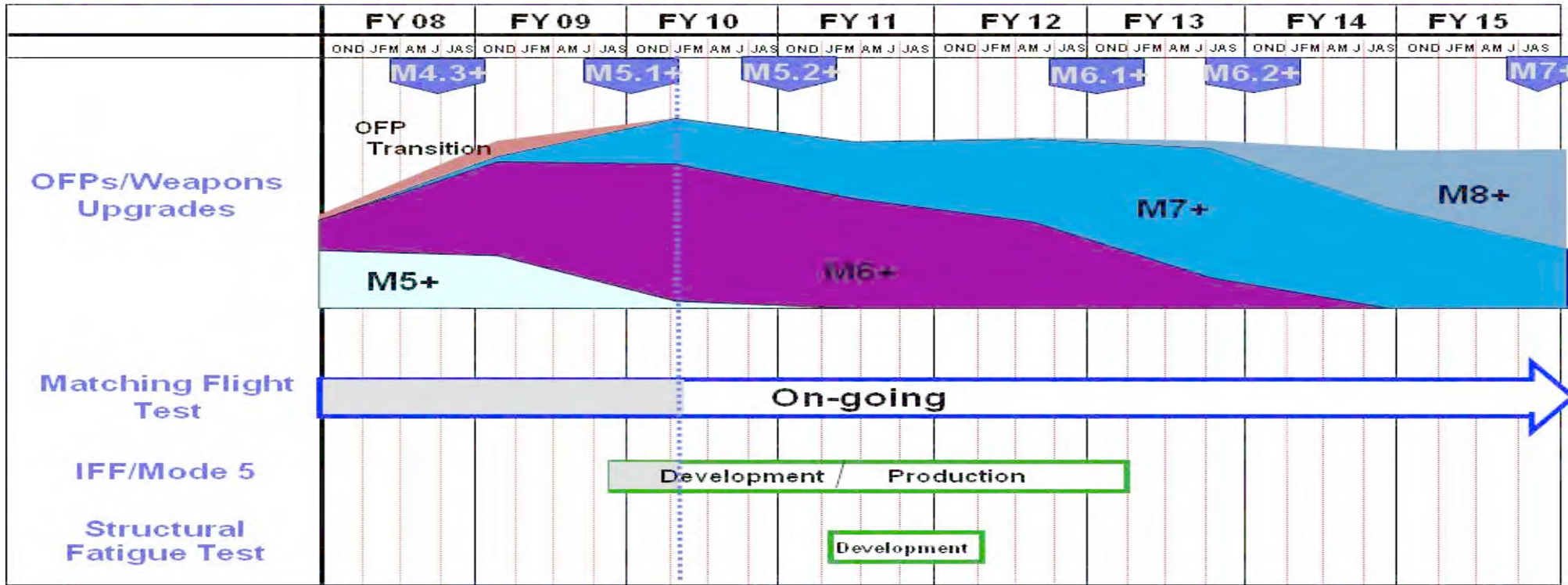
R-1 ITEM NOMENCLATURE
 PE 0207133F: F-16 SQUADRONS

PROJECT
 672671: F-16 Squadrons



F-16 Program Schedule - USAF

U.S. AIR FORCE



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207133F: <i>F-16 SQUADRONS</i>	PROJECT 672671: <i>F-16 Squadrons</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Flight Test Continuous	1	2009	4	2011
OFP Development, continuous	1	2009	4	2011
OFP Transition activities	1	2009	4	2009
Mode 5 IFF for CAF Aircraft	2	2009	4	2010
Structural Fatigue Test	2	2011	4	2011
EMD Hardware (continuous)	1	2009	4	2011
BLOS	1	2009	4	2010

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207134F: <i>F-15E SQUADRONS</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	203.816	319.967	222.677	0.000	222.677	212.203	144.264	124.999	118.285	Continuing	Continuing
670131: <i>Initial Operational Test and Evaluation</i>	203.816	319.967	222.677	0.000	222.677	212.203	144.264	124.999	118.285	0.000	0.000

Note

The F-15 program has one FY 2011 new start: F-15C/D Advanced Display Core Processor (ADCP+)with Vertical Situation Display to replace obsolete 25 MHz Central Computers.

A. Mission Description and Budget Item Justification

The F-15 is the most versatile fighter in the world today. The F-15A-D continues to provide air superiority with an undefeated and unmatched aerial combat record. The F-15E retains this air superiority capability and adds systems, such as advanced imaging and targeting systems, to meet the requirement for all-weather, deep penetration, and night/under-the-weather, air-to-surface attack. Configured with conformal fuel tanks (CFTs), the F-15E deploys worldwide with minimal tanker support and arrives combat-ready. A mainstay in operations both domestic and abroad, upgrades to the F-15 (avionics, armament, airframe, and engines) are critical to maintaining combat viability (lethality, survivability, and supportability).

Projected to remain in service past 2030, avionics modernization is key to long-term weapon system viability. This modernization is built on a foundation of technical studies (both internal to the Air Force and through outside contractors), forestalling obsolescence, exploiting proven technological advances, and leveraging new technology. Major avionics upgrades center around radar modernization (both hardware and software upgrades) and the exploitation of enhanced capability via wideband radome, precision timing, data delivery and processing technology, precision registration systems, cockpit Head Up Display (HUD) and instrumentation digitization and modernization, central computer processing power increases, digital mission event recording systems and an infrared (IR) based fire control system.

Funds are also used, as required, to resolve Diminishing Manufacturing Sources and Material Shortage (DMSMS) issues.

The proliferation of fourth generation enemy aircraft and sophisticated "double-digit" anti-aircraft missile systems pose a significant threat to F-15 survivability. A fully integrated electronic warfare suite holds the promise of providing survivability as well as expanded electronic attack capability.

Nearly all improvements are linked to an aircraft operational flight program update schedule that works to integrate new capabilities with the airframe. These updates are a responsive way to increase the offensive and defensive capability and survivability of the F-15. Given the comprehensiveness of these changes, significant flight test will be required. Incorporation of corresponding spiral and/or phased technology/equipment improvements that include support equipment, mission planning systems, and training device upgrades will improve performance, supportability, and line replaceable unit (LRU) throughput.

The F-15E program, PE 0207134F, is assigned budget activity (BA) code 07 because this developmental work upgrades an existing weapons system.

UNCLASSIFIED

R-1 Line Item #132

Page 1 of 19

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207134F: <i>F-15E SQUADRONS</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	198.872	311.167	0.000	0.000	0.000
Current President's Budget	203.816	319.967	222.677	0.000	222.677
Total Adjustments	4.944	8.800	222.677	0.000	222.677
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		8.800			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	4.944	0.000	222.677	0.000	222.677

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 670131: *Initial Operational Test and Evaluation*

Congressional Add: *F-15C/D APG-63(V)3 Radar Demo.*

Congressional Add: *In FY 2009: Complete CDR for LRU 6 and LRU 3. Detects, jams and deceives hostile radars, and radar/infrared guided weapons on all F-15C/D/E aircraft.*

Congressional Add: *In FY 2010: Not Applicable.*

Congressional Add: *In FY 2011: Not Applicable.*

Congressional Add Subtotals for Project: 670131

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	11.694	8.000
	3.185	0.000
	1.700	0.000
	2.347	0.000
	18.926	8.000
	18.926	8.000

Change Summary Explanation

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

R-1 Line Item #132

Page 2 of 19

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207134F: <i>F-15E SQUADRONS</i>	PROJECT 670131: <i>Initial Operational Test and Evaluation</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
670131: <i>Initial Operational Test and Evaluation</i>	203.816	319.967	222.677	0.000	222.677	212.203	144.264	124.999	118.285	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The F-15 is the most versatile fighter in the world today. The F-15A-D continues to provide air superiority with an undefeated and unmatched aerial combat record. The F-15E retains this air superiority capability and adds systems, such as advanced imaging and targeting systems, to meet the requirement for all-weather, deep penetration, and night/under-the-weather, air-to-surface attack. Configured with conformal fuel tanks (CFTs), the F-15E deploys worldwide with minimal tanker support and arrives combat-ready. A mainstay in operations both domestic and abroad, upgrades to the F-15 (avionics, armament, airframe, and engines) are critical to maintaining combat viability (lethality, survivability, and supportability).

Projected to remain in service past 2030, avionics modernization is key to long-term weapon system viability. This modernization is built on a foundation of technical studies (both internal to the Air Force and through outside contractors), forestalling obsolescence, exploiting proven technological advances, and leveraging new technology. Major avionics upgrades center around radar modernization (both hardware and software upgrades) and the exploitation of enhanced capability via wideband radome, precision timing, data delivery and processing technology, precision registration systems, cockpit Head Up Display (HUD) and instrumentation digitization and modernization, central computer processing power increases, digital mission event recording systems, and an infrared (IR) based fire control system. Funds are also used as required to resolve Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues.

The proliferation of fourth generation enemy aircraft and sophisticated "double-digit" anti-aircraft missile systems pose a significant threat to F-15 survivability. A fully integrated electronic warfare suite holds the promise of providing survivability as well as expanded electronic attack capability.

Nearly all improvements are linked to an aircraft operational flight program update schedule that works to integrate new capabilities with the airframe. These updates are a responsive way to increase the offensive and defensive capability and survivability of the F-15. Given the comprehensiveness of these changes, significant flight test will be required. Incorporation of corresponding spiral and/or phased technology/equipment improvements that include support equipment, mission planning systems, and training device upgrades will improve performance, supportability, and line replaceable unit (LRU) throughput.

The F-15E program, PE 0207134F, is assigned budget activity (BA) code 07 because this developmental work upgrades an existing weapons system.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

R-1 Line Item #132

Page 3 of 19

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207134F: <i>F-15E SQUADRONS</i>	PROJECT 670131: <i>Initial Operational Test and Evaluation</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Continuation of flight test activities at Eglin AFB, FL.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>						
<p>MAJOR THRUST: Development of Tactical Electronic Warfare System (TEWS) Intermediate Support System (TISS) Technology Insertion Program (TTIP).</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Completed RF Interface Test Module (RITM) integration with the TISS station; Started RITM integration with the TISS Test Program Sets (TPS). Completed second year of TISS Engineering Support. Replaces the TEWS TISS radio frequency interface on 36 stations and provides 4 years of Engineering Support.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Complete RITM integration with TISS TPSs; conduct the formal System Compatibility Test (SCT) on the new RITM. Conduct the third year of TISS Engineering Support. Replaces the TEWS TISS radio frequency interface on 36 stations and provides 4 years of Engineering Support.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Conduct the fourth year of TISS Engineering Support. Replaces the TEWS TISS radio frequency interface on 36 stations and provides 4 years of Engineering Support.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>		2.337	2.264	1.490	0.000	1.490
<p>MAJOR THRUST: Mode 5 Identify Friend or Foe (IFF) Development Efforts. Integrates new Mode 5 encryption onto F-15 C/D/E as part of OFP development.</p>		4.268	0.000	0.000	0.000	0.000

UNCLASSIFIED

R-1 Line Item #132

Page 5 of 19

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207134F: <i>F-15E SQUADRONS</i>	PROJECT 670131: <i>Initial Operational Test and Evaluation</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Continuation of design efforts with completion of PDR and CDR and purchase of test assets. Provides a central computer upgrade on 223 F-15Es to replace the ADCP.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>						
<p>MAJOR THRUST: Mission Support, Other Government Cost</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Continued program office support at Wright-Patterson, AFB.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Not Applicable.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Not Applicable.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>		3.911	0.000	0.000	0.000	0.000
<p>MAJOR THRUST: Flight Data Recorder (FDR) program</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: provides the F-15 fleet with a FDR and crash survivable memory unit to assist in mishap investigations, provide fleet life management capability, and support structural integrity programs. Development on-going, scheduled to complete in FY10.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Not Applicable.</p>		2.400	0.000	0.000	0.000	0.000

UNCLASSIFIED

R-1 Line Item #132

Page 8 of 19

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207134F: <i>F-15E SQUADRONS</i>	PROJECT 670131: <i>Initial Operational Test and Evaluation</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Not Applicable.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>						
<p>MAJOR THRUST: Advanced Display Core Processor (ADCP) Plus w/Vertical Situation Display (VSD) is the replacement F-15 C/D computer. This effort is a new start in FY11.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Not Applicable.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Not Applicable.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Begin risk reduction activities, requirements definition and develop statement of work for Phase 0/1. Provides a high resolution color display to replace the current F-15 C/D VSD.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>		0.000	0.000	21.730	0.000	21.730
<p>MAJOR THRUST: Corrosion Detection and Visualization Program. Initiate study to reduce corrosion in airframe structure and LRUs.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Not Applicable.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Begin study.</p>		0.000	0.800	0.000	0.000	0.000

UNCLASSIFIED

R-1 Line Item #132

Page 9 of 19

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207134F: <i>F-15E SQUADRONS</i>	PROJECT 670131: <i>Initial Operational Test and Evaluation</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> In FY 2011: Not Applicable.						
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.						
Accomplishments/Planned Programs Subtotals		184.890	311.967	222.677	0.000	222.677
		FY 2009	FY 2010			
Congressional Add: F-15C/D APG-63(V)3 Radar Demo. <i>FY 2009 Accomplishments:</i> In FY 2009: Capability demonstration event. <i>FY 2010 Plans:</i> In FY 2010: Capability demonstration event.		11.694	8.000			
Congressional Add: In FY 2009: Complete CDR for LRU 6 and LRU 3. Detects, jams and deceives hostile radars, and radar/infrared guided weapons on all F-15C/D/E aircraft. <i>FY 2009 Accomplishments:</i> In FY 2010: Not Applicable. <i>FY 2010 Plans:</i> In FY 2011: Not Applicable.		3.185	0.000			
		1.700	0.000			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207134F: <i>F-15E SQUADRONS</i>	PROJECT 670131: <i>Initial Operational Test and Evaluation</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
Congressional Add: In FY 2010: Not Applicable. <i>FY 2009 Accomplishments:</i> In FY 2011: Not Applicable. <i>FY 2010 Plans:</i> Chip Scale Atomic Clock (CSAC).		
Congressional Add: In FY 2011: Not Applicable. <i>FY 2009 Accomplishments:</i> In FY 2011 OCO: Not Applicable. <i>FY 2010 Plans:</i> In FY 2011 OCO: Not Applicable. (1)	2.347	0.000
Congressional Adds Subtotals	18.926	8.000

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207130F: <i>Aircraft Modification (F-15 A/B/C/D Squadrons) [BP 11]</i>	40.739	58.143	166.209	0.000	166.209	159.061	242.278	219.417	198.203	0.000	0.000
• PE 0207134F: <i>Aircraft Modification (F-15E Squadrons [BP11])</i>	8.433	59.669	134.859	0.000	134.859	138.390	144.495	144.210	142.140	0.000	0.000
• PE 0207445F: <i>Aircraft Modification (Fighter Tactical Data Link) [BP11]</i>	0.000	0.000	0.174	0.000	0.174	3.073	3.064	3.117	5.533	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207134F: <i>F-15E SQUADRONS</i>	PROJECT 670131: <i>Initial Operational Test and Evaluation</i>
--	---	--

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0809731F: <i>Aircraft Modification (Training Support to Units) [BP11]</i>	0.000	0.979	0.993	0.000	0.993	1.008	1.027	1.046	1.067	0.000	0.000
• PE 0207130F (1): <i>Aircraft Support Equipment (O&I) (F-15 A/B/C/D Squadrons) [BP 12]</i>	13.165	12.728	4.947	0.000	4.947	5.022	5.106	5.193	5.290	0.000	0.000
• PE 0207134F (2): <i>Aircraft Post Production Support (F-15E Squadrons (PE 0207134F) [BP 13]</i>	20.134	15.694	21.599	0.000	21.599	2.589	2.631	2.676	2.726	0.000	0.000
• PE 0207130F (3): <i>Aircraft Initial Spares and Repairs (F-15 A/B/C/D Squadrons) [BP 16]</i>	1.240	1.680	6.422	0.000	6.422	0.097	0.097	9.156	23.327	0.000	0.000
• PE 0207134F (4): <i>Aircraft Initial Spares and Repairs (F-15E Squadrons) [BP 16]</i>	4.101	0.195	18.107	0.000	18.107	18.895	19.210	18.806	19.158	0.000	0.000

D. Acquisition Strategy

Program is a continuation of effort which includes the development of all F-15 models. Funds are executed organically in support of equipment improvement, study, analysis, and test.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207134F: <i>F-15E SQUADRONS</i>				PROJECT 670131: <i>Initial Operational Test and Evaluation</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OFP Suite 5/6/7/8 Development and Test	SS/CPAF	Boeing St Louis, MO	299.176	40.879	Dec 2009	22.601	Dec 2010	0.000		22.601	61.937	424.593	0.000
OFP Suite 5/6/7/8 Development and Test (1)	Various/ Various	Various Various	176.831	39.260		29.068		0.000		29.068	89.687	334.846	0.000
TISS TTIP	SS/CPFF	Boeing St Louis, MO	23.062	1.943	Dec 2009	1.246	Dec 2010	0.000		1.246	0.000	26.251	0.000
TISS TTIP (2)	Various/ Various	Various Various	1.529	0.321		0.235		0.000		0.235	0.000	2.085	0.000
F-15C/D APG-63(V)3 Radar Demo	SS/CPFF	Boeing St Louis, MO	43.741	8.000		0.000		0.000		0.000	0.000	51.741	0.000
F-15E RMP	SS/CPIF	Boeing St Louis, MO	88.498	138.242	Dec 2009	59.966	Oct 2010	0.000		59.966	17.928	304.634	0.000
F-15E RMP (3)	Various/ Various	Various Various	5.101	26.367		21.506		0.000		21.506	18.797	71.771	0.000
Mode 5	SS/CPAF	Boeing St Louis, MO	36.033	0.000		0.000		0.000		0.000	0.000	36.033	0.000
F-15 RWR Upgrade	SS/CPFF	BAE Totowa, NJ	8.596	0.000		0.000		0.000		0.000	0.000	8.596	0.000
F-15C/D IRST	TBD/TBD	TBD TBD	0.000	35.000	May 2010	24.941	Dec 2011	0.000		24.941	44.120	104.061	0.000
F-15E CPMP (formerly ADCP II, part of RMP)	SS/CPFF	Boeing St Louis, MO	3.500	7.648	Mar 2010	22.103	Dec 2011	0.000		22.103	47.582	80.833	0.000
F-15E CPMP (formerly ADCP II, part of RMP) (4)	Various/ Various	Various Various	0.000	1.109	Mar 2010	3.796	Dec 2011	0.000		3.796	16.257	21.162	0.000

UNCLASSIFIED

R-1 Line Item #132

Page 13 of 19

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207134F: <i>F-15E SQUADRONS</i>				PROJECT 670131: <i>Initial Operational Test and Evaluation</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
F-15 Flight Data Recorder	SS/CPIF	Boeing St Louis, MO	2.400	0.000		0.000		0.000		0.000	0.000	2.400	0.000
F-15 MSOGS	TBD/TBD	TBD TBD	1.700	0.000		0.000		0.000		0.000	0.000	1.700	0.000
F-15 Chip Scale Atomic Clock	SS/CPFF	Honeywell Golden Valley, MN	2.347	0.000		0.000		0.000		0.000	0.000	2.347	0.000
ADCP+ w/VSD	TBD/TBD	TBD TBD	0.000	0.000		16.571	Dec 2011	0.000		16.571	0.000	16.571	0.000
ADCP+ w/VSD (5)	Various/ Various	Various Various	0.000	0.000		5.159		0.000		5.159	0.000	5.159	0.000
F-15 Corrosion Detection and Visualization Program	TBD/TBD	TBD TBD	0.000	0.800		0.000		0.000		0.000	0.000	0.800	0.000
Subtotal			692.514	299.569		207.192		0.000		207.192	296.308	1,495.583	0.000

Remarks

--

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207134F: <i>F-15E SQUADRONS</i>				PROJECT 670131: <i>Initial Operational Test and Evaluation</i>					

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
(Msn Spt) Misc.	TBD/TBD	Wright-Patterson AFB OH	3.911	0.000		0.000		0.000		0.000	0.000	3.911	0.000
Subtotal			3.911	0.000		0.000		0.000		0.000	0.000	3.911	0.000

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Boeing (Contractor Test Team)	SS/CPFF	Boeing St Louis, MO	103.124	15.675	Jan 2010	11.887	Dec 2011	0.000		11.887	53.321	184.007	0.000
Eglin (Flt Test)	PO	Eglin AFB FL	29.792	4.442		3.379		0.000		3.379	15.404	53.017	0.000
Flight Test Support	Various/ Various	Various Various	1.887	0.281		0.219		0.000		0.219	0.976	3.363	0.000
Subtotal			134.803	20.398		15.485		0.000		15.485	69.701	240.387	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207134F: <i>F-15E SQUADRONS</i>	PROJECT 670131: <i>Initial Operational Test and Evaluation</i>

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	831.228	319.967	222.677	0.000	222.677	366.009	1,739.881	0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207134F: *F-15E SQUADRONS*

PROJECT

670131: *Initial Operational Test and Evaluation*



F-15C/D Modifications



U.S. AIR FORCE

Dominant Air Power: Design For Tomorrow... Deliver Today

Program	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	Requirement
Avionics Replacement	Development	Production	Installation					232
APG-63(V)3	Production	Installation						158
Mode 5		Production	Installation					250
IRST		Development	Production	Installation				Gp A:176 Pods:100
DVR		Production	Installation					238
Secondary Pwr System	Development	Production	Installation					176
M SOGS	Development	Installation						176
Flight Data Recorder		Production	Installation					238
BLOS/SLOS SATCOM				Development	Production	Installation		101
ADCP+VSD			Development	Production	Installation			131
	Development	Production	Installation					

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207134F: *F-15E SQUADRONS*

PROJECT

670131: *Initial Operational Test and Evaluation*



U.S. AIR FORCE

F-15E Modifications



Dominant Air Power: Design For Tomorrow... Deliver Today

Program	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	Requirement	
F-15E RMP (APG-82(V)1 AESA Radar)	Development		Production		Installation			223	
TISS TIP	Development		Installation					36	
ADCP	Installation							223	
JHMCS - Front Seat	Installation		Installation					164	
Mode 5			Production		Installation			223	
BLOS/SLOS SATCOM	Installation							180	
CPMP			Development		Production		Installation		223
DVRS	Development		Installation					223	
Secondary Pwr System	Development		Production		Installation			223	
Flight Data Recorder	Production		Production		Installation			223	
	Development		Production		Installation				

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207134F: <i>F-15E SQUADRONS</i>	PROJECT 670131: <i>Initial Operational Test and Evaluation</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
OFP Continuous Development	1	2009	4	2011
Mode 5 EMD - Complete	2	2010	1	2011
F-15E RMP EMD - Complete	1	2009	4	2010
F-15C/D IRST EMD - Start	2	2010	4	2011
Secondary Power System EMD - Complete	1	2009	2	2010
CPMP Pre-EMD Contract Award	4	2010	4	2010
CPMP EMD Phase I Contract Award	2	2010	2	2010
F-15 C/D ADCP+ w/VSD Pre-EMD Contract Award	4	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207136F: <i>Manned Destructive Suppression</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	5.413	9.748	12.937	0.000	12.937	13.374	13.940	14.565	15.239	Continuing	Continuing
674595: <i>F-16 HARM Targeting System</i>	5.413	9.748	12.937	0.000	12.937	13.374	13.940	14.565	15.239	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Manned Destructive Suppression (MDS) program funds the development, procurement, and sustainment of the Air Force's Suppression of Enemy Air Defenses (SEAD) and Destruction of Enemy Air Defenses (DEAD) capabilities. The F-16 HARM Targeting System (HTS) is currently the only programmed reactive SEAD capability and enables targeting the HARM missile in its most lethal 'range known' mode. The program provides F-16 Block 50/52 aircraft with the ability to employ the AN/ASQ-213 Pod. With the introduction of HTS Revision 7 (HTS R7), the AN/ASQ-213 Pod now has a precision geolocation capability to target Precision Guided Munitions (PGMs) to destroy fixed and mobile enemy air defense elements, and enables the F-16 to carry both an AN/ASQ-213 HTS R7 Pod and an Advanced Targeting Pod (ATP), by relocating HTS R7 pod to the aircraft's left inlet hard point. HTS R7 completed System Development and Demonstration (SDD) in FY07 following operational testing certification and fielding on the first F-16 Block 50/52 squadron in May 07. These improvements represent the Air Force's near-term solution for reactive time critical targeting for DEAD until this mission can be transferred to F-35 or a yet to be defined system. HTS R7 precision targeting coordinates can be provided to all Joint Forces via Link-16. This RDT&E effort continues preplanned product improvements (P3I) and applies technologies similar to those demonstrated in the Advanced Tactical Targeting Technologies (AT3) program and HTS R7 development. This PE is in Budget Activity 7 - Operational System Development because it supports preplanned product improvements and upgrade development of F-16 HTS (R7), a fielded system, to the HTS R7 SWUP configuration.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207136F: <i>Manned Destructive Suppression</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	5.570	10.748	0.000	0.000	0.000
Current President's Budget	5.413	9.748	12.937	0.000	12.937
Total Adjustments	-0.157	-1.000	12.937	0.000	12.937
• Congressional General Reductions		-1.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.157	0.000	12.937	0.000	12.937

Change Summary Explanation

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207136F: <i>Manned Destructive Suppression</i>	PROJECT 674595: <i>F-16 HARM Targeting System</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674595: <i>F-16 HARM Targeting System</i>	5.413	9.748	12.937	0.000	12.937	13.374	13.940	14.565	15.239	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Manned Destructive Suppression (MDS) program funds the development, procurement, and sustainment of the Air Force's Suppression of Enemy Air Defenses (SEAD) and Destruction of Enemy Air Defenses (DEAD) capabilities. The F-16 HARM Targeting System (HTS) is currently the only programmed reactive SEAD capability and enables targeting the HARM missile in its most lethal 'range known' mode. The program provides F-16 Block 50/52 aircraft with the ability to employ the AN/ASQ-213 Pod. With the introduction of HTS Revision 7 (HTS R7), the AN/ASQ-213 Pod now has a precision geolocation capability to target Precision Guided Munitions (PGMs) to destroy fixed and mobile enemy air defense elements, and enables the F-16 to carry both an AN/ASQ-213 HTS R7 Pod and an Advanced Targeting Pod (ATP), by relocating HTS R7 pod to the aircraft's left inlet hard point. HTS R7 completed System Development and Demonstration (SDD) in FY07 following operational testing certification and fielding on the first F-16 Block 50/52 squadron in May 07. These improvements represent the Air Force's near-term solution for reactive time critical targeting for DEAD until this mission can be transferred to F-35 or a yet to be defined system. HTS R7 precision targeting coordinates can be provided to all Joint Forces via Link-16. This RDT&E effort continues preplanned product improvements (P3I) and applies technologies similar to those demonstrated in the Advanced Tactical Targeting Technologies (AT3) program and HTS R7 development. This PE is in Budget Activity 7 - Operational System Development because it supports preplanned product improvements and upgrade development of F-16 HTS (R7), a fielded system, to the HTS R7 SWUP configuration.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: P3I R7 SWUP <i>FY 2009 Accomplishments:</i> In FY 2009: HTS R7 software upgrade (SWUP) development began to address known deficiencies and capability upgrades to system performance. Following the completion of system requirements	5.413	7.953	10.264	0.000	10.264

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207136F: <i>Manned Destructive Suppression</i>		PROJECT 674595: <i>F-16 HARM Targeting System</i>	
B. Accomplishments/Planned Program (\$ in Millions)					
<p>functionality, both preliminary and critical software design milestones were accomplished. This major thrust also includes continued mission support, i.e., program management, activities.</p> <p><i>FY 2010 Plans:</i> In FY 2010: HTS R7 SWUP flight testing begins and study efforts on capability upgrades continue. SWUP initial software build continues which would complete in time for release to flight testing this year. A series of flight test planning activities to include scheduling of needed resources continue through this year leading up to the beginning of initial flight testing with associated data analysis of recorded test data to capture required baseline data. Also, this effort would include release of updated and tested software for subsequent flight test missions. As a precursor to the next follow-on upgrade effort, studies will continue to define candidates and mitigate risks to ensure a successful, sustainable HTS P3I program. This major thrust also includes continued mission support, i.e., program management, activities.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: HTS R7 SWUP flight testing support and additional software releases for flight testing continues. Studies continue on risk reduction efforts for the next P3I phase. HTS R7 SWUP flight testing continues to include completing all data baseline activities and initial formal developmental flight testing and all associated data analysis and release of upgraded software for subsequent flight testing. Studies include candidate selection process activities and risk reduction efforts for follow-on upgrades. Mission support, i.e., program management, for administrative and technical support activities continue. The major thrusts of this year would be preparation and support of continued flight testing activities and risk reduction candidate selection activities for the follow-on P3I effort. This P3I R7 study effort for the next phase is a continuation of the HTS P3I effort.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
MAJOR THRUST: Flight Test					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
	0.000	0.977	1.838	0.000	1.838

UNCLASSIFIED

R-1 Line Item #133

Page 4 of 11

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207136F: <i>Manned Destructive Suppression</i>	PROJECT 674595: <i>F-16 HARM Targeting System</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Begin HTS mission planning module upgrade effort to release upgraded mission planning software to support HTS R7 SWUP flight testing. This effort will build the first engineering release of HTS R7 SWUP mission planning software to be released to support formal HTS R7 SWUP developmental flight testing.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continues mission planning software upgrade effort to include correcting deficiencies found, additional engineering software releases and preparations for formal fielding with HTS R7 SWUP in FY 2012.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	5.413	9.748	12.937	0.000	12.937

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0207136F: <i>Manned Destructive Suppression, HTS Aircraft Procurement (BP19) APAF</i>	10.086	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The HTS R7 improvement strategy includes accomplishment of risk reduction studies and selection of appropriate contracting strategies for P3I and upgrade of HTS inventory.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207136F: <i>Manned Destructive Suppression</i>	PROJECT 674595: <i>F-16 HARM Targeting System</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207136F: <i>Manned Destructive Suppression</i>				PROJECT 674595: <i>F-16 HARM Targeting System</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Raytheon Systems Co./ Other Support	SS/Various	TBD TBD	130.419	7.953		10.264		0.000		10.264	0.000	148.636	0.000
JMPS (Formerly AFMSS)	SS/Various	TBD TBD	2.674	0.818		0.835		0.000		0.835	0.000	4.327	0.000
Lockheed/Ft Worth	SS/FFP	TBD TBD	2.400	0.000		0.000		0.000		0.000	0.000	2.400	0.000
Subtotal			135.493	8.771		11.099		0.000		11.099	0.000	155.363	0.000

Remarks
HTS R7 SWUP/P3I begins in FY09.

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mission Support	Various/ Various	TBD TBD	9.837	0.000		0.000		0.000		0.000	0.000	9.837	0.000
Subtotal			9.837	0.000		0.000		0.000		0.000	0.000	9.837	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207136F: <i>Manned Destructive Suppression</i>	PROJECT 674595: <i>F-16 HARM Targeting System</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Eglin	PO	TBD TBD	2.175	0.000		0.000		0.000		0.000	0.000	2.175	0.000
Edwards	PO	TBD TBD	14.269	0.977		1.838		0.000		1.838	0.000	17.084	0.000
Light Defender	TBD/TBD	TBD TBD	0.922	0.000		0.000		0.000		0.000	0.000	0.922	0.000
Subtotal			17.366	0.977		1.838		0.000		1.838	0.000	20.181	0.000

Remarks
Light Defender was a foreign system that was evaluated for possible SEAD role in 1995-96; but was not procured.

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	162.696	9.748	12.937	0.000	12.937	0.000	185.381	0.000

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

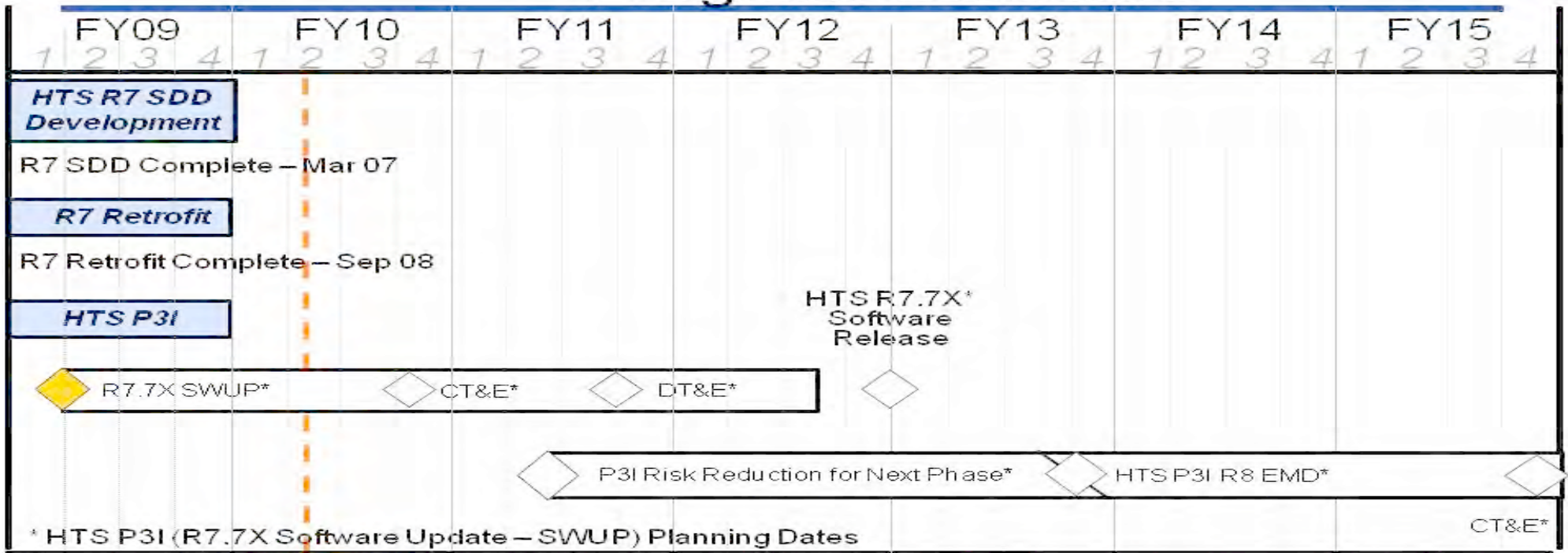
R-1 ITEM NOMENCLATURE

PE 0207136F: *Manned Destructive
 Suppression*

PROJECT

674595: *F-16 HARM Targeting System*

Manned Destructive Suppression Program Schedule



SDD – System Development & Demonstration
 P3I – PrePlanned Product Improvement

SWUP – Software Upgrade Program
 CT&E – Contractor Test and Evaluation

DT&E - Developmental Test and Evaluation

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207136F: <i>Manned Destructive Suppression</i>	PROJECT 674595: <i>F-16 HARM Targeting System</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
R7 Follow-on Study (SWUP Risk Reduction)	1	2009	2	2009
R7 SWUP Contract Award	2	2009	2	2009
R7 SWUP Flight Test (DT&E)	4	2010	4	2011
HTS P3I Risk Reduction for Next Phase Contract	3	2010	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207138F: <i>F-22 SQUADRONS</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	579.710	569.345	576.330	0.000	576.330	555.208	467.944	454.036	677.382	Continuing	Continuing
674785: <i>F-22</i>	579.710	569.345	576.330	0.000	576.330	555.208	467.944	454.036	677.382	Continuing	Continuing

A. Mission Description and Budget Item Justification

The F-22 Raptor represents the USAF's top priority for providing the Joint Force with air dominance, operational access, and homeland and cruise missile defense for the next 20+ years. The F-22 is a first-of-a-kind multi-mission fighter aircraft that combines stealth, supercruise, advanced maneuverability and integrated avionics to make it the world's most capable combat aircraft. The Engineering and Manufacturing Development (EMD) phase of F-22 acquisition is complete. The program is now continuing the pre-planned modernization effort through incremental development phases that enhance the F-22 Global Strike capability.

The development program enhances the air vehicle, engine, and training system to improve/enhance F-22 weapons, communications, and Intelligence Surveillance Reconnaissance (ISR) capabilities.

This program is in Budget Activity 7, Operational System Development, because the F-22 program is developing the next-generation air dominance fighter for the USAF to counter emerging worldwide threats.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	605.659	569.345	0.000	0.000	0.000
Current President's Budget	579.710	569.345	576.330	0.000	576.330
Total Adjustments	-25.949	0.000	576.330	0.000	576.330
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-25.949	0.000	576.330	0.000	576.330

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207138F: *F-22 SQUADRONS*

Change Summary Explanation

Note 1: The FY2010 President's Budget submittal did not reflect FY2011 through FY2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

Note 2: In FY 2009, \$25.9M decrease in funding due to higher Air Force priorities

UNCLASSIFIED

R-1 Line Item #134

Page 2 of 15

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207138F: <i>F-22 SQUADRONS</i>	PROJECT 674785: <i>F-22</i>
--	--	---------------------------------------

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674785: <i>F-22</i>	579.710	569.345	576.330	0.000	576.330	555.208	467.944	454.036	677.382	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The F-22A Raptor represents the USAF's top priority for providing the Joint Force with air dominance, operational access, homeland and cruise missile defense for the next 20+ years. The F-22A is a first-of-a-kind multi-mission fighter aircraft that combines stealth, supercruise, advanced maneuverability and integrated avionics to make it the world's most capable combat aircraft. The F-22A is currently closing out the Engineering and Manufacturing Development (EMD) phase of acquisition and continuing the spiral-modernization phase. This exhibit includes the spiral modernization enhancements required to enable a more robust air dominance air-to-air/Suppression/Destruction of Enemy Air Defense (SEAD/DEAD) and other air-toground target engagement capability in the most demanding threat environments-day or night.

Spirals 2 and 3 continue the development of global strike capability. The development program enhances the air vehicle, engine, and training system capabilities to improve F-22A weapons, communications, and Intelligence Surveillance Reconnaissance (ISR) capabilities.

Prior to FY08, the Aircraft Structural Integrity Program (ASIP) was included as a necessary expense to Increment 2 (Drop 1) and 3 (Drops 2 and 3). Due to increased scope in FY08, this effort is now its own line item below.

All documentation prior to FY08 uses the term "spiral." In accordance with current policy guidance, the new terminology is increment.

This program is in Budget Activity 7, Operational System Development, because the F-22A Program is developing the next-generation air dominance fighter for the USAF to counter emerging worldwide threats.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue requirements definition and increment development activities for planned hardware and software capability upgrades. -Continue Increment 3 to develop Global Strike Conops e...	392.845	411.964	393.409	0.000	393.409

UNCLASSIFIED

R-1 Line Item #134

Page 3 of 15

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207138F: <i>F-22 SQUADRONS</i>	PROJECT 674785: <i>F-22</i>
--	--	---------------------------------------

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2009 Accomplishments:</i> In FY 2009: Software Only Updates - Candidate Definition of the Increment 3.2 Accelerated candidates will be completed, preparing the program to progress into the Requirements Development phase. Candidates that will continue to be developed as part of the Increment 3.2 Accelerated program are selected at the Capabilities Requirements Review. Design, coding, test and integration of the Update 3 software sustainment OFP continues. Increment 3.1 - Integration and certification testing will continue in the Raptor Integration Lab (RAIL) and the Avionics Integration Lab (AIL). Flight test of the Increment 3.1 capabilities will also begin and continue throughout the year. ESMS - F-22 Enhanced Stores Management System (ESMS) software coding and testing will continue along with hardware design and initial Durability Life Testing on the hardware. The program Critical Design Review will also be conducted during this time. Increment 3.2 - Candidate Definition for the Increment 3.2 capabilities continues. Candidates that will continue to be developed as part of the Increment 3.2 program are selected at the Capabilities Requirements Review.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Software Only Updates - Requirements Development will begin, where operational requirements are translated into technical requirements. A Systems Requirements Review and external interface freeze are scheduled to occur during this time. Raptor Integration Lab (RAIL) and the Avionics Integration Lab (AIL) testing, as well as flight test, on the Update 3 software sustainment OFP begins and is conducted throughout the year. Increment 3.1 - Integration and certification testing in the Raptor Integration Lab (RAIL) and the Avionics Integration Lab (AIL) will be completed. Developmental flight test of the Increment 3.1 capabilities will also be completed. ESMS - All software coding, integration and testing will be completed. Hardware Durability Life Testing will be completed and flight worthy modules to support flight testing will be delivered. Increment 3.2 - Candidate Definition is completed and the Requirements Development phase of the Increment 3.2 program will begin. A Systems Requirements Review is scheduled to be conducted during this time.</p>					

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207138F: <i>F-22 SQUADRONS</i>	PROJECT 674785: <i>F-22</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Same as prior year.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>						
<p>MAJOR THRUST: Continue mission support of the Program Office; travel, computer costs, misc contracts, etc.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Funds provide centralized Program Management Administration (PMA) allowing management and oversight activities in direct support of F-22 Increment Development, RAMMP, ASIP, flight test support, etc.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Same as prior year.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Same as prior year.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>		8.162	11.681	11.906	0.000	11.906
<p>MAJOR THRUST: Continue F-22 Reliability and Maintainability Maturation Program (RAMMP)</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Provides for development of multiple efforts implemented to improve Mean Time Between Maintenance (MTBM), maintainability, and reduce F-22 weapon system life cycle cost. This effort directly influences sortie generation rates and manpower requirements.</p>		10.800	7.000	18.000	0.000	18.000

UNCLASSIFIED

R-1 Line Item #134

Page 7 of 15

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207138F: <i>F-22 SQUADRONS</i>	PROJECT 674785: <i>F-22</i>
--	--	---------------------------------------

B. Accomplishments/Planned Program (\$ in Millions)	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Includes final cost for delivery of the RTA. The RTA is a production representative development test vehicle utilized at Edwards AFB in support of F-22 flight test requirements.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Not Applicable</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	579.710	569.345	576.330	0.000	576.330

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0604239F: <i>AF RDT&E (3600)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	24,295.158
• PE Not Provided (8487): <i>PRTV II (6)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207138F: <i>F-22A Squadrons Procurement (3010)*</i>	468.673	288.999	602.634	0.000	602.634	546.390	416.560	471.783	388.270	0.000	0.000
• PE 0207138F (1): <i>F-22A Squadrons Procurement (3080)</i>	0.000	1.207	1.452	0.000	1.452	2.163	1.503	1.525	1.550	0.000	0.000
• PE 0207219F: <i>Aircraft Procurement (3010) Advanced Tactical Fighter, P-1 Line Item #003**</i>	3,655.981	80.132	159.915	0.000	159.915	118.221	1.292	1.310	1.333	0.000	0.000
• PE 0604239F (2): <i>Military Construction (3300)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	65.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207138F: <i>F-22 SQUADRONS</i>	PROJECT 674785: <i>F-22</i>
--	--	---------------------------------------

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207138F (3): <i>Military Construction (3300)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	96.018
• PE 0207138F (4): <i>Military Construction (3300)</i>	197.750	0.000	22.125	0.000	22.125	1.057	11.740	0.000	0.000	0.000	496.660
• PE 0207219F (5): <i>Munitions Procurement (3011)</i>	12.829	15.896	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207445F: <i>Tactical Data Link RDT&E (3600)</i>	55.069	66.872	85.492	0.000	85.492	169.748	118.655	0.000	0.000	0.000	607.872

D. Acquisition Strategy

The Raptor Enhancement Development & Integration (REDI) contract is an Indefinite Delivery/Indefinite Quantity Ordering contract that maximizes flexibility to start, stop, accelerate and decelerate projects as required. The REDI contract was established to be more responsive to evolving war fighter requirements. The REDI contract allows the issuance of orders for the highest priority war fighter capabilities in operationally meaningful capability increments, requirements analysis, contractor cost estimates and studies, development and demonstration of capability enhancements, and unanticipated future war fighter requirements. Each increment is broken into phases. Phase A is to initiate requirements analysis, Phase B is the design phase and Phases C, D, and E are the development, integration and verification phase of a specific incremental development effort. Separate delivery orders will be issued for various phases of an increment. These separate delivery orders at these predetermined breakpoints allow the modernization program to be tailored to the technology maturity, available funding and capability priority during the life of the program.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207138F: <i>F-22 SQUADRONS</i>				PROJECT 674785: <i>F-22</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Increment development activities	C/CPAF	Lockheed Martin TBD	392.845	411.789	Dec 2009	393.409	Dec 2010	0.000		393.409	Continuing	Continuing	0.000
Air Vehicle Instrumentation support (Training and Test Instrumentation)	C/CPAF	Lockheed Martin TBD	0.700	0.000		0.000	Dec 2010	0.000		0.000	Continuing	Continuing	0.000
System Engineering / Program Management	C/CPAF	Lockheed Martin TBD	14.214	18.600	Dec 2009	19.500	Dec 2010	0.000		19.500	Continuing	Continuing	0.000
F-22A Reliability and Maintainability Maturation Program (RAMMP)	C/CPAF	Lockheed Martin TBD	10.800	7.000	Dec 2009	18.000	Dec 2010	0.000		18.000	Continuing	Continuing	0.000
Aircraft Structural Integrity Program (ASIP)	C/CPAF	Lockheed Martin TBD	4.590	3.330	Dec 2009	5.790	Dec 2010	0.000		5.790	Continuing	Continuing	0.000
Subtotal			423.149	440.719		436.699		0.000		436.699			0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support Contracts	C/Various	TBD	8.162	11.726		11.906		0.000		11.906	Continuing	Continuing	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207138F: <i>F-22 SQUADRONS</i>	PROJECT 674785: <i>F-22</i>
--	--	---------------------------------------

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		TBD											
Subtotal			8.162	11.726		11.906		0.000		11.906			0.000

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AFFTC and Contractor Flight Test Support	C/Various	TBD TBD	127.184	115.000	Nov 2009	127.725	Nov 2010	0.000		127.725	Continuing	Continuing	0.000
Replacement Test Aircraft (RTA) and Instrumentation	C/CPAF	Lockheed Martin TBD	21.215	1.900	Dec 2009	0.000	Dec 2010	0.000		0.000	0.000	23.115	126.155
Subtotal			148.399	116.900		127.725		0.000		127.725			126.155

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	579.710	569.345		576.330		0.000		576.330			126.155

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207138F: <i>F-22 SQUADRONS</i>	PROJECT 674785: <i>F-22</i>
--	--	---------------------------------------

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	---------------------------	---------	-----------------	----------------	------------------	---------------------	------------	--------------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

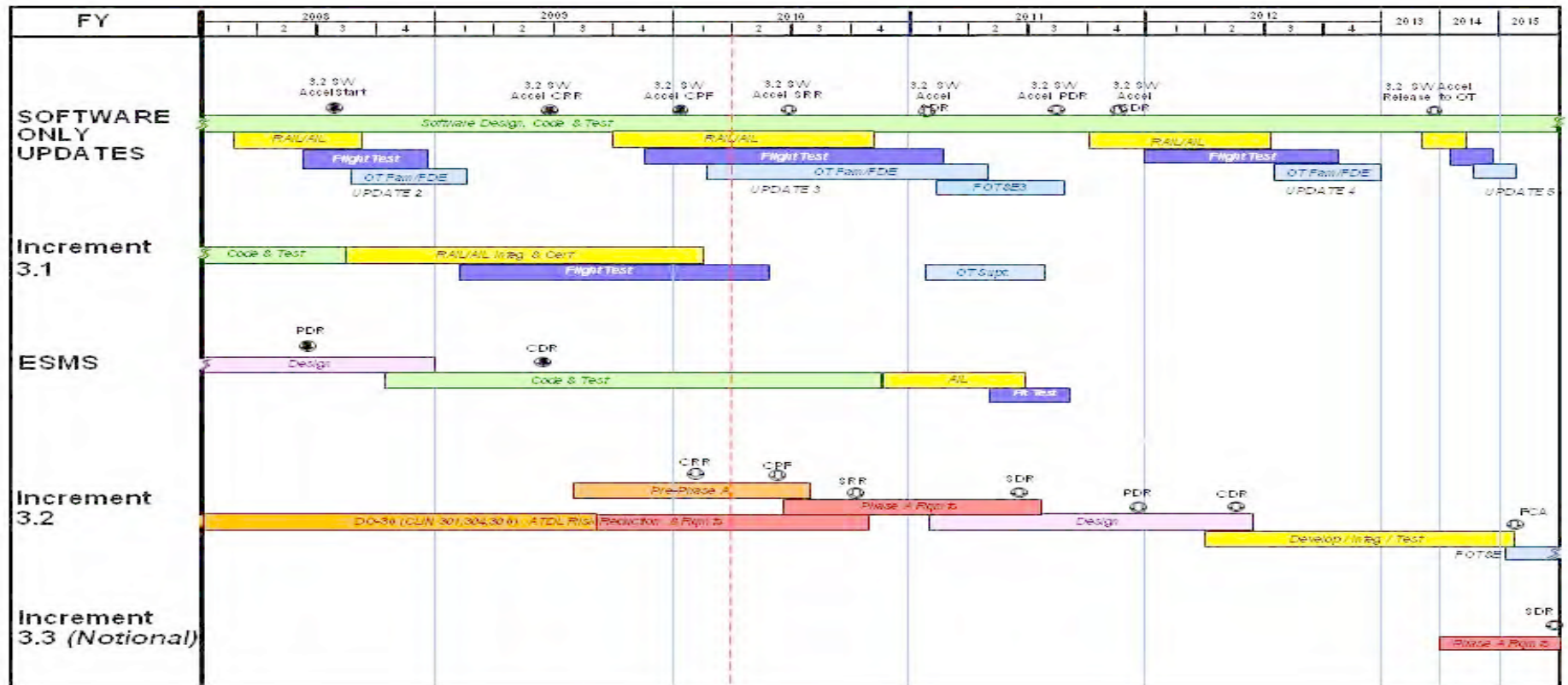
R-1 ITEM NOMENCLATURE

PE 0207138F: *F-22 SQUADRONS*

PROJECT

674785: *F-22*

Modernization Master Planning Schedule Summary



UNCLASSIFIED

R-1 Line Item #134

Page 14 of 15

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207138F: <i>F-22 SQUADRONS</i>	PROJECT 674785: <i>F-22</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Complete Increment 2 Phase C, D, &E (Development, Integration & Test)	2	2010	2	2010
Complete Inc 3.2 Pre-Phase A (Requirements Analysis)	3	2009	3	2010
--Increment 3.2 CRR (A)	3	2009	3	2009
--Increment 3.2 CRR (B)	1	2010	1	2010
Initiate Increment 3.2 Phase A (Requirements)	2	2010	2	2011
--Increment 3.2 SRR (A)	2	2010	2	2010
--Increment 3.2 SRR (B)	3	2010	3	2010
--Increment 3.2 SDR (A)	1	2011	1	2011
--Increment 3.2 SDR (B)	2	2011	2	2011
Initiate 3.2 Design Phase (Phase B)	1	2011	4	2011
--Increment 3.2 PDR (A)	3	2011	3	2011
--Increment 3.2 PDR (B)	4	2011	4	2011
--Increment 3.2 CDR (A)	4	2011	4	2011
Initiate ESMS Phase C (Development, Integration, & Test)	3	2009	2	2011
--ESMS CDR	2	2009	2	2009

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207142F: <i>Joint Strike Fighter Squadrons</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	217.561	0.000	217.561	102.144	113.811	83.324	54.463	Continuing	Continuing
675346: <i>F-35</i>	0.000	0.000	217.561	0.000	217.561	102.144	113.811	83.324	54.463	0.000	0.000

Note

PE0207142F is a new PE for Joint Strike Fighter (JSF) starting in FY11. PE0604800F is the primary USAF RDT&E funding for JSF.

A. Mission Description and Budget Item Justification

The Joint Strike Fighter (JSF) program will develop and deploy a family of highly common, affordable next generation, stealthy, multi-role strike fighter aircraft that meets the needs of the USN, USAF, USMC and allies with maximum commonality among the variants, consistent with National Disclosure Policy, to minimize life cycle costs. This is a joint program with no executive service. Navy and Air Force each provide approximately equal shares of annual funding to the program. The United Kingdom and seven other international countries, and three Foreign Military Sales cases are participants in the JSF program. Follow-on Development will continue the evolutionary approach of SDD by providing capability enhancements through a combined incremental and spiral methodology. The Joint Capabilities Integration and Development System (JCIDS) and Defense Acquisition System (DAS) shall provide the framework and basis for defining, managing and acquiring the envisioned F-35 enhancements.

This program is funded under Operational Systems Development because it funds efforts to upgrade systems for full rate production.

Funding in BPAC 675294 for FY12 and beyond has been loaded to PE 0207142F in error, and should be in PE 0604800F.

Due to an inadvertent error the Air Force a technical adjustment transferring \$159,837,000 from R-1 Line No. 135 "F-35 Squadrons" to Line No. 81 "Joint Strike Fighter (JSF)". The following exhibits reflect the requested transfer amounts.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207142F: <i>Joint Strike Fighter Squadrons</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	217.561	0.000	217.561
Total Adjustments	0.000	0.000	217.561	0.000	217.561
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	217.561	0.000	217.561

Change Summary Explanation

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

FY11 and beyond funding for Block 4 development in the Follow-on Development phase is contained in BPAC 675346. Funding in BPAC 675294 for FY12 and beyond has been loaded to PE 0207142F in error, and should be in PE 0604800F.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207142F: <i>Joint Strike Fighter Squadrons</i>	PROJECT 675346: <i>F-35</i>
--	--	---------------------------------------

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675346: <i>F-35</i>	0.000	0.000	217.561	0.000	217.561	102.144	113.811	83.324	54.463	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

PE0207142F is a new PE for Joint Strike Fighter (JSF) starting in FY11. PE0604800F is the primary RDT&E funding for JSF.

A. Mission Description and Budget Item Justification

The Joint Strike Fighter (JSF) program will develop and deploy a family of highly common, affordable next generation, stealthy, multi-role strike fighter aircraft that meets the needs of the USN, USAF, USMC and allies with maximum commonality among the variants, consistent with National Disclosure Policy, to minimize life cycle costs. This is a joint program with no executive service. Navy and Air Force each provide approximately equal shares of annual funding to the program. The United Kingdom and seven other international countries, and three Foreign Military Sales cases are participants in the JSF program. Follow-on Development will continue the evolutionary approach of SDD by providing capability enhancements through a combined incremental and spiral methodology. The Joint Capabilities Integration and Development System (JCIDS) and Defense Acquisition System (DAS) shall provide the framework and basis for defining, managing and acquiring the envisioned F-35 enhancements.

This program is funded under Operational Systems Development because it funds efforts to upgrade systems for full rate production.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Follow-on development Block IV capabilities; includes logistics, weapons, security, sensors, survivability, upgrades & urgent operational requirements with 2014 delivery to services &... <i>FY 2009 Accomplishments:</i> In FY2009: Not Applicable	0.000	0.000	57.724	0.000	57.724

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207142F: <i>Joint Strike Fighter Squadrons</i>	PROJECT 675346: <i>F-35</i>
--	--	---------------------------------------

B. Accomplishments/Planned Program (\$ in Millions)	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY2010: Not Applicable</p> <p><i>FY 2011 Base Plans:</i> FY2011: initiate follow-on development Block IV aircraft capabilities to include logistics, security, and upgrades required to support F-35 engine variants. Efforts will support aircraft delivery to services and partner nations in 2014 and will integrate urgent operationally relevant requirements post-IOC.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	0.000	0.000	57.724	0.000	57.724

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0604800F: <i>USAF RDT&E</i>	1,743.569	2,072.897	1,043.610	0.000	1,043.610	1,028.424	649.759	233.991	47.213	0.000	0.000
• PE 0604800N: <i>USN RDT&E</i>	1,675.776	1,916.431	667.915	0.000	667.915	594.004	529.826	375.897	134.676	0.000	0.000
• PE 0604800M: <i>USMC RDT&E</i>	0.000	0.000	667.916	0.000	667.916	594.004	529.826	375.925	134.707	0.000	0.000
• PE 0604800N (1): <i>USN RDT&E - USRL</i>	28.816	31.813	39.876	0.000	39.876	27.028	19.792	0.000	0.000	0.000	0.000
• PE not applicable: <i>Int'l Partner RDT&E</i>	244.584	109.511	91.386	0.000	91.386	19.400	11.620	0.000	0.000	0.000	0.000
• PE 0207142F: <i>USAF Procurement</i>	1,660.628	2,355.345	3,983.242	0.000	3,983.242	4,229.333	4,212.451	6,145.339	6,973.983	136,362.822	0.000
• PE 0204146N: <i>USN Procurement</i>	1,692.965	4,464.251	1,886.988	0.000	1,886.988	2,012.008	2,636.771	2,467.155	2,764.547	27,964.270	0.000
	0.000	0.000	2,576.142	0.000	2,576.142	2,863.025	4,016.672	3,447.547	3,451.525	22,070.323	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207142F: <i>Joint Strike Fighter Squadrons</i>	PROJECT 675346: <i>F-35</i>
--	--	---------------------------------------

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0204146M: <i>USMC Procurement</i>											
• PE not applicable (2): <i>Int'l Partner Procurement</i>	874.014	629.965	1,936.600	0.000	1,936.600	4,690.200	5,737.700	7,893.900	7,898.740	0.000	0.000
• PE 426500: <i>USN Other Procurement</i>	2.972	3.017	5.398	0.000	5.398	5.728	4.901	4.981	5.713	0.000	0.000
• PE 0207142F (3): <i>USAF Initial Spares and Repair Parts</i>	61.096	129.296	263.573	0.000	263.573	260.659	293.707	413.225	444.519	10,876.348	0.000
• PE 0204146N (4): <i>USN Initial Spares and Repair Parts</i>	182.508	248.191	107.030	0.000	107.030	92.216	178.496	194.183	192.599	2,049.006	0.000
• PE 0204146M (5): <i>USMC Initial Spares and Repair Parts</i>	0.000	0.000	164.135	0.000	164.135	136.957	311.553	325.794	324.437	1,718.297	0.000
• PE 0207142F (6): <i>USAF MILCON</i>	21.973	73.360	139.640	0.000	139.640	73.783	82.313	0.000	27.619	0.000	0.000
• PE 0212576N: <i>USN MILCON</i>	0.000	3.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207142F (7): <i>USAF Modifications</i>	0.000	0.000	123.936	0.000	123.936	8.319	5.047	3.461	31.472	0.000	0.000

D. Acquisition Strategy

Follow-on Development will continue the evolutionary approach of SDD by providing capability enhancements through an incremental methodology. The Joint Capabilities Integration and Development System (JCIDS) and Defense Acquisition System (DAS) shall provide the framework and basis for defining, managing and acquiring the envisioned F-35 enhancements. The plan for each follow-on increment will include all the development, integration and verification testing of those capabilities. Additionally, the non-recurring efforts for cut-in of retrofit, production and sustainment will be included. Retrofit planning will be based on upgrading all previously fielded aircraft to the latest increment in order to limit the number of configurations, thus reducing life cycle cost. Retrofit execution will be in accordance with the stakeholders direction.

These follow-on development efforts will be procured via cost type contracts. It is anticipated that the fee provisions will be used to target and motivate contractor performance. The new configurations will be incorporated into production and, if required by the U.S. Services or SDD International Partners, retrofitted to fielded

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207142F: <i>Joint Strike Fighter Squadrons</i>	PROJECT 675346: <i>F-35</i>
<p>aircraft under F-35 production and sustainment contracts. Similar to SDD, BOAs and ID/IQ contracts may be used for trade studies and analyses to supplement Follow-On requirements development.</p> <p>E. Performance Metrics</p> <p>Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.</p>		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207142F: <i>Joint Strike Fighter Squadrons</i>	PROJECT 675346: <i>F-35</i>
--	--	---------------------------------------

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Lockheed Martin	C/CPAF	Lockheed Martin Ft Worth TX	0.000	0.000		53.336	Jan 2011	0.000		53.336	335.997	389.333	0.000
Pratt & Whitney	SS/CPAF	Pratt & Whitney Hartford CT	0.000	0.000		4.250	Jan 2011	0.000		4.250	9.000	13.250	0.000
Systems Engineering	Various/ Various	Various Various	0.000	0.000		0.038	Oct 2010	0.000		0.038	0.281	0.319	0.000
Subtotal			0.000	0.000		57.624		0.000		57.624	345.278	402.902	0.000

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Edward AFB	Various/ Various	Edwards AFB California	0.000	0.000		0.100	Oct 2010	0.000		0.100	1.500	1.600	0.000
Subtotal			0.000	0.000		0.100		0.000		0.100	1.500	1.600	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207142F: <i>Joint Strike Fighter Squadrons</i>	PROJECT 675346: <i>F-35</i>
--	--	---------------------------------------

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Wyle	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	1.347	1.347	5.617
SAFTAS	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	5.617	5.617	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000	6.964	6.964	5.617

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	0.000	0.000		57.724		0.000		57.724	353.742	411.466	5.617

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

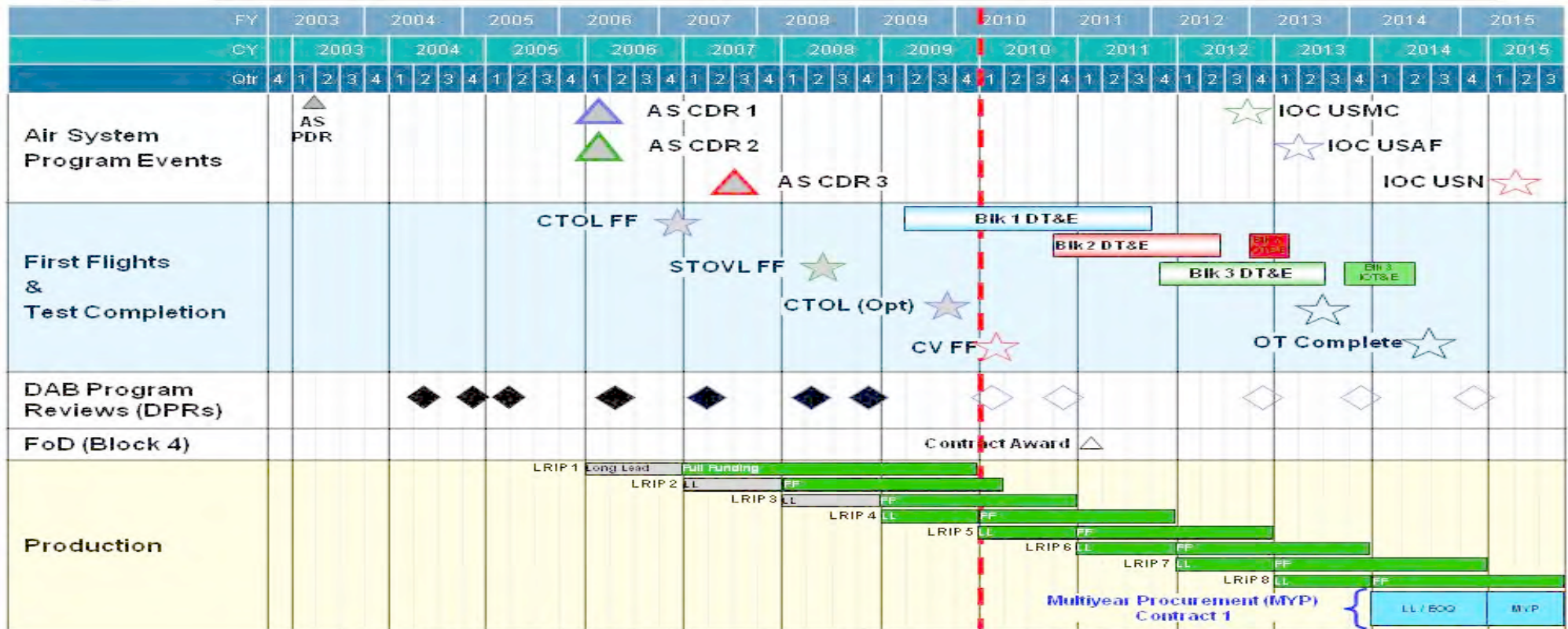
PE 0207142F: Joint Strike Fighter Squadrons

PROJECT

675346: F-35



JSF Top-Level Development Program Schedule



DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

As of Jan 10 1

UNCLASSIFIED

R-1 Line Item #135

Page 9 of 10

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207142F: *Joint Strike Fighter Squadrons*

PROJECT

675346: *F-35*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
DAB Program Review (DPR)	1	2011	1	2011
Follow-On Development Contract Award	1	2011	1	2011
LRIP 6 Block 4 Long Lead	1	2011	4	2011

UNCLASSIFIED

R-1 Line Item #135

Page 10 of 10

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161F: <i>Tactical AIM Missiles</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	5.585	5.915	6.040	0.000	6.040	6.135	6.235	6.330	6.423	Continuing	Continuing
674132: <i>AIM-9 Product Improvement</i>	5.585	5.915	6.040	0.000	6.040	6.135	6.235	6.330	6.423	Continuing	Continuing

A. Mission Description and Budget Item Justification

The AIM-9X Sidewinder short-range air-to-air missile is a long-term evolution of the AIM-9 series of fielded missiles. The AIM-9X missile program provides a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft and complements the Advanced Medium Range Air-to-Air Missile (AMRAAM). Air superiority in the short range air-to-air missile arena is essential and includes first-shot, first-kill opportunity against an enemy employing IR countermeasures. The AIM-9X employs several components common with the AIM-9M (fuse, rocket motor, and warhead). Anti-Tamper features have been incorporated to protect improvements inherent in this design. AIM-9X is a Post Milestone III, Acquisition Category 1C (ACAT 1C) joint-service program with Navy lead.

The program is in full-rate production (FRP) with Lot 9 contract awarded June 2009. Beginning with the Lot 9 contract award, the missile will include the preplanned product improvements (P3I) that resolve critical obsolescence issues such as the Active Optical Target Detector (i.e. Fuze) and the new CPU processor, as well as, improvements to the performane of the missile such as data link capabilities, battery improvements, safety improvements and appropriate software updates. This budget line item will fund the development, test and integration of software updates to the missile, as well as, aircraft platform integration, to ensure these capabilities perform in accordance with established requirements. Includes efforts to update missile components in order to comply with Insensitive Munitions requirements as established by Joint Requirements Oversight Council memo dated 11 February 2009.

The program is in budget activity 7 - Operational System Development - modifies an existing weapon system.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161F: <i>Tactical AIM Missiles</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	5.732	5.915	0.000	0.000	0.000
Current President's Budget	5.585	5.915	6.040	0.000	6.040
Total Adjustments	-0.147	0.000	6.040	0.000	6.040
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.147	0.000	6.040	0.000	6.040

Change Summary Explanation

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161F: <i>Tactical AIM Missiles</i>	PROJECT 674132: <i>AIM-9 Product Improvement</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674132: <i>AIM-9 Product Improvement</i>	5.585	5.915	6.040	0.000	6.040	6.135	6.235	6.330	6.423	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The AIM-9X Sidewinder short-range air-to-air missile is a long-term evolution of the AIM-9 series of fielded missiles. The AIM-9X missile program provides a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft and complements the Advanced Medium Range Air-to-Air Missile (AMRAAM). Air superiority in the short range air-to-air missile arena is essential and includes first-shot, first-kill opportunity against an enemy employing IR countermeasures. The AIM-9X employs several components common with the AIM-9M (fuse, rocket motor, and warhead). Anti-Tamper features have been incorporated to protect improvements inherent in this design. AIM-9X is a Post Milestone III, Acquisition Category 1C (ACAT 1C) joint-service program with Navy lead.

The program is in full-rate production (FRP) with Lot 9 contract awarded June 2009. Beginning with the Lot 9 contract award, the missile will include the preplanned product improvements (P3I) that resolve critical obsolescence issues such as the Active Optical Target Detector (i.e. Fuze) and the new CPU processor, as well as, improvements to the performane of the missile such as data link capabilities, battery improvements, safety improvements and appropriate software updates. This budget line item will fund the development, test and integration of software updates to the missile, as well as, aircraft platform integration, to ensure these capabilities perform in accordance with established requirements. Includes efforts to update missile components in order to comply with Insensitive Munitions requirements as established by Joint Requirements Oversight Council memo dated 11 February 2009.

The program is in budget activity 7 - Operational System Development - modifies an existing weapon system.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue Raytheon Missile Systems (RMS) P3I Contract	4.352	0.535	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force										DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207161F: <i>Tactical AIM Missiles</i>				PROJECT 674132: <i>AIM-9 Product Improvement</i>			
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
<p><i>FY 2011 Base Plans:</i> In FY11: Funds T&E and associated Governmental test support required to ensure the missile integration with threshold AF/Navy aircraft platforms. Funds continuation of Block II v9.3 DT for missile integration. Continues to provide for in-house and contractor support.</p> <p><i>FY 2011 OCO Plans:</i> In FY11 OCO: N/A</p>											
Accomplishments/Planned Programs Subtotals						5.585	5.915	6.040	0.000	6.040	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• Activity Not Provided: <i>PE 0603715D</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	25.000
• PE 0207161F: <i>Tactical AIM Missile Modification (BP21)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	30.817
• PE 0207161F (1): <i>Tactical AIM Missile Procurement (BP20)</i>	76.995	78.527	64.523	0.000	64.523	59.723	58.654	56.691	56.379	0.000	0.000
• PE 0207161F (2): <i>Tactical AIM Missile Procurement (BP25)</i>	4.238	0.817	3.514	0.000	3.514	7.879	8.848	10.749	10.860	0.000	0.000
• PE 0207161F (3): <i>Tactical AIM Missile Procurement (BP26)</i>	1.235	1.571	1.558	0.000	1.558	1.662	1.650	1.653	1.739	0.000	0.000
• PE 0207590F: <i>SEEK EAGLE</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.028
D. Acquisition Strategy											
The Low-Rate Initial Production (LRIP) 4, Lot 4, Firm-Fixed-Price (FFP) contract was awarded Apr 04. ASN(RD&A) approved the FRP decision in May 04. FRP 1, Lot 5 contract awarded Nov 04. FRP 1, Lot 5 through FRP 3, Lot 7 contracts awarded Nov 06. Rewards/penalties are provided depending on RMS performance relative											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161F: <i>Tactical AIM Missiles</i>	PROJECT 674132: <i>AIM-9 Product Improvement</i>
<p>to the Procurement Price Commitment Curve (PPCC) for Lots 5 through 7 (FY05 through FY07). FRP 4, Lot 8 (FY08) contract was negotiated outside of the PPCC, and was awarded in Jan 08. The FRP 5, Lot 9 (FY09) contract was awarded in Jun 09, and will be the first lot of Block II missiles (to include Tactical Test Missiles for Operational Testing, as well as, Captive Air Training Missiles for fleet release) and incorporates P3I that resolve critical obsolescence issues, as well as, missile performance improvements.</p> <p>E. Performance Metrics</p> <p>Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.</p>		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161F: <i>Tactical AIM Missiles</i>	PROJECT 674132: <i>AIM-9 Product Improvement</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
RMS Software/OFP Upgrade	C/CPIF	RMS Tucson, AZ	0.815	2.343	Dec 2009	3.247	Dec 2010	0.000		3.247	Continuing	Continuing	0.000
RMS P3I Contract	C/CPIF	RMS Tucson, AZ	4.352	0.535	Dec 2009	0.000	Dec 2010	0.000		0.000	Continuing	Continuing	0.000
Subtotal			5.167	2.878		3.247		0.000		3.247			0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
In House Support	MIPR	PMA-259 Patuxent River, MD	0.403	0.707	Dec 2009	0.497	Dec 2010	0.000		0.497	Continuing	Continuing	0.000
Subtotal			0.403	0.707		0.497		0.000		0.497			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161F: <i>Tactical AIM Missiles</i>	PROJECT 674132: <i>AIM-9 Product Improvement</i>
--	---	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DT&E/OT&E for P3I	PO	Various Various	0.015	2.330	Dec 2009	2.296	Dec 2010	0.000		2.296	Continuing	Continuing	0.000
Subtotal			0.015	2.330		2.296		0.000		2.296			0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.585	5.915		6.040		0.000		6.040			0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207161F: *Tactical AIM Missiles*

PROJECT

674132: *AIM-9 Product Improvement*

Fiscal Year	2009				2010				2011				2012				2013				2014				2015							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Primary Hardware Dev. AOTD P3I (AKA FUZE)	[Bar]				[Bar]																											
T&E Milestones																																
Software v8.2 Operational Test (OT-III B)	[OT-III B]																															
Block II (v9.2 S/W) Development Test (DT-III C)	[DT-III C]																															
Block II (v9.2 S/W) Operational Test (OT-III C)					[OT-III C]																											
Software v9.3 Development Test (DT-III D)					[DT-III D]																											
Software v9.3 Integrated Development/Operational Test (IT-III D)									[IT-III D]																							
Software v9.3 Operational Test (OT-III D)													[OT-III D]																			
Production Milestones																																
FRP Awards					△ FRP 5 Lot 9 Block II				△ FRP 6 Lot 10				△ FRP 7 Lot 11				△ FRP 8 Lot 12				△ FRP 9 Lot 13				△ FRP 10 Lot 14				△ FRP 11 Lot 15			
Deliveries	[Lot 7: 32]				[Lot 8 Deliveries: 319]				[Lot 9 Deliveries: 271]				[Lot 10 Deliveries: 380]				[Lot 11 Deliveries: 333]				[Lot 12 Deliveries: 308]				[Lot 13 Deliveries: 308]							
Production Deliveries	32	0	106	108	58	47	0	4	42	71	88	94	89	99	98	94	86	84	86	81	83	75	72	78	86	75	72	86				
Deliveries by Lot	7		8	8	8	8	9	9	9	9	9	9/10	10	10	10	10/11	11	11	11	11/12	12	12	12/13	13	13	13	13	13/14				

Note: Production Gaps between Lots 7, 8 and 9 are filled with Foreign Military Sales deliveries

UNCLASSIFIED

R-1 Line Item #136

Page 10 of 11

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161F: <i>Tactical AIM Missiles</i>	PROJECT 674132: <i>AIM-9 Product Improvement</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
AOTD P3I, Phase 1	1	2009	4	2009
AOTD P3I, Phase 2	1	2010	2	2010
Operational Test OT-III B	1	2009	1	2009
Developmental Test DT-III C	1	2009	4	2009
Operational Test OT-III C, Phase 1	4	2009	4	2009
Operational Test OT-III C, Phase 2	1	2010	2	2010
Developmental Test DT-III D, Phase 1	4	2009	4	2009
Developmental Test DT-III D, Phase 2	1	2010	1	2010
Integrated Test IT-III D, Phase 1	2	2010	4	2010
Integrated Test IT-III D, Phase 2	1	2011	3	2011
Operational Test OT-III D	4	2011	4	2011
Full Rate Production (FRP-5) Award Lot 9	3	2009	3	2009
Full Rate Production (FRP-6) Award Lot 10	2	2010	2	2010
Full Rate Production (FRP-7) Award Lot 11	1	2011	1	2011

UNCLASSIFIED

R-1 Line Item #136

Page 11 of 11

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163F: <i>Advanced Medium Range Air-to-Air Missile</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	43.633	49.971	62.922	0.000	62.922	60.935	57.648	76.477	58.317	Continuing	Continuing
673777: <i>AMRAAM</i>	43.633	49.971	62.922	0.000	62.922	60.935	57.648	76.477	58.317	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Air Force and Navy continue to develop improvements to the Advanced Medium Range Air-to-Air Missile (AMRAAM) to counter existing and emerging air vehicle threats, operating at high or low altitude and having advanced Electronic Attack (EA) capabilities. The AMRAAM Pre-Planned Product Improvement (P3I) program allows the Air Force and Navy to continue a joint research and development program. This enables AMRAAM to be compatible with advanced fighters, enhances AMRAAM capability and operational flexibility against 2010 and beyond threats, incorporates high payoff technology developments, performs risk reduction activities and investigates new variants and/or alternate missions which may use AMRAAM attributes.

AIM-120D (Phase 4) delivers improved performance via GPS-aided navigation, a two-way datalink capability for enhanced aircrew survivability and improved network compatibility, and incorporates new guidance software which improves kinematic and weapon effectiveness performance. Phase 4 Functional Configuration Audit (FCA) was successfully completed in September 09 with Operational Test (OT) starting in FY10 and Initial Operational Capability (IOC) on the F/A-18 E/F and F-15 C/D expected in FY11. In addition to integration on these IOC platforms, the program includes integration of the missile onto the F-16, F-15E, F-22A, and F-18 C/D.

To keep the existing inventory as effective as possible, the AF and Navy also develop, test and incorporate improvements that are implemented via software upgrades reprogrammed into fielded weapons, and/or hardware upgrades inserted into production units. AMRAAM is a joint Air Force/Navy, Acquisition Category IC (ACAT IC) program with Air Force as lead service.

This program is in budget activity 7 - Operational System Development, providing upgrades to AIM-120 missiles currently fielded or in production.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163F: <i>Advanced Medium Range Air-to-Air Missile</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	54.092	49.971	0.000	0.000	0.000
Current President's Budget	43.633	49.971	62.922	0.000	62.922
Total Adjustments	-10.459	0.000	62.922	0.000	62.922
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-10.459	0.000	62.922	0.000	62.922

Change Summary Explanation

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163F: <i>Advanced Medium Range Air-to-Air Missile</i>	PROJECT 673777: <i>AMRAAM</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
673777: <i>AMRAAM</i>	43.633	49.971	62.922	0.000	62.922	60.935	57.648	76.477	58.317	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Air Force and Navy continue to develop improvements to the Advanced Medium Range Air-to-Air Missile (AMRAAM) to counter existing and emerging air vehicle threats, operating at high or low altitude and having advanced Electronic Attack (EA) capabilities. The AMRAAM Pre-Planned Product Improvement (P3I) program allows the Air Force and Navy to continue a joint research and development program. This enables AMRAAM to be compatible with advanced fighters, enhances AMRAAM capability and operational flexibility against 2010 and beyond threats, incorporates high payoff technology developments, performs risk reduction activities and investigates new variants and/or alternate missions which may use AMRAAM attributes.

AIM-120D (Phase 4) delivers improved performance via GPS-aided navigation, a two-way datalink capability for enhanced aircrew survivability and improved network compatibility, and incorporates new guidance software which improves kinematic and weapon effectiveness performance. Phase 4 Functional Configuration Audit (FCA) was successfully completed in September 09 with Operational Test (OT) starting in FY10 and Initial Operational Capability (IOC) on the F/A-18 E/F and F-15 C/D expected in FY11. In addition to integration on these IOC platforms, the program includes integration of the missile onto the F-16, F-15E, F-22A, and F-18 C/D.

To keep the existing inventory as effective as possible, the AF and Navy also develop, test and incorporate improvements that are implemented via software upgrades reprogrammed into fielded weapons, and/or hardware upgrades inserted into production units. AMRAAM is a joint Air Force/Navy, Acquisition Category IC (ACAT IC) program with Air Force as lead service.

This program is in budget activity 7 - Operational System Development, providing upgrades to AIM-120 missiles currently fielded or in production.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Provide software upgrades/system improvement/electronic protection (SWUP/SIP/EP)	5.282	29.323	45.097	0.000	45.097

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010																			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207163F: <i>Advanced Medium Range Air-to-Air Missile</i>		PROJECT 673777: <i>AMRAAM</i>																			
B. Accomplishments/Planned Program (\$ in Millions)																							
<table border="1"> <thead> <tr> <th></th> <th>FY 2009</th> <th>FY 2010</th> <th>FY 2011 Base</th> <th>FY 2011 OCO</th> <th>FY 2011 Total</th> </tr> </thead> <tbody> <tr> <td> <p>new software improvement candidates. A concept refinement/risk reduction contract will be awarded to continue evaluation/maturation of and prototyping for selected hardware candidates. Continue mission support and provide program management to execute SWUP/SIP/EP efforts.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p> </td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> <p>MAJOR THRUST: Continue test and evaluation: Provide support to DT/OT</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Completed AIM-120D Developmental Test & Evaluation (DT&E) captive carry and free flight testing on F/A-18E/F and F-15C/D at China Lake and Eglin AFB, respectively. Planned and initiated execution of a DT/OT phase to reduce overall missile/aircraft weapon system risk entering dedicated AIM-120D Operational Test (OT). Continued planning for dedicated OT, and made investments in infrastructure required for dedicated AIM-120D OT, AIM-120D SIP DT/OT, and AIM-120C SWUP activities.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Complete AIM-120D DT/OT testing. Accomplish OT Readiness Review (OTRR), and certify the missile ready for dedicated OT. Start dedicated OT captive carry and free flight testing on F/A-18E/F and F-15C/D, and continue infrastructure investments to support AIM-120D OT, SIP, and SWUP activities.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Complete AIM-120D dedicated OT and provide USAF/USN fielding recommendations for the AIM-120D missile system, and provide the final AIM-120D dedicated OT report through Service chains to OSD/DOT&E. Continue infrastructure investments to support AIM-120D OT, SIP, and SWUP activities.</p> </td> <td align="right">15.887</td> <td align="right">14.096</td> <td align="right">3.047</td> <td align="right">0.000</td> <td align="right">3.047</td> </tr> </tbody> </table>							FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	<p>new software improvement candidates. A concept refinement/risk reduction contract will be awarded to continue evaluation/maturation of and prototyping for selected hardware candidates. Continue mission support and provide program management to execute SWUP/SIP/EP efforts.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>						<p>MAJOR THRUST: Continue test and evaluation: Provide support to DT/OT</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Completed AIM-120D Developmental Test & Evaluation (DT&E) captive carry and free flight testing on F/A-18E/F and F-15C/D at China Lake and Eglin AFB, respectively. Planned and initiated execution of a DT/OT phase to reduce overall missile/aircraft weapon system risk entering dedicated AIM-120D Operational Test (OT). Continued planning for dedicated OT, and made investments in infrastructure required for dedicated AIM-120D OT, AIM-120D SIP DT/OT, and AIM-120C SWUP activities.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Complete AIM-120D DT/OT testing. Accomplish OT Readiness Review (OTRR), and certify the missile ready for dedicated OT. Start dedicated OT captive carry and free flight testing on F/A-18E/F and F-15C/D, and continue infrastructure investments to support AIM-120D OT, SIP, and SWUP activities.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Complete AIM-120D dedicated OT and provide USAF/USN fielding recommendations for the AIM-120D missile system, and provide the final AIM-120D dedicated OT report through Service chains to OSD/DOT&E. Continue infrastructure investments to support AIM-120D OT, SIP, and SWUP activities.</p>	15.887	14.096	3.047	0.000	3.047
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total																		
<p>new software improvement candidates. A concept refinement/risk reduction contract will be awarded to continue evaluation/maturation of and prototyping for selected hardware candidates. Continue mission support and provide program management to execute SWUP/SIP/EP efforts.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>																							
<p>MAJOR THRUST: Continue test and evaluation: Provide support to DT/OT</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Completed AIM-120D Developmental Test & Evaluation (DT&E) captive carry and free flight testing on F/A-18E/F and F-15C/D at China Lake and Eglin AFB, respectively. Planned and initiated execution of a DT/OT phase to reduce overall missile/aircraft weapon system risk entering dedicated AIM-120D Operational Test (OT). Continued planning for dedicated OT, and made investments in infrastructure required for dedicated AIM-120D OT, AIM-120D SIP DT/OT, and AIM-120C SWUP activities.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Complete AIM-120D DT/OT testing. Accomplish OT Readiness Review (OTRR), and certify the missile ready for dedicated OT. Start dedicated OT captive carry and free flight testing on F/A-18E/F and F-15C/D, and continue infrastructure investments to support AIM-120D OT, SIP, and SWUP activities.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Complete AIM-120D dedicated OT and provide USAF/USN fielding recommendations for the AIM-120D missile system, and provide the final AIM-120D dedicated OT report through Service chains to OSD/DOT&E. Continue infrastructure investments to support AIM-120D OT, SIP, and SWUP activities.</p>	15.887	14.096	3.047	0.000	3.047																		

UNCLASSIFIED

R-1 Line Item #137

Page 6 of 13

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163F: <i>Advanced Medium Range Air-to-Air Missile</i>	PROJECT 673777: <i>AMRAAM</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.						
MAJOR THRUST: Aircraft Integration - Integrate Phase 4 on multiple aircraft platforms <i>FY 2009 Accomplishments:</i> In FY2009: Continued effort to integrate and flight test AIM-120D into the F-15C/D Suite 6M OFP. This OFP supports AIM-120D OT. Effort includes bench testing of missile software updates, aircraft OFP releases, weapon trainer updates and software anomaly investigations and fixes. Funds development/integration of AIM-120D into the F-15E Suite 6E OFP. Effort includes bench testing of missile software updates, aircraft OFP releases, and software anomaly investigations and fixes. Supports the initial development and integration of AIM-120D into the F-16 M6+ OFP. Effort included design, code, SIL testing, flight testing, weapon trainer updates and anomaly investigations and fixes. Provides funding for Raytheon to support all aircraft integration activities on the F-15C/D, F-15E, F-16 and F-22. This effort includes flight test support, bench & SIL test support, AIM-120D asset management and technical review support. <i>FY 2010 Plans:</i> In FY2010: Funding supports F-15C/D Suite 6M fielding and potential OFP updates as a result of AIM-120D OT. Support the AIM-120D F-15E Suite 6E+ flight test effort, to include live launches. Continue F-16 M6+ integration and flight test effort. Fund initial AIM-120D requirement definition and integration into F-22 Increment 3.2. Funds Raytheon to support all aircraft integration activities on the F-15C/D, F-15E, F-16 and F-22. Effort includes flight test support, bench & SIL test support, AIM-120D asset management and technical review support. <i>FY 2011 Base Plans:</i> In FY2011: Continue support of F-15C/D Suite 6M OFP updates as a result of AIM-120D OT. Support the F-15E Suite 6E+ Force Development Evaluation. Continue F-16 M6+ integration and flight test effort, to include live launches. Fund AIM-120D integration and testing into F-22 Increment 3.2.		13.964	6.552	14.778	0.000	14.778

UNCLASSIFIED

R-1 Line Item #137

Page 7 of 13

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163F: <i>Advanced Medium Range Air-to-Air Missile</i>	PROJECT 673777: <i>AMRAAM</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Provide funding for Raytheon to support all aircraft integration activities on the F-15C/D, F-15E, F-16 and F-22. This effort includes flight test support, bench & SIL test support, AIM-120D asset management and technical review support. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
MAJOR THRUST: Joint Dual Role Air Dominance Missile (JDRADM) <i>FY 2009 Accomplishments:</i> In FY2009: Risk Reduction continued in the warhead, GIF, and rocket motor; and started UAI effort for the next gen missile. MRROKM completed 3 isotropic warhead live fire tests at 10 targets. SITES brought on second contractor to merge the seeker and proximity fuze of a tactical missile into a single system. <i>FY 2010 Plans:</i> In FY2010: N/A. <i>FY 2011 Base Plans:</i> In FY2011: N/A. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.	8.500	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	43.633	49.971	62.922	0.000	62.922

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0207163F: <i>AMRAAM (BP20)</i>	202.741	272.714	355.358	0.000	355.358	311.456	473.683	458.075	462.619	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163F: <i>Advanced Medium Range Air-to-Air Missile</i>	PROJECT 673777: <i>AMRAAM</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207163F (1): <i>AMRAAM (BP25)</i>	0.211	0.801	0.798	0.000	0.798	0.805	0.805	0.811	0.810	0.000	0.000
• PE 0207163F (2): <i>AMRAAM (BP26)</i>	2.155	0.077	0.079	0.000	0.079	0.082	0.082	0.084	0.085	0.000	0.000
• PE 0207163F (3): <i>AMRAAM (BP22)</i>	5.739	5.249	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The AIM-120D development completed Sep 09 with the accomplishment of a successful FCA. Initial AIM-120D production units were delivered beginning in Aug 09 and are continuing per contract requirements. The AIM-120D Missile Performance Specification (MPS) and Interface Control Document (ICD) define the requirement to integrate the Phase 4 AMRAAM onto the F-15, F-16, and F-22A; with integration activities supported via a series of contractual efforts managed via the host platform programs. For AMRAAM upgrades, contracts are awarded to analyze potential candidates to improve the AIM-120C/D configurations to provide the warfighter the capability to counter current and emerging threats. Candidates that are at the appropriate level of technical maturity will be incorporated via a series of design implementation contracts. Less mature high-payoff candidates will continue to be developed further via concept refinement/risk reduction contracts for incorporation in future development activities.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163F: <i>Advanced Medium Range Air-to-Air Missile</i>	PROJECT 673777: <i>AMRAAM</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SWUP/SIP/EP	SS/CPFF	Raytheon Tucson, AZ	1.727	27.606	Mar 2010	43.452	Jan 2011	0.000		43.452	Continuing	Continuing	Continuing
Phase 4 Contract FA8675-04-C-0001	SS/CPFF	Raytheon Tucson, AZ	3.504	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Aircraft Integration	MIPR	Wright-Patterson AFB Dayton, OH	11.464	6.552	Jan 2010	14.778	Jan 2011	0.000		14.778	Continuing	Continuing	Continuing
JDRADM	Various/ Various	Various Various	8.500	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			25.195	34.158		58.230		0.000		58.230			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Contractor Support	WR	Various Various	0.763	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
JSPO Operations	WR	Various Various	1.788	1.717		1.645		0.000		1.645	Continuing	Continuing	Continuing
Subtotal			2.551	1.717		1.645		0.000		1.645			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163F: <i>Advanced Medium Range Air-to-Air Missile</i>	PROJECT 673777: <i>AMRAAM</i>
--	--	---

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Test	WR	Various Various	15.887	14.096		3.047		0.000		3.047	Continuing	Continuing	Continuing
Subtotal			15.887	14.096		3.047		0.000		3.047			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	43.633	49.971		62.922		0.000		62.922			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

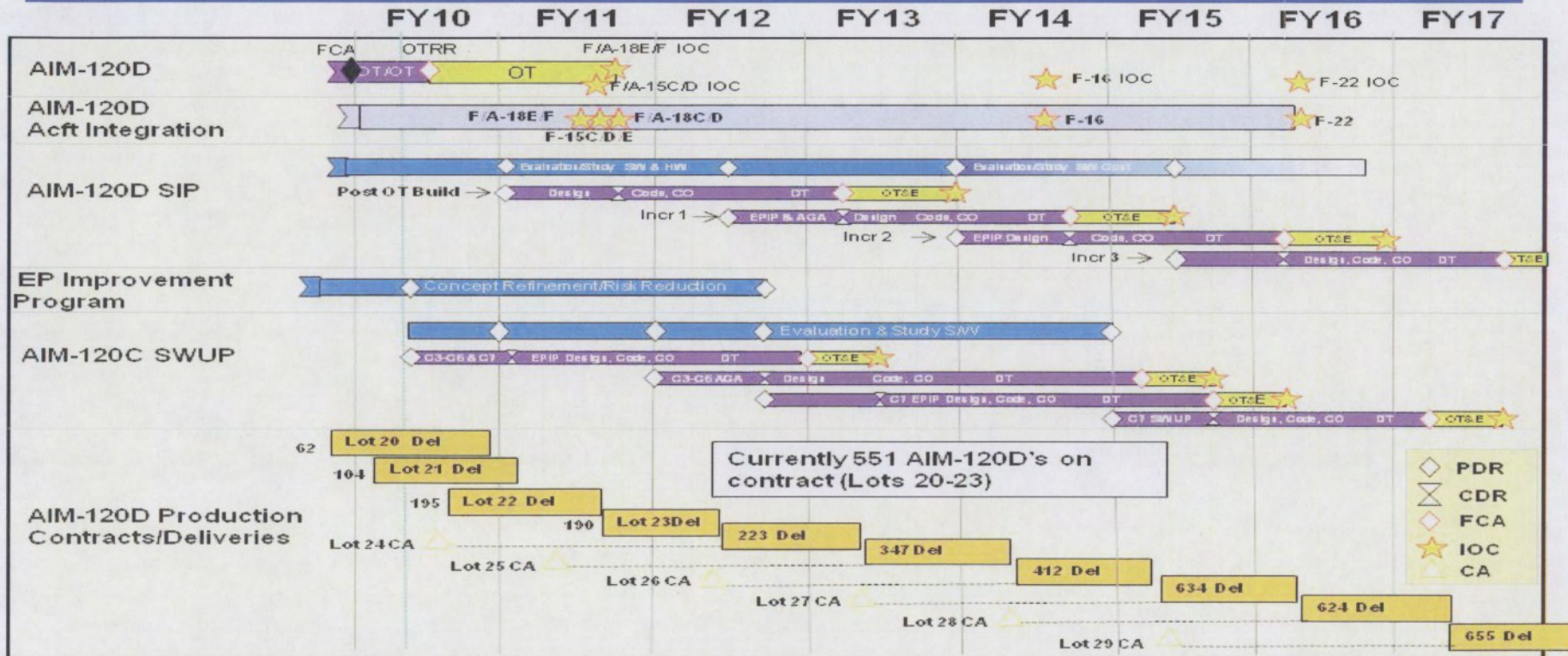
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0207163F: Advanced Medium Range Air-to-Air Missile

PROJECT
 673777: AMRAAM



AMRAAM Schedule



UNCLASSIFIED

R-1 Line Item #137
 Page 12 of 13

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163F: <i>Advanced Medium Range Air-to-Air Missile</i>	PROJECT 673777: <i>AMRAAM</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Lot 23 (FY09) contract award	3	2009	3	2009
Functional Configuration Audit (FCA)	4	2009	4	2009
SIP contract award	4	2009	4	2009
Lot 24 (FY10) contract award	2	2010	2	2010
AIM-120C EPIP Increment 1 PDR	2	2010	2	2010
EP/SWUP increment 1 contract award	2	2010	2	2010
AIM-120C SWUP contract award	2	2010	2	2010
AIM-120D SIP Post-OT build contract award	1	2011	1	2011
AIM-120D SIP Post-OT build PDR	1	2011	1	2011
Lot 25 (FY11) contract award	2	2011	2	2011

UNCLASSIFIED

R-1 Line Item #137

Page 13 of 13

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207170F: <i>JHMCS</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	3.095	2.529	2.407	0.000	2.407	2.441	2.476	2.512	2.549	Continuing	Continuing
675226: <i>Joint Helmet Mounted Cueing System</i>	3.095	2.529	2.407	0.000	2.407	2.441	2.476	2.512	2.549	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Joint Helmet Mounted Cueing System (JHMCS) develops a helmet display system capable of depicting aircraft heading data, pilot's viewing perspective, target indication tracking/cueing, and other information on the aircrew visor to enhance pilot situational awareness. This display allows the pilot to quickly align platform sensors and weapons on targets, and engage threats using high off-boresight (HOBS) weapons such as the AIM-9X. JHMCS is a Post Milestone III, Acquisition Category III (ACAT-III) joint AF/Navy program with the AF as the lead service.

Program is in full rate production (FRP). Continuing activities include deficiency resolution; improvements to tooling and test equipment; Electronic Unit (EU) obsolescence/Diminishing Manufacturing Sources (DMS) redesign; a systems engineering approach for implementing alternate displays; improvements to integrate night vision cueing display (NVCD); software updates; platform integration; improvements to Reliability and Maintainability (R&M); system upgrade studies and analysis; other obsolescence upgrades; improved magnetic mapping processes to reduce maintenance manhours/life cycle costs; and efforts to support the transition to Performance Based Logistics Partnership (PBL/P) and depot activation.

This program is in budget activity 7 - Operational System Development - modification of existing aircraft.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207170F: <i>JHMCS</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	3.183	2.529	0.000	0.000	0.000
Current President's Budget	3.095	2.529	2.407	0.000	2.407
Total Adjustments	-0.088	0.000	2.407	0.000	2.407
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.088	0.000	2.407	0.000	2.407

Change Summary Explanation

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

R-1 Line Item #138

Page 2 of 9

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207170F: <i>JHMCS</i>	PROJECT 675226: <i>Joint Helmet Mounted Cueing System</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675226: <i>Joint Helmet Mounted Cueing System</i>	3.095	2.529	2.407	0.000	2.407	2.441	2.476	2.512	2.549	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This joint Air Force/Navy program (Air Force is the lead service) develops a helmet display system capable of depicting aircraft heading data, pilot's viewing perspective, target indication tracking/cueing, and other information on the aircrew visor to enhance pilot situational awareness. This display allows the pilot to quickly align platform sensors and weapons on targets, and engage threats using high off-boresight (HOBS) weapons such as the AIM-9X.

Milestone III was approved in Jan 04, the first Full Rate Production (FRP) contract was awarded May 04, followed by FRP-2 in Jun 05. Continuing activities include, but are not limited to, deficiency resolution; improvements to tooling and test equipment; Electronic Unit obsolescence redesign; a systems engineering approach for implementing alternate displays; improvements to integrate night vision cueing display (NVCD); software updates; integration; improvements to Reliability and Maintainability (R&M); system upgrade studies/analysis; other obsolescence upgrades; improved magnetic mapping processes to reduce maintenance manhours and life cycle costs; and efforts to support the transition to Performance Based Logistics Partnership (PBL/P) and depot activation.

This program is in budget activity 7 - Operational System Development - because it is a modification of existing aircraft.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue P3I efforts, software updates and FOT&E <i>FY 2009 Accomplishments:</i> In FY 2009: Continued deficiency resolution, reliability improvements, P3I activities, obsolescence upgrades, analysis/studies, alternate displays implementation, support for PBL/Depot line, and software updates. Continue incorporating night vision capabilities into JHMCS by testing and	3.095	2.529	2.407	0.000	2.407

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207170F: <i>JHMCS</i>		PROJECT 675226: <i>Joint Helmet Mounted Cueing System</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
integrating the NVCD system. Continued mission support and provide program management to execute P3I and software development efforts. <i>FY 2010 Plans:</i> In FY 2010: Continue deficiency resolution, reliability improvements, P3I activities, obsolescence upgrades, analysis/studies, alternate displays implementation, and software updates. Develop and qualify helmet display unit (HDU) durability improvements to increase field availability and reduce spare costs. Continue incorporating night vision capabilities into JHMCS by testing and integrating the NVCD system. Continue mission support and provide program management to execute P3I and software development efforts. <i>FY 2011 Base Plans:</i> In FY 2011: Continue deficiency resolution, reliability improvements, P3I activities, obsolescence upgrades, analysis/studies, alternate displays implementation, and software updates. Develop and qualify an improvement for the lower helmet vehicle interface (LHVI) to reduce connector pin damage, increase field availability, and reduce repair and spare costs. Continue incorporating night vision capabilities into JHMCS by testing and integrating the NVCD system. Continue mission support and provide program management to execute P3I and software development efforts. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.								
Accomplishments/Planned Programs Subtotals				3.095	2.529	2.407	0.000	2.407

UNCLASSIFIED

R-1 Line Item #138

Page 4 of 9

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207170F: <i>JHMCS</i>	PROJECT 675226: <i>Joint Helmet Mounted Cueing System</i>
--	---	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0604201F: <i>Integrated Avionics Planning and Development (RDT&E, BA 5)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	45.200
• PE 0604012F: <i>JHMCS (RDT&E, BA 5)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	17.900

D. Acquisition Strategy

JHMCS is an ACAT III joint USAF/USN program with AF as lead service. The development contract was Cost Plus Award Fee (CPAF) through Boeing - St. Louis for development/integration on the F-15, F-16, and F/A-18 aircraft. All other aircraft integration will be handled by the respective platform prime contractors. Follow-on contracts are a mixture of CPAF and Firm Fixed Price (FFP). Currently, a transition from Interim Contractor Support (ICS) to a WRALC Mission Support Division (MSD) funded support posture is being worked. Also, an organic depot partnership is being developed.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0207170F: <i>JHMCS</i>					PROJECT 675226: <i>Joint Helmet Mounted Cueing System</i>				

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Continue deficiency resolution, R&M improvements, P3I activities, obsolescence upgrades, analysis/ studies, alternate displays implementation, various T&E activities, and software updates. Continue i...	SS/CPAF	Boeing Co St Louis, MO	2.595	2.029	Dec 2010	1.913	Dec 2011	0.000		1.913	Continuing	Continuing	Continuing
Subtotal			2.595	2.029		1.913		0.000		1.913			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management and Administration	TM	Various Various	0.500	0.500	Dec 2010	0.494	Dec 2011	0.000		0.494	Continuing	Continuing	Continuing
Subtotal			0.500	0.500		0.494		0.000		0.494			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207170F: <i>JHMCS</i>	PROJECT 675226: <i>Joint Helmet Mounted Cueing System</i>

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.095	2.529	2.407	0.000	2.407			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

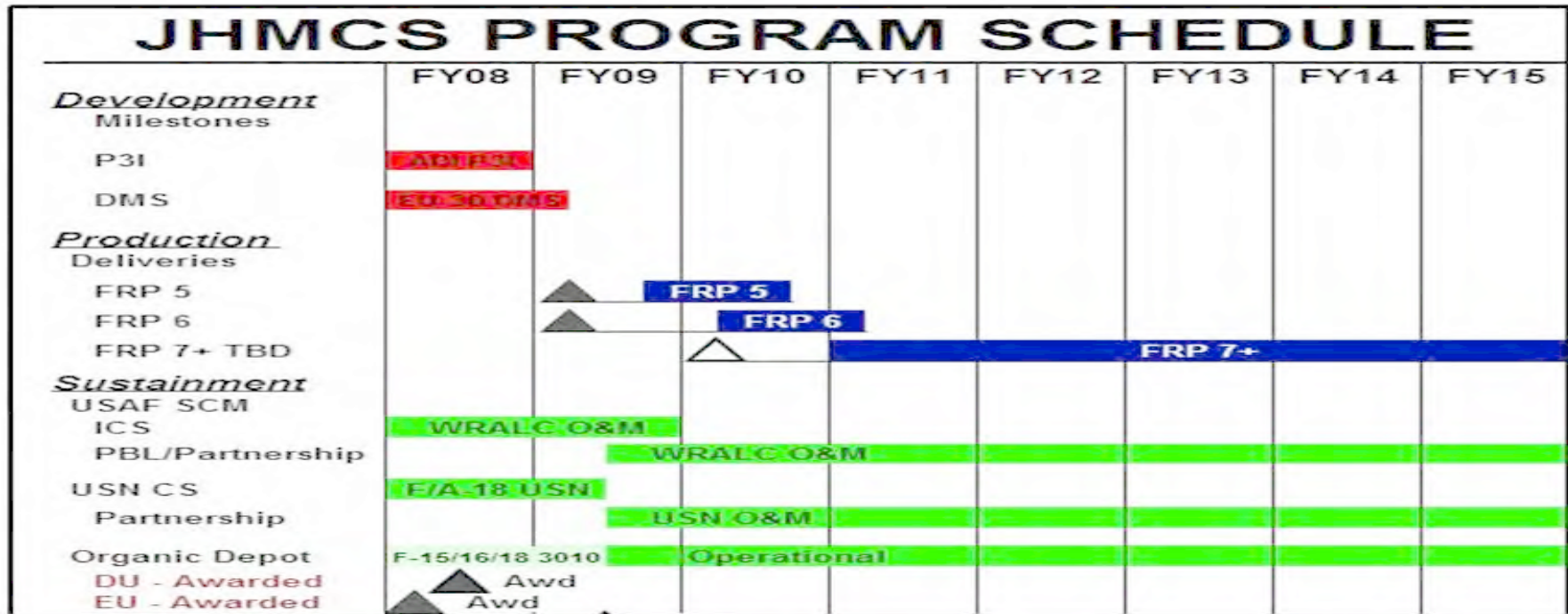
3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207170F: *JHMCS*

PROJECT

675226: *Joint Helmet Mounted Cueing System*



UNCLASSIFIED

R-1 Line Item #138

Page 8 of 9

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207170F: <i>JHMCS</i>	PROJECT 675226: <i>Joint Helmet Mounted Cueing System</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
FRP-5 Contract Award	1	2009	1	2009
Alternate Displays Implementation Contract Complete	1	2009	1	2009
FRP-6 Contract Award	1	2009	1	2009
FRP-7 Contract Award	1	2010	1	2010
R&M Upgrades increment 1	2	2010	4	2010
FRP-8 Contract Award	1	2011	1	2011
R&M Upgrades increment 2	1	2011	3	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207224F: <i>COMBAT RESCUE AND RECOVERY</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.944	0.000	0.944	0.000	0.000	0.000	0.000	Continuing	Continuing
671325: <i>HH-60G</i>	0.000	0.000	0.944	0.000	0.944	0.000	0.000	0.000	0.000	0.000	0.946

A. Mission Description and Budget Item Justification

The Mode 5 modification program is an OSD-mandated upgrade to the HH-60G's Identification, Friend or Foe (IFF) system--the primary means of aircraft identification during Air Defense operations.

In order to fully implement Mode 5, the HH-60G aircraft require a Global Positioning System update. Costs are only estimates at this time and are subject to contract negotiation and award.

This program is in Budget Activity 7, Operational System Development, since it improves the already fielded capabilities of the HH-60G Pave Hawk helicopter.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	0.944	0.000	0.944
Total Adjustments	0.000	0.000	0.944	0.000	0.944
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.944	0.000	0.944

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207224F: *COMBAT RESCUE AND RECOVERY*

Change Summary Explanation

The Mode 5 modification program is an OSD-mandated upgrade to the HH-60G's IFF system--the primary means of aircraft identification during Air Defense operations.

UNCLASSIFIED

R-1 Line Item #139

Page 2 of 8

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207224F: <i>COMBAT RESCUE AND RECOVERY</i>	PROJECT 671325: <i>HH-60G</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
671325: <i>HH-60G</i>	0.000	0.000	0.944	0.000	0.944	0.000	0.000	0.000	0.000	0.000	0.946
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Mode 5 modification is an OSD mandated upgrade to the HH-60G's IFF system (the primary means of aircraft identification during Air Defense operations). The Mode 5 upgrade will increase anti-spoofing/exploitation capabilities, and lower the possibility of aircraft/aircrew loss due to misidentification of friendly aircraft. The modification will include a new Mode 5 crypto applique, new IFF control panel, a circuit card upgrade to the APX-119 transponder, and support equipment upgrades.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: Studies, analysis, program office support, development of an acquisition strategy and test plan, support of source selection activities.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: N/A</p> <p><i>FY 2010 Plans:</i> In FY 2010: N/A</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Studies, analysis, program office support, development of an acquisition strategy and test plan, support of source selection activities.</p> <p><i>FY 2011 OCO Plans:</i> In FY2011 OCO: N/A</p>	0.000	0.000	0.944	0.000	0.944
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.944	0.000	0.944

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207224F: <i>COMBAT RESCUE AND RECOVERY</i>	PROJECT 671325: <i>HH-60G</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207224F: <i>Combat Rescue and Recovery</i>	0.000	0.000	1.780	0.000	1.780	4.880	4.880	4.880	0.000	0.000	0.000

D. Acquisition Strategy

The HH-60 will upgrade its Mode 5/GPS in concert with current modifications as aircraft become available.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207224F: <i>COMBAT RESCUE AND RECOVERY</i>	PROJECT 671325: <i>HH-60G</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NRE	TBD/TBD	TBD TBD	0.000	0.000		0.400	Apr 2012	0.000		0.400	0.000	0.400	0.000
Software Development	TBD/TBD	TBD TBD	0.000	0.000		0.300	Apr 2012	0.000		0.300	0.000	0.300	0.000
Subtotal			0.000	0.000		0.700		0.000		0.700	0.000	0.700	0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
No text provided	TBD/TBD	No text provided No text provided	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207224F: <i>COMBAT RESCUE AND RECOVERY</i>	PROJECT 671325: <i>HH-60G</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Gov Test and Evaluation (Mode 5)	TBD/TBD	TBD TBD	0.000	0.000		0.244	Jun 2012	0.000		0.244	0.000	0.244	0.000
Subtotal			0.000	0.000		0.244		0.000		0.244	0.000	0.244	0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		0.000	0.000	0.944	0.000	0.944	0.000	0.944

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

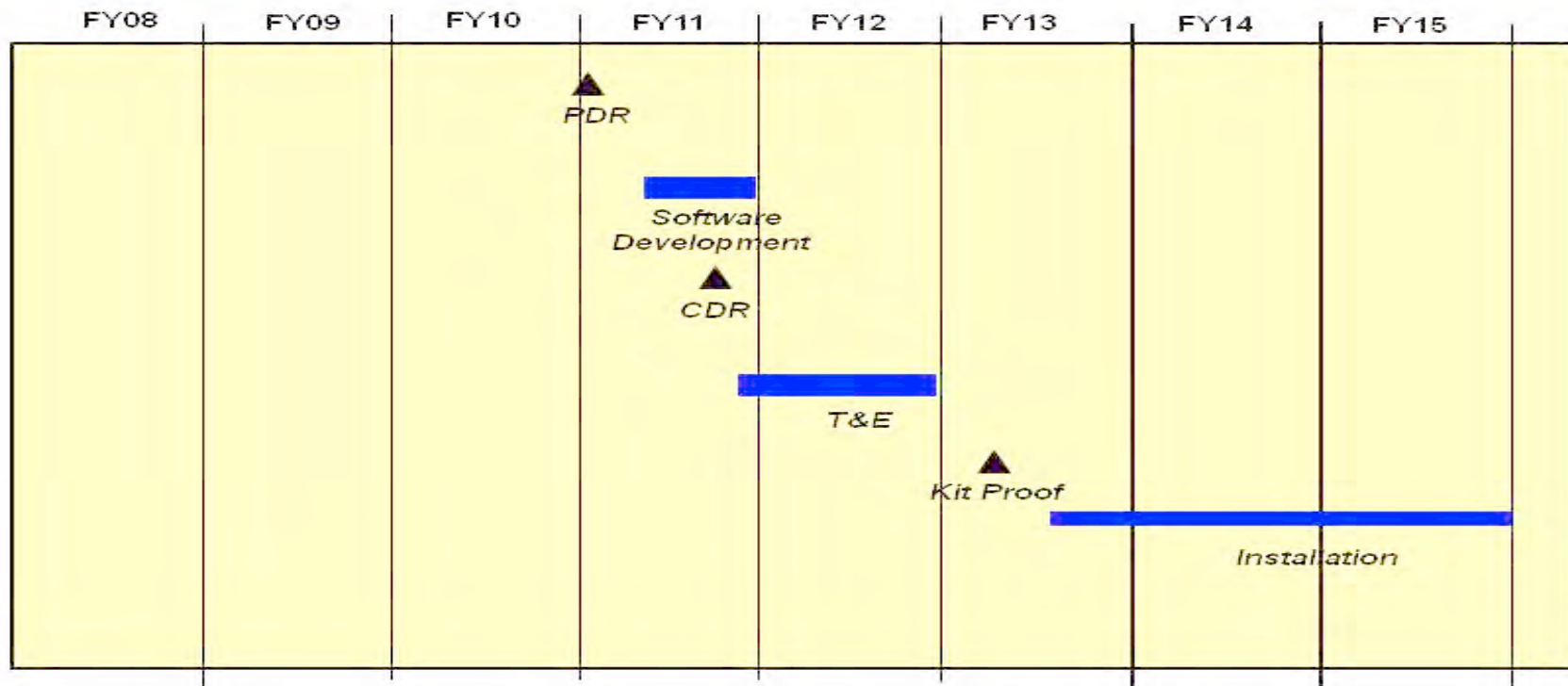
APPROPRIATION/BUDGET ACTIVITY
 3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0207224F: *COMBAT RESCUE AND RECOVERY*

PROJECT
 671325: *HH-60G*



HH-60G Mode 5 Schedule



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207224F: <i>COMBAT RESCUE AND RECOVERY</i>	PROJECT 671325: <i>HH-60G</i>
--	--	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Preliminary Design Review (PDR)	1	2011	1	2011
Critical Design Review	4	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207227F: <i>Pararescue (Guardian Angel Weapon System)</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	2.950	2.921	0.000	2.921	0.000	0.000	0.000	0.000	Continuing	Continuing
675352: <i>Guardian Angel RDT&E</i>	0.000	2.950	2.921	0.000	2.921	0.000	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification

GUARDIAN ANGEL (GA) is an Air Force non-aircraft weapon system program within the overarching Battlefield Airmen Modernization program. GA is a Family of Systems (FoS) – based in both human and equipment capabilities – formulated to execute Air Force Combat Search and Rescue (CSAR) and Personnel Recovery (PR) across the full spectrum of military operations. Established by the Air Force Chief of Staff in 2003 and officially captured in AFD 10-9, the GA FoS is employed by three distinct Air Force specialties: Pararescuemen (PJ), Survival-Evasion-Resistance-Escape (SERE), and Combat Rescue Officer (CRO). The GA program will standardize and modernize mission essential equipment utilized in extrication, surface/underwater search and recovery, airborne infil/exfil and ground recovery operations. The FY10 funds will be used to develop items within the FoS to include but not limited to: Guardian Angel Advanced Parachute System, CSAR SONAR, Maritime Recovery, Technical Recovery kits, Guardian Angel Operations Kit and the Guardian Angel Rescue Vehicle.

This program is in Budget Activity 7, Operational System Development, since it improves the already fielded capabilities of the Guardian Angel weapon system by demonstrating technology, component and subsystem maturity.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	2.950	0.000	0.000	0.000
Current President's Budget	0.000	2.950	2.921	0.000	2.921
Total Adjustments	0.000	0.000	2.921	0.000	2.921
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	2.921	0.000	2.921

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207227F: <i>Pararescue (Guardian Angel Weapon System)</i>	PROJECT 675352: <i>Guardian Angel RDT&E</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675352: <i>Guardian Angel RDT&E</i>	0.000	2.950	2.921	0.000	2.921	0.000	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

GUARDIAN ANGEL (GA) is an Air Force non-aircraft weapon system program within the overarching Battlefield Airmen Modernization program. GA is a Family of Systems (FoS) – based in both human and equipment capabilities – formulated to execute Air Force Combat Search and Rescue (CSAR) and Personnel Recovery (PR) across the full spectrum of military operations. Established by the Air Force Chief of Staff in 2003 and officially captured in AFPD 10-9, the GA FoS is employed by three distinct Air Force specialties: Pararescuemen (PJ), Survival-Evasion-Resistance-Escape (SERE), and Combat Rescue Officer (CRO). The GA program will standardize and modernize mission essential equipment utilized in extrication, surface/underwater search and recovery, airborne infil/exfil and ground recovery operations. The FY10 funds will be used to develop items within the FoS to include but not limited to: Guardian Angel Advanced Parachute System, CSAR SONAR, Maritime Recovery, Technical Recovery kits, Guardian Angel Operations Kit and the Guardian Angel Rescue Vehicle.

This program is in Budget Activity 7, Operational System Development, since it improves the already fielded capabilities of the Guardian Angel weapon system by demonstrating technology, component and subsystem maturity.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Standardize, modernize, and develop additional capability for the weapons system used by Combat Rescue Officers and Pararescuemen. <i>FY 2009 Accomplishments:</i> In FY 2009: N/A	0.000	2.950	2.921	0.000	2.921

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207227F: <i>Pararescue (Guardian Angel Weapon System)</i>	PROJECT 675352: <i>Guardian Angel RDT&E</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Studies, analysis, program office support, development of an acquisition strategy and test and evaluation plan, and preparation of other documents as needed to modernize the Guardian Angel Weapons System.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Studies, analysis, program office support, development of an acquisition strategy and test and evaluation plan, and preparation of other documents as needed to modernize the Guardian Angel Weapons System.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>					
Accomplishments/Planned Programs Subtotals	0.000	2.950	2.921	0.000	2.921

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0207227: <i>Pararescue (Guardian Angel Weapon System)</i>	14.750	9.161	5.334	0.000	5.334	9.280	12.859	13.180	14.221	0.000	78.785

D. Acquisition Strategy

The GA program will address the warfighter immediate needs to standardize, modernize, and develop additional capability for the weapon system used by Combat Rescue Officers and Pararescuemen (Phase one). Until this point, GA has not had a formal acquisition process for the weapon system. The program will also address future requirements for the weapon system that will encompass the needs of all three GA career fields (Phase two). Phase two of the GA program is an incremental evolutionary acquisition effort in which requirements are fulfilled through further sub-system development and integration. These requirements are being identified in an ongoing F-study conducted by HQ ACC. The program has been divided into two phases to more rapidly meet the users immediate need to standardize and modernize the weapon system. All work prior to FY10 was accomplished using 3400 dollars and NGREA 350 funds. NGREA funding is not shown here.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207227F: <i>Pararescue (Guardian Angel Weapon System)</i>	PROJECT 675352: <i>Guardian Angel RDT&E</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207227F: <i>Pararescue (Guardian Angel Weapon System)</i>				PROJECT 675352: <i>Guardian Angel RDT&E</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GA FOS	Various/ Various	TBD TBD	0.000	2.190	May 2010	2.371	Mar 2011	0.000		2.371	Continuing	Continuing	Continuing
Subtotal			0.000	2.190		2.371		0.000		2.371			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
No text provided	TBD/TBD	No text provided No text provided	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207227F: <i>Pararescue (Guardian Angel Weapon System)</i>	PROJECT 675352: <i>Guardian Angel RDT&E</i>
--	---	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Integration and Certification	C/Various	413 TS Eglin AFB FL	0.000	0.250	Jan 2010	0.300	Dec 2010	0.000		0.300	Continuing	Continuing	Continuing
Test Agency Support	TBD/TBD	TBD TBD	0.000	0.510	Jan 2010	0.250	Dec 2010	0.000		0.250	Continuing	Continuing	Continuing
Subtotal			0.000	0.760		0.550		0.000		0.550			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	2.950		2.921		0.000		2.921			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

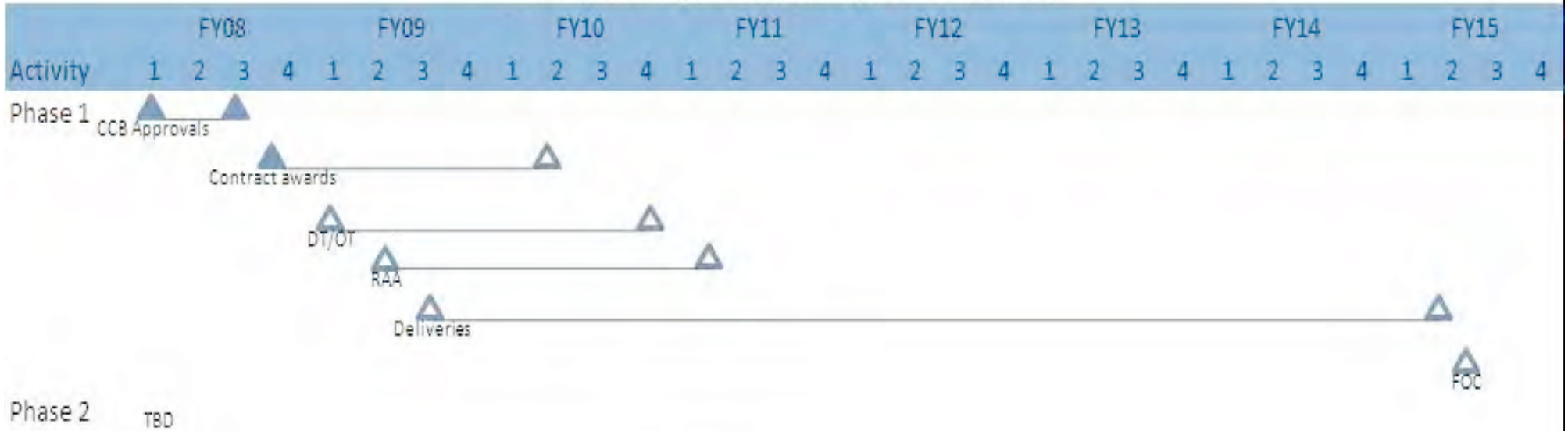
R-1 ITEM NOMENCLATURE

PE 0207227F: *Pararescue (Guardian Angel Weapon System)*

PROJECT

675352: *Guardian Angel RDT&E*

Guardian Angel Weapon System Schedule



Schedule Notes

Phase 1

- Projects have been assigned per Modification Proposals (AF 1067)
- Numerous projects are being worked from start to finish of each event indicated above
- Projects are executed independently and do not rely upon completion of all previous events
- Test will be conducted to handle an acquisition incremental development approach

Phase 2

- Awaiting final F-Study results and way ahead from ACC

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207227F: *Pararescue (Guardian Angel
Weapon System)*

PROJECT

675352: *Guardian Angel RDT&E*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Integration	1	2010	4	2011
Test	1	2010	3	2011
Multiple contract awards	1	2010	3	2011

UNCLASSIFIED

R-1 Line Item #140

Page 8 of 8

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207247F: <i>Air Force TENCAP</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	11.547	11.643	11.648	0.000	11.648	11.796	11.954	12.121	12.306	Continuing	Continuing
670001: <i>Air Force TENCAP</i>	11.547	11.643	11.648	0.000	11.648	11.796	11.954	12.121	12.306	Continuing	Continuing

A. Mission Description and Budget Item Justification

Air Force TENCAP is executed by the Space Innovation and Development Center (SIDC) at Schriever Air Force Base, Colorado. Established by Congress in 1977 as one of a family of service Tactical Exploitation of National Capabilities (TENCAP) programs, AF TENCAP increases warfighter awareness of space and National capabilities, and promotes cross-domain integration of these systems into military and intelligence, surveillance and reconnaissance (ISR) operations through:

- 1) Exploiting existing Space, National and global ISR, and Non-Traditional ISR (NTISR) for operational and tactical applications by rapidly prototyping projects and demonstrating resulting capabilities. Capabilities will be transitioned to warfighters and/or National Intelligence Agencies for operational use, and/or appropriate acquisition organizations for further development.
- 2) Influencing the design and operation of future Space, National and global ISR, and NTISR systems for tactical users.
- 3) Providing education and training to warfighters and National Intelligence agencies.

The AF TENCAP Director administers and executes the AF TENCAP program. The Director coordinates and funds AF TENCAP efforts to provide robust capabilities that enhance support of Joint operations at the tactical level. The AF TENCAP Director is also a member of the Joint TENCAP Senior Officer Review Group (SORG).

This program is in Budget Activity 7, Operational System Development, because its efforts develop capabilities to leverage operational systems in order to increase the effectiveness of tactical warfighting activities.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207247F: <i>Air Force TENCAP</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	11.547	11.643	0.000	0.000	0.000
Current President's Budget	11.547	11.643	11.648	0.000	11.648
Total Adjustments	0.000	0.000	11.648	0.000	11.648
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	11.648	0.000	11.648

Change Summary Explanation

FY 2011: The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207247F: <i>Air Force TENCAP</i>	PROJECT 670001: <i>Air Force TENCAP</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
670001: <i>Air Force TENCAP</i>	11.547	11.643	11.648	0.000	11.648	11.796	11.954	12.121	12.306	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Air Force TENCAP is executed by the Space Innovation and Development Center (SIDC) at Schriever Air Force Base, Colorado. Established by Congress in 1977 as one of a family of service Tactical Exploitation of National Capabilities (TENCAP) programs, AF TENCAP increases warfighter awareness of space and National capabilities, and promotes cross-domain integration of these systems into military and intelligence, surveillance and reconnaissance (ISR) operations through:

- 1) Exploiting existing Space, National and global ISR, and Non-Traditional ISR (NTISR) for operational and tactical applications by rapidly prototyping projects and demonstrating resulting capabilities. Capabilities will be transitioned to warfighters and/or National Intelligence Agencies for operational use, and/or appropriate acquisition organizations for further development.
- 2) Influencing the design and operation of future Space, National and global ISR, and NTISR systems for tactical users.
- 3) Providing education and training to warfighters and National Intelligence agencies.

The AF TENCAP Director administers and executes the AF TENCAP program. The Director coordinates and funds AF TENCAP efforts to provide robust capabilities that enhance support of Joint operations at the tactical level. The AF TENCAP Director is also a member of the Joint TENCAP Senior Officer Review Group (SORG).

This program is in Budget Activity 7, Operational System Development, because its efforts develop capabilities to leverage operational systems in order to increase the effectiveness of tactical warfighting activities.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Exploiting existing Space, National, and Global ISR, and Non-Traditional ISR (NTISR) for tactical applications by rapidly prototyping projects and demonstrating resulting capabilities...	11.015	10.870	10.905	0.000	10.905

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207247F: <i>Air Force TENCAP</i>	PROJECT 670001: <i>Air Force TENCAP</i>

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (11111): <i>Not applicable</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Projects are selected for development based upon needs identified by the program's customers - DOD Departments, Combatant Commands, Components, MAJCOMs, and/or National Intelligence Agencies - and approved via the SIDC strategic planning process. Acquisition strategies for projects are chosen on a case-by-case basis for optimum results. Many projects are executed via existing contracts maintained by other agencies; others are executed via AF TENCAP contracts established with vendors responding to annual Broad Area Announcements issued by SIDC. In all cases the U.S. government organization sponsoring a project is responsible for assuming acquisition, deployment, logistics, and budgetary responsibilities for the developed capability after it has been successfully demonstrated by AF TENCAP.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207247F: <i>Air Force TENCAP</i>				PROJECT 670001: <i>Air Force TENCAP</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Exploiting existing systems through rapid-prototyping projects; influencing future systems; educating and training	Various/ Various	Various Various	242.167	10.870	Dec 2009	10.905	Dec 2010	0.000		10.905	Continuing	Continuing	Continuing
Subtotal			242.167	10.870		10.905		0.000		10.905			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Oversight	Various/ Various	Various Various	8.841	0.773	Dec 2009	0.743	Dec 2010	0.000		0.743	Continuing	Continuing	Continuing
Subtotal			8.841	0.773		0.743		0.000		0.743			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207247F: <i>Air Force TENCAP</i>	PROJECT 670001: <i>Air Force TENCAP</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	251.008	11.643	11.648	0.000	11.648			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207247F: *Air Force TENCAP*

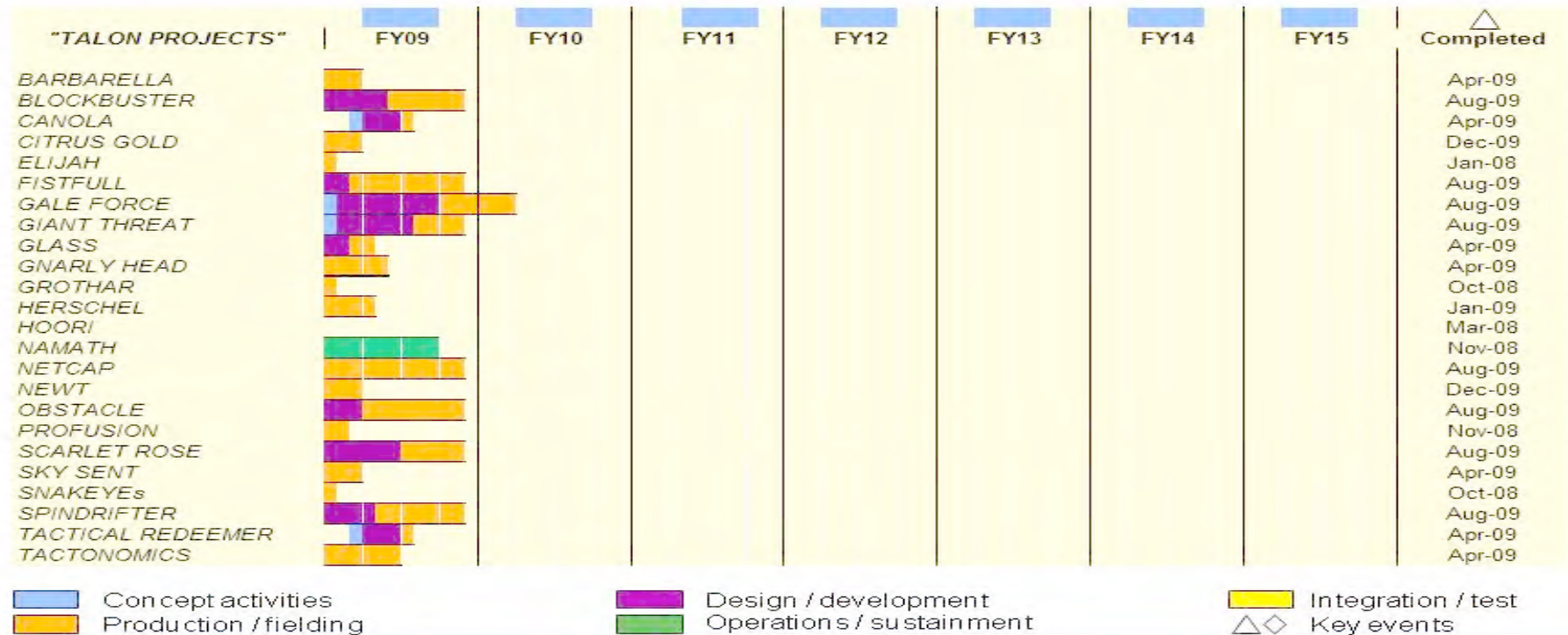
PROJECT

670001: *Air Force TENCAP*



Air Force TENCAP

Completed Projects



UNCLASSIFIED

R-1 Line Item #141

Page 8 of 11

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

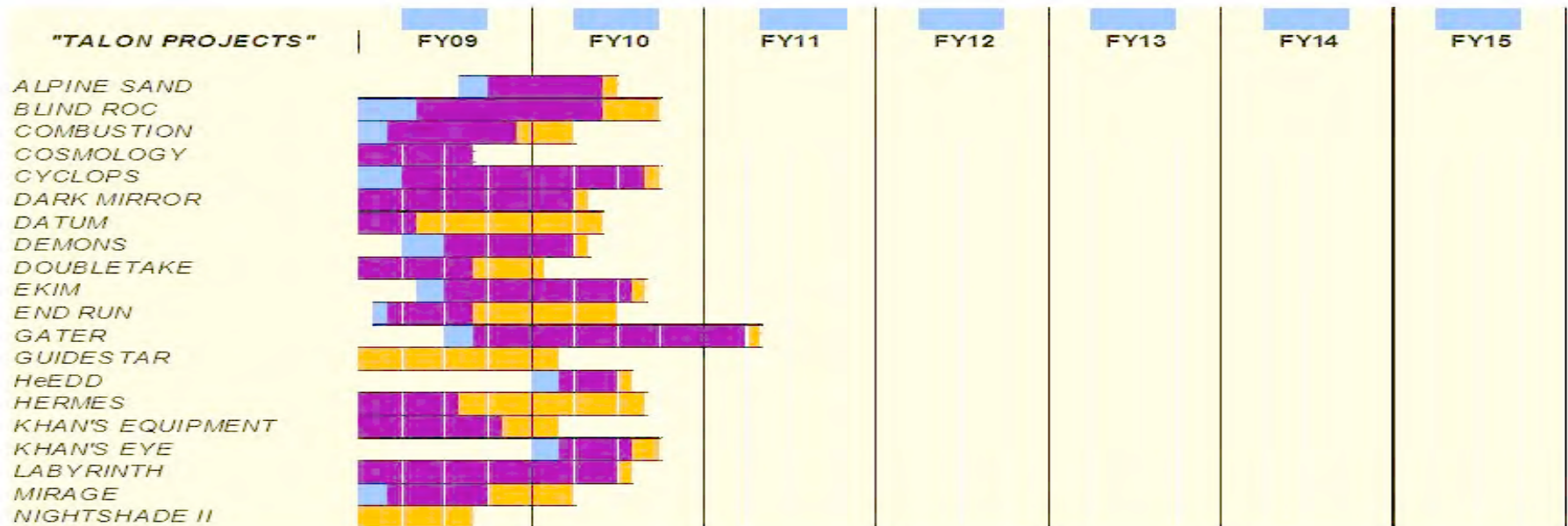
PE 0207247F: *Air Force TENCAP*

PROJECT

670001: *Air Force TENCAP*



Air Force TENCAP Schedule



■ Concept activities
 ■ Design / development
 ■ Integration / test
■ Production / fielding
 ■ Operations / sustainment
 △◇ Key events

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

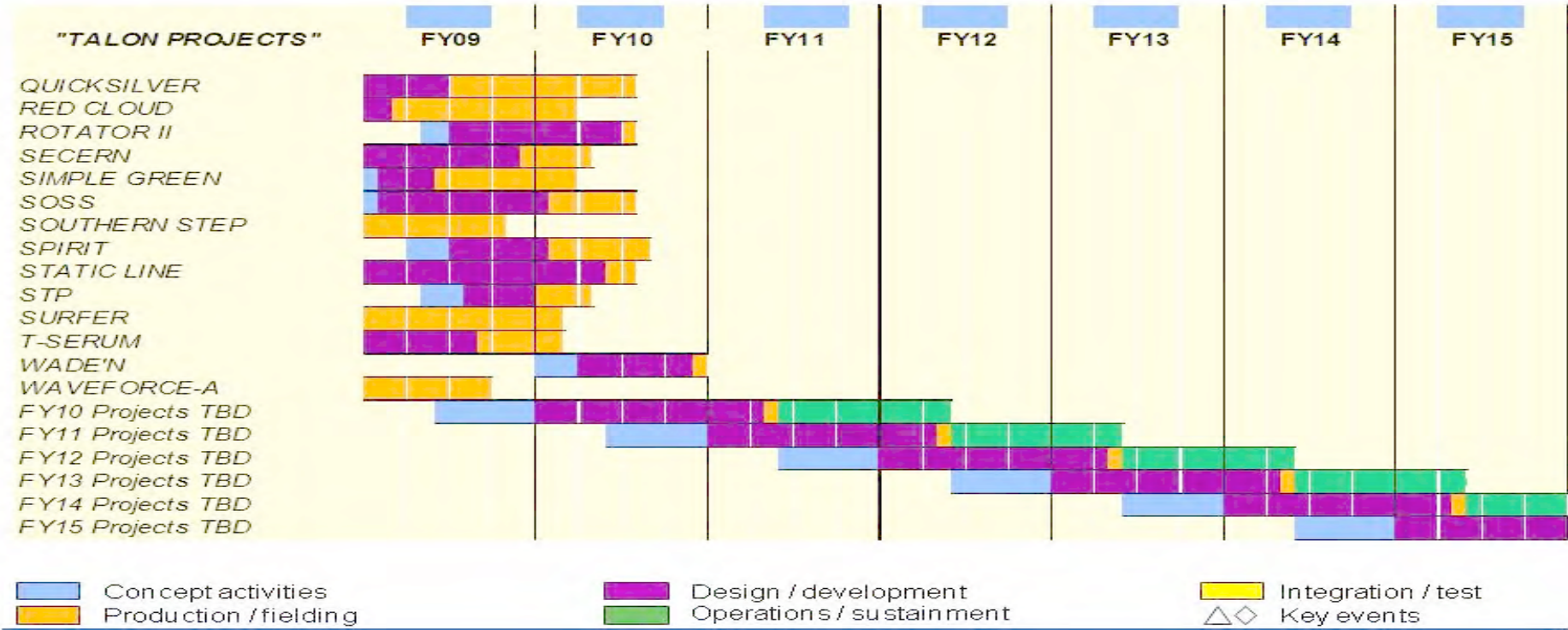
PE 0207247F: *Air Force TENCAP*

PROJECT

670001: *Air Force TENCAP*



Air Force TENCAP Schedule



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207247F: <i>Air Force TENCAP</i>	PROJECT 670001: <i>Air Force TENCAP</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
FY 2009 projects contracted	1	2009	1	2009
FY 2010 project concepts identified and approved	2	2009	3	2009
FY 2010 project contractor proposals requested/reviewed	2	2009	4	2009
FY 2010 projects approved for implementation	4	2009	4	2009
FY 2010 projects contracted	1	2010	1	2010
FY 2011 project concepts identified and approved	2	2010	3	2010
FY 2011 project contractor proposals requested/reviewed	2	2010	4	2010
FY 2011 projects approved for implementation	4	2010	4	2010
FY 2011 projects contracted	1	2011	1	2011
FY 2011 project concepts identified and approved (1)	2	2011	3	2011
FY 2011 project contractor proposals requested/reviewed	2	2011	4	2011
FY 2012 projects approved for implementation	4	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207249F: <i>Precision Attack Systems</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	2.950	3.017	0.000	3.017	3.101	3.183	3.263	3.343	Continuing	Continuing
675347: <i>Advanced Targeting Pod</i>	0.000	2.950	3.017	0.000	3.017	3.101	3.183	3.263	3.343	Continuing	Continuing

A. Mission Description and Budget Item Justification

Advanced Targeting Pods (ATPs) provide long-range target acquisition and expanded weapon delivery envelopes for greater aircraft survivability. ATPs feature an infrared (IR) sensor, charged coupled device television (CCD-TV), laser designator, eye-safe laser, laser spot tracker, infrared marker, and real-time video data link for connectivity with ground forces. As non-developmental items, the majority of improvements to ATPs are the result of investments made by industry Internal Research and Development (IRAD). In addition to operational flight program (OFP) development, this funding provides for the development and integration of capabilities which are either above the capabilities of the industrial base or that require accelerated development timelines in order to meet operational requirements. Data-linking is one such area where there is an identified gap between industrial capabilities and operational requirements. Additional development efforts will be structured to support the documented ATP requirements as well as urgent operational needs (UONs) as they become known.

The Advanced Targeting Pod program is assigned budget activity (BA) code 07 because this developmental work upgrades an existing weapons system.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	2.950	0.000	0.000	0.000
Current President's Budget	0.000	2.950	3.017	0.000	3.017
Total Adjustments	0.000	0.000	3.017	0.000	3.017
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	3.017	0.000	3.017

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207249F: *Precision Attack Systems*

Change Summary Explanation

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner

UNCLASSIFIED

R-1 Line Item #142

Page 2 of 8

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207249F: <i>Precision Attack Systems</i>	PROJECT 675347: <i>Advanced Targeting Pod</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675347: <i>Advanced Targeting Pod</i>	0.000	2.950	3.017	0.000	3.017	3.101	3.183	3.263	3.343	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Advanced Targeting Pods (ATPs) provide long-range target acquisition and expanded weapon delivery envelopes for greater aircraft survivability. ATPs feature an infrared (IR) sensor, charged coupled device television (CCD-TV), laser designator, eye-safe laser, laser spot tracker, infrared marker, and real-time video data link for connectivity with ground forces. As non-developmental items, the majority of improvements to ATPs are the result of investments made by industry Internal Research and Development (IRAD). In addition to operational flight program (OFP) development, this funding provides for the development and integration of specific capabilities which are either above the capabilities of the industrial base or that require accelerated development timelines in order to meet operational requirements. Data-linking is one such area where there is an identified gap between industrial capabilities and operational requirements. Additional development efforts will be structured to support the documented ATP requirements as well as urgent operational needs (UONs) as they become known.

The Advanced Targeting Pod program is assigned budget activity (BA) code 07 because this developmental work upgrades an existing weapons system.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Technology Improvement and Operational Flight Program (OFP) Updates <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: OFP development <i>FY 2011 Base Plans:</i> In FY 2011: Continued OFP development	0.000	2.950	3.017	0.000	3.017

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207249F: <i>Precision Attack Systems</i>	PROJECT 675347: <i>Advanced Targeting Pod</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	0.000	2.950	3.017	0.000	3.017

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0207249F: <i>Precision Attack Systems Procurement</i>	229.365	250.071	166.850	0.000	166.850	113.926	72.416	73.633	74.990	0.000	0.000

D. Acquisition Strategy
Funds will primarily be executed in developing improved capability and maintenance mods. Operational Flight Program (OFP) software will be continuously updated to complement mod development efforts.

E. Performance Metrics
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207249F: <i>Precision Attack Systems</i>	PROJECT 675347: <i>Advanced Targeting Pod</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Technology Improvement & OFP Updates	TBD/TBD	TBD TBD	0.000	2.800		2.867		0.000		2.867	Continuing	Continuing	Continuing
Subtotal			0.000	2.800		2.867		0.000		2.867			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mission Support	TBD/TBD	TBD TBD	0.000	0.100		0.100		0.000		0.100	Continuing	Continuing	0.000
Subtotal			0.000	0.100		0.100		0.000		0.100			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207249F: <i>Precision Attack Systems</i>	PROJECT 675347: <i>Advanced Targeting Pod</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
No text provided	TBD/TBD	No text provided No text provided	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management	TBD/TBD	TBD TBD	0.000	0.050		0.050		0.000		0.050	Continuing	Continuing	0.000
Subtotal			0.000	0.050		0.050		0.000		0.050			0.000

Remarks

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Cost Totals		0.000	2.950		3.017		0.000	3.017			

Remarks

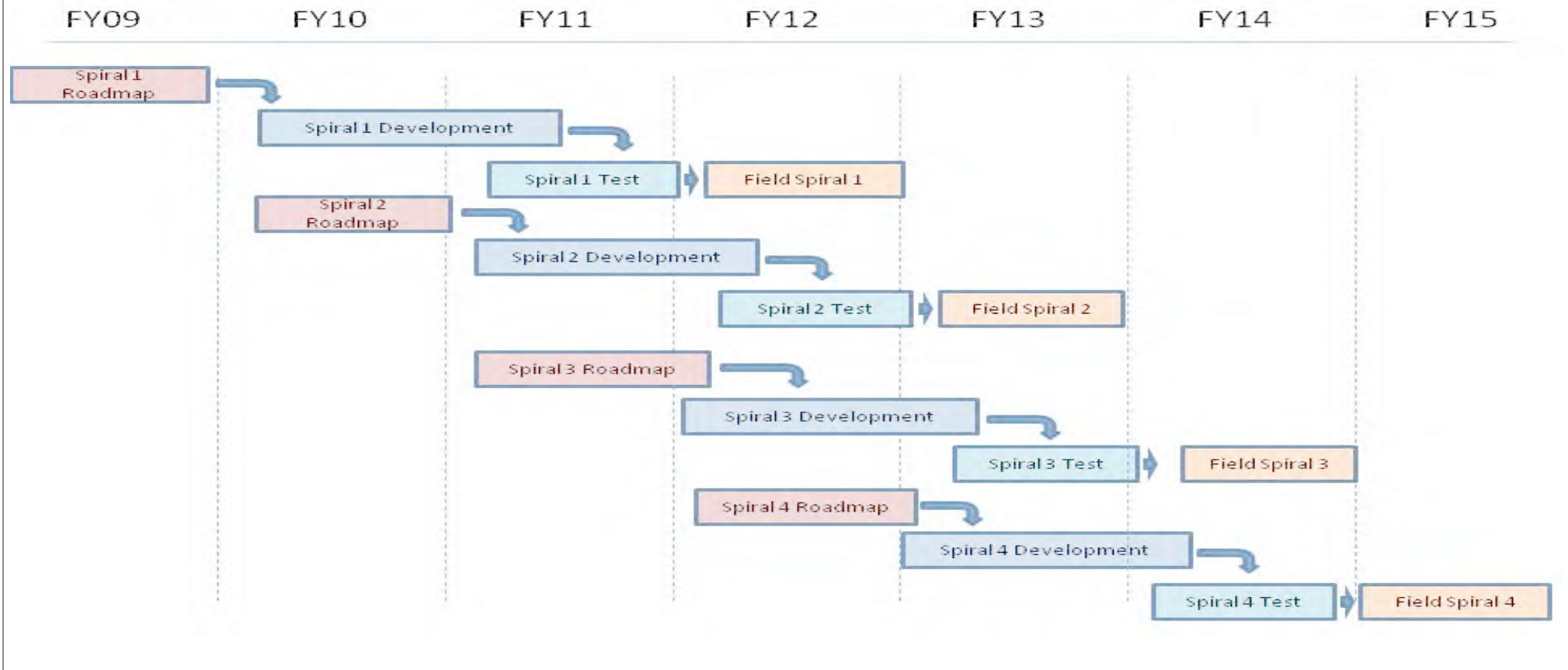
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207249F: <i>Precision Attack Systems</i>	PROJECT 675347: <i>Advanced Targeting Pod</i>

Advanced Targeting Pod Technology Insertion Roadmap



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207249F: <i>Precision Attack Systems</i>	PROJECT 675347: <i>Advanced Targeting Pod</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
OFP Development	1	2010	1	2010

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207253F: <i>Compass Call</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	4.526	13.019	20.652	0.000	20.652	18.571	12.095	12.279	12.460	Continuing	Continuing
674804: <i>Compass Call</i>	4.526	13.019	20.652	0.000	20.652	18.571	12.095	12.279	12.460	Continuing	Continuing

A. Mission Description and Budget Item Justification

The EC-130H COMPASS CALL is the USAF's wide-area, airborne Command and Control Warfare/Information Operations (C2W/IO) weapon system. The employment of this system interdicts our adversary's use of the electronic battlespace and is a key active component in the information battlespace and prosecution of overseas contingency operations. EC-130H COMPASS CALL's sophisticated electronic combat system is capable of surgical denial or disruption of adversary radio frequency (RF) communications systems and sensors. The system was fielded in 1983 and to date has evolved through the Block 35/Baseline 1 configuration.

Due to the rapid advances in electronic attack technology, the EC-130H COMPASS CALL was designed to be easily modified and must continue to modernize and evolve to keep pace with adversary tactics and emerging technologies. Continuous system development is required to maintain battlespace superiority. The EC-130H COMPASS CALL program employs an incremental development and fielding strategy IAW AFD 63-1 that puts capability into the warfighters hands as soon as practical and ensures each iteration of the weapon system is effective against the highest priority threats. To sustain that process requires a steady stream of system development funds.

Development funds are required to accomplish subsystem additions and improvements such as the digital signal analysis and exciter subsystem (AXE), the Special Purpose Emitter Array (SPEAR), the IED Defeat subsystem (NOVA), the Human-to-Machine Interface (HMI), network centric operations, phased array transmit and receive apertures and other classified hardware and software developments necessary to counter military and commercial communications evolutions, command and control operations enhancements, and new/emerging sensor developments.

Funding in FY10-15 is required to support RDT&E efforts for Baseline 2 (BL2) and Baseline 3 (BL3) upgrades to the EC-130H COMPASS CALL fleet. The BL2 and BL3 programmed requirements have advanced significantly over the two previously fielded baselines. The "Initial Perspectives" report from the House Armed Services Committee's Panel on Roles and Missions (Jan 08) stated, "The Air Force must also address emerging shortfalls and readiness concerns in the COMPASS CALL program . . . it is important that the Air Force dedicate necessary funding to sustain the airframe and upgrade its mission and operating systems." BL2 and BL3 upgrades will help cover the electronic attack shortfall in the coming years. Obsolescence and diminishing manufacturing sources (DMS) are addressed with each baseline upgrade as well as annually as part of the sustainment responsibilities. Activities also include studies and analysis to support both current and future program planning and execution.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207253F: <i>Compass Call</i>
--	--

This program will participate in the development, testing, and implementation of international standards (to include NATO standardization agreements) to pursue joint, allied, and coalition interoperability.

This program is categorized as Budget Activity 7, Operational Systems Development, because it provides for development of technologies necessary to field essential and operational capabilities.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	4.526	13.019	0.000	0.000	0.000
Current President's Budget	4.526	13.019	20.652	0.000	20.652
Total Adjustments	0.000	0.000	20.652	0.000	20.652
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	20.652	0.000	20.652

Change Summary Explanation

FY 2010 and FY 2011 RDT&E increases are the result of Baseline 2 non-recurring engineering efforts and enhanced critical mission systems development responding to emerging and evolving requirements with regards to the COMPASS CALL weapons system capabilities

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207253F: <i>Compass Call</i>	PROJECT 674804: <i>Compass Call</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674804: <i>Compass Call</i>	4.526	13.019	20.652	0.000	20.652	18.571	12.095	12.279	12.460	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The EC-130H COMPASS CALL is the USAF's wide-area, airborne Command and Control Warfare/Information Operations (C2W/IO) weapon system. The employment of this system interdicts our adversary's use of the electronic battlespace and is a key active component in the information battlespace and prosecution of overseas contingency operations. EC-130H COMPASS CALL's sophisticated electronic combat system is capable of surgical denial or disruption of adversary radio frequency (RF) communications systems and sensors. The system was fielded in 1983 and to date has evolved through the Block 35/Baseline 1 configuration.

Due to the rapid advances in electronic attack technology, the EC-130H COMPASS CALL was designed to be easily modified and must continue to modernize and evolve to keep pace with adversary tactics and emerging technologies. Continuous system development is required to maintain battlespace superiority. The EC-130H COMPASS CALL program employs an incremental development and fielding strategy IAW AFD 63-1 that puts capability into the warfighters hands as soon as practical and ensures each iteration of the weapon system is effective against the highest priority threats. To sustain that process requires a steady stream of system development funds.

Development funds are required to accomplish subsystem additions and improvements such as the digital signal analysis and exciter subsystem (AXE), the Special Purpose Emitter Array (SPEAR), the IED Defeat subsystem (NOVA), the Human-to-Machine Interface (HMI), network centric operations, phased array transmit and receive apertures and other classified hardware and software developments necessary to counter military and commercial communications evolutions, command and control operations enhancements, and new/emerging sensor developments.

Funding in FY10-15 is required to support RDT&E efforts for Baseline 2 (BL2) and Baseline 3 (BL3) upgrades to the EC-130H COMPASS CALL fleet. The BL2 and BL3 programmed requirements have advanced significantly over the two previously fielded baselines. The "Initial Perspectives" report from the House Armed Services Committee's Panel on Roles and Missions (Jan 08) stated, "The Air Force must also address emerging shortfalls and readiness concerns in the COMPASS CALL program . . . it is important that the Air Force dedicate necessary funding to sustain the airframe and upgrade its mission and operating systems." BL2 and BL3 upgrades will help cover the electronic attack shortfall in the coming years. Obsolescence and diminishing manufacturing sources (DMS) are addressed with each baseline upgrade as well as annually as part of the sustainment responsibilities. Activities also include studies and analysis to support both current and future program planning and execution.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force							DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0207253F: <i>Compass Call</i>			PROJECT 674804: <i>Compass Call</i>					
B. Accomplishments/Planned Program (\$ in Millions)											
							FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Military Communications, Counter Radar and Counter Satellite Navigation Techniques, and Target Development <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A											
Accomplishments/Planned Programs Subtotals							4.526	13.019	20.652	0.000	20.652
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0207253F: <i>COMPASS CALL, (APAF)</i>	36.966	44.965	230.357	10.000	240.357	186.807	93.642	74.812	77.207	0.000	0.000
• PE 0207253F (1): <i>COMPASS CALL, (O&M)</i>	188.861	84.401	98.285	0.000	98.285	110.738	110.953	124.131	133.352	0.000	0.000
D. Acquisition Strategy											
<p>EC-130H COMPASS CALL capability is maintained and baseline / incremental upgrades plus any quick reaction capabilities (QRC) developments are acquired through the 645th Aeronautical Systems Group (BIG SAFARI Program Office) in accordance with the BIG SAFARI Program Management Directive (PMD) and the BIG SAFARI Class Justification and Approval (J&A) document for acquisition of supplies and services using other than full and open competition criteria. The supplies and services procured by 645th AESG under their J&A to satisfy National Security (FAR 6.302-6) or Unusual and Compelling Urgency (FAR 6.302-2) requirements are supported by the BIG SAFARI Life Cycle Management Plan (LCMP) across the full spectrum of system life cycle management from developmental engineering to system retirement ("cradle to grave" support). Due to the rapidly changing threat environment encountered during our prolonged commitment to Overseas Contingency Operations (OCO), the acquisition program manager has the authority to redirect funding as necessary to meet current stated and emerging Combatant Commander requirements.</p>											
E. Performance Metrics											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force	DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207253F: <i>Compass Call</i>	PROJECT 674804: <i>Compass Call</i>

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
COMPASS CALL RDT&E	SS/Various	Systems development and integration BAE Systems Nashua NH	0.000	6.343	Dec 2009	12.194	Dec 2010	0.000		12.194	Continuing	Continuing	Continuing
Primary Mission Equipment	SS/CPFF	Primary Mission Equipment Development BAE Systems Nashua NH	4.526	6.676	Dec 2009	8.458	Dec 2010	0.000		8.458	Continuing	Continuing	Continuing
Subtotal			4.526	13.019		20.652		0.000		20.652			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.526	13.019	20.652	0.000	20.652			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

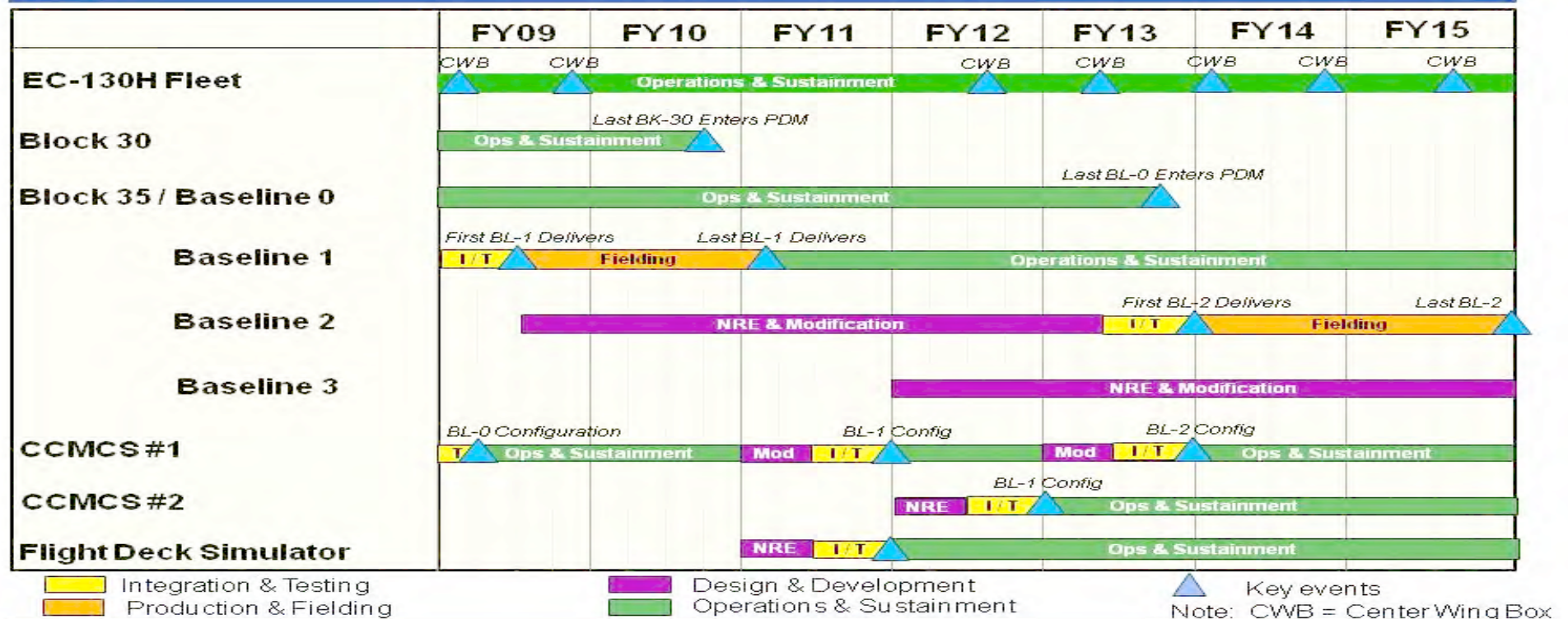
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0207253F: Compass Call

PROJECT
 674804: Compass Call



EC-130H COMPASS CALL Schedule



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207253F: <i>Compass Call</i>	PROJECT 674804: <i>Compass Call</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Baseline 1 Sub-System Additions and Emerging Technologies Enhanced Targeting Techniques Development / Integration	1	2009	2	2009
Baseline 2 Sub-System Additions and Emerging Technologies Enhanced Targeting Techniques Development / Integration	3	2009	4	2011
Compass Call Mission Crew Simulator (CCMCS) #1 Baseline Operating System and Sub-Systems Modification / Upgrade	1	2009	2	2009
Compass Call Flight Deck Simulator Operating System and Sub-System Development	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>							
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	146.359	139.689	147.396	0.000	147.396	144.306	143.676	145.769	147.813	Continuing	Continuing
671012: <i>Aircraft Engine Component Improvement Program</i>	146.359	139.689	120.626	0.000	120.626	112.326	111.847	114.091	116.298	Continuing	Continuing
675365: <i>Aircraft Engine Component Improvement Program (F135)</i>	0.000	0.000	26.770	0.000	26.770	31.980	31.829	31.678	31.515	Continuing	Continuing

Note

FY 2011 - Project 675365 is new in FY11 to provide enhanced funds tracking and accountability for Engine CIP support of F-35 propulsion systems. Engine CIP for all other AF aircraft propulsion programs is accomplished within Project 671012.

A. Mission Description and Budget Item Justification

FY10 \$17.274M in Congressional Reductions was erroneously applied against this program. This reduction will be spread across all appropriate RDT&E Program Elements on the DD 1414, and the Engine CIP program amount will be \$156.963M.

The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical sustaining engineering support for in-service Air Force engines to maintain flight safety (highest priority), to correct service revealed deficiencies, to improve system operational readiness (OR) and reliability & maintainability (R&M), to reduce engine Life Cycle Cost (LCC), and to sustain engines throughout their service life. Historically, aircraft systems change missions, tactics, and environments (including new fuels) to meet changing threats throughout their lives. New technical problems can develop in the engines through actual use and Engine CIP provides the means to develop fixes for these field problems. Engine CIP funding is driven by field events and types/maturity of engines, not by the total engine quantity. The program starts with government acceptance of the first procurement-funded engine and continues over the engine's life, gradually decreasing to a minimum level (safety/depot repairs) sufficient to keep older inventory engines operational. Engine CIP, through "Lead the Fleet" operational use and accelerated mission testing, identifies and fixes engine-related problems ahead of operational impacts. Engine CIP addresses out-of-warranty usage/life and enables the Air Force to obtain additional warranties when manufacturers incorporate Engine CIP improvements into production engines. Engine CIP ensures continued improvements in engine R&M, which reduce out year support costs. Historically, R&M related Engine CIP efforts significantly reduce out year Operations and Maintenance (O&M) and spares costs. Without Engine CIP, out year support funding would have to be significantly increased.

This program is in Budget Activity 7 - Operational System Development, because all efforts support fielded systems.

UNCLASSIFIED

R-1 Line Item #144

Page 1 of 17

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	150.547	166.563	0.000	0.000	0.000
Current President's Budget	146.359	139.689	147.396	0.000	147.396
Total Adjustments	-4.188	-26.874	147.396	0.000	147.396
• Congressional General Reductions		-29.274			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		2.400			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-4.188	0.000	147.396	0.000	147.396

Change Summary Explanation

FY10 \$17.274M in Congressional Reductions was erroneously applied against this program. This reduction will be spread across all appropriate RDT&E Program Elements on the DD 1414, and the Engine CIP program amount will be \$156.963M.

FY2010 represents Congressional reduction

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>				PROJECT 671012: <i>Aircraft Engine Component Improvement Program</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
671012: <i>Aircraft Engine Component Improvement Program</i>	146.359	139.689	120.626	0.000	120.626	112.326	111.847	114.091	116.298	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical sustaining engineering support for in-service Air Force engines to maintain flight safety (highest priority), to correct service revealed deficiencies, to improve system operational readiness (OR) and reliability & maintainability (R&M), to reduce engine Life Cycle Cost (LCC), and to sustain engines throughout their service life. Historically, aircraft systems change missions, tactics, and environments (including new fuels) to meet changing threats throughout their lives. New technical problems can develop in the engines through actual use and Engine CIP provides the means to develop fixes for these field problems. Engine CIP funding is driven by field events and types/maturity of engines, not by the total engine quantity. The program starts with government acceptance of the first procurement-funded engine and continues over the engine's life, gradually decreasing to a minimum level (safety/depot repairs) sufficient to keep older inventory engines operational. Engine CIP, through "Lead the Fleet" operational use and accelerated mission testing, identifies and fixes engine-related problems ahead of operational impacts. Engine CIP addresses out-of-warranty usage/life and enables the Air Force to obtain additional warranties when manufacturers incorporate Engine CIP improvements into production engines. Engine CIP ensures continued improvements in engine R&M, which reduce out year support costs. Historically, R&M related Engine CIP efforts significantly reduce out year Operations and Maintenance (O&M) and spares costs. Without Engine CIP, out year support funding would have to be significantly increased.

This program is in Budget Activity 7 - Operational System Development, because all efforts support fielded systems.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Major Thrust: Aircraft Engine Component Improvement Program (CIP) provides critical sustaining engineering support for approximately 22,500 in-service Air Force engines to maintain flight safety <i>FY 2009 Accomplishments:</i> FY09: Funding enables Engine CIP to execute 250+ tasks across 16+ engine types. Majority of the budget addresses engine issues associated with the B-1, B-2, F-15, F-16, and F-22 aircraft. Engine	146.359	156.963	120.626	0.000	120.626

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>	PROJECT 671012: <i>Aircraft Engine Component Improvement Program</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	146.359	156.963	120.626	0.000	120.626

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (653): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Contracts within this Program Element are awarded sole source to engine manufacturers. Engine CIP tasks are generally assigned to original engine manufacturers based on available funding and prioritization of candidate tasks.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>	PROJECT 671012: <i>Aircraft Engine Component Improvement Program</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GE-Evendale, OH	SS/CPAF	GE Evendale, OH	35.934	43.334	Jan 2010	33.819	Jan 2011	0.000		33.819	Continuing	Continuing	0.000
Pratt & Whitney	SS/CPAF	Pratt & Whitney Hartford, CT	65.094	58.826	Jan 2010	45.910	Jan 2011	0.000		45.910	Continuing	Continuing	0.000
GE-Lynn, MA	SS/CPFF	GE Lynn, MA	17.164	15.302	Jan 2010	11.943	Jan 2011	0.000		11.943	Continuing	Continuing	0.000
Rolls Royce/Allison	SS/CPFF	Rolls Royce Indianapolis, IN	3.032	4.416	Jan 2010	3.446	Jan 2011	0.000		3.446	Continuing	Continuing	0.000
Honeywell	SS/CPFF	Honeywell Phoenix, AZ	1.890	1.051	Jan 2010	0.820	Jan 2011	0.000		0.820	Continuing	Continuing	0.000
Williams International	SS/CPFF	Williams Walled Lake, MI	0.050	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
Subtotal			123.164	122.929		95.938		0.000		95.938			0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
In House Support/ Misc	TBD/TBD	TBD TBD	2.413	2.647	Oct 2009	2.065	Oct 2010	0.000		2.065	Continuing	Continuing	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>	PROJECT 671012: <i>Aircraft Engine Component Improvement Program</i>
--	---	--

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Senior Scout (Congressional Add)	TBD/TBD	TBD TBD	0.000	2.400	Jan 2010	0.000		0.000		0.000	0.000	2.400	0.000
Subtotal			2.413	5.047		2.065		0.000		2.065			0.000

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Arnold Engineering Development Center - Arnold AFB, TN	TBD/TBD	Arnold AFB TN	18.308	16.734	Oct 2009	13.060	Oct 2010	0.000		13.060	Continuing	Continuing	0.000
Fuel	TBD/TBD	TBD TBD	2.474	12.253	Oct 2009	9.563	Oct 2010	0.000		9.563	Continuing	Continuing	0.000
Subtotal			20.782	28.987		22.623		0.000		22.623			0.000

Remarks

Prior years have included fuel costs with the applicable contractors. Fuel to support Test & Evaluation is now broken out as a separate line item.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>	PROJECT 671012: <i>Aircraft Engine Component Improvement Program</i>
--	---	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	146.359	156.963	120.626	0.000	120.626			0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>	PROJECT 671012: <i>Aircraft Engine Component Improvement Program</i>
<p>Not applicable. Engine CIP is a continuing sustaining engineering support program that annually funds 250 plus separate tasks per year.</p>		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>	PROJECT 671012: <i>Aircraft Engine Component Improvement Program</i>
--	---	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Not applicable. Engine CIP is a continuing sustaining engineering support program that funds 250 plus separate tasks per year.	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>				PROJECT 675365: <i>Aircraft Engine Component Improvement Program (F135)</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675365: <i>Aircraft Engine Component Improvement Program (F135)</i>	0.000	0.000	26.770	0.000	26.770	31.980	31.829	31.678	31.515	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Project 675365 is new in FY11 to provide enhanced funds tracking and accountability for F-35 propulsion systems.

A. Mission Description and Budget Item Justification

The F135 Aircraft Engine Component Improvement Program (CIP) supports F-35 propulsion systems. It provides the only source of critical sustaining engineering support for in-service (non-Contractor Logistics Support) Air Force propulsion systems. Engine CIP maintains flight safety (highest priority), to correct service revealed deficiencies, to improve system Operational Readiness (OR) and Reliability & Maintainability (R&M), to reduce propulsion system Life Cycle Cost (LCC), and sustain the propulsion systems throughout the service life. Historically, aircraft systems change missions, tactics, and environment (including new fuels) and meet changing threats throughout their lives. New technical problems can develop in the propulsion system through actual use and the Engine CIP provides the means to develop fixes for these field problems. Engine CIP funding is driven by field events and type/maturity of the propulsion systems, not by the total quantity. The program starts with government acceptance of the first procurement-funded engine and continues over the propulsion systems life, gradually decreasing to a minimum level (safety/depot repairs) sufficient to keep older inventory propulsion systems operational. Engine CIP, through "Lead the Fleet" operational use and accelerated mission testing, identifies and fixes propulsion-related problems ahead of operational impacts. Engine CIP addresses out-of-warranty usage/life and enables the Air Force to obtain additional warranties when manufacturers incorporate Engine CIP improvements into production propulsion systems. Engine CIP ensures continued improvements in propulsion systems R&M, which reduce out year support costs. Historically, R&M related Engine CIP efforts significantly reduce out year O&M and spares costs. Without Engine CIP, out year support funding would have to be significantly increased.

This program is in Budget Activity 7 - Operational System Development, because all efforts support fielded F-35 propulsion systems.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

R-1 Line Item #144

Page 11 of 17

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>	PROJECT 675365: <i>Aircraft Engine Component Improvement Program (F135)</i>
--	---	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0205633N: <i>OTHER APPN</i>	0.000	0.000	27.500	0.000	27.500	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Contracts within this Program Element are awarded sole source to engine manufacturers. F-35 Engine CIP tasks are generally assigned to original engine manufacturers based on available funding and prioritization of candidate tasks.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>	PROJECT 675365: <i>Aircraft Engine Component Improvement Program (F135)</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Pratt & Whitney	SS/CPAF	Pratt & Whitney Hartford, CT	0.000	0.000		26.370	Jan 2011	0.000		26.370	Continuing	Continuing	0.000
Subtotal			0.000	0.000		26.370		0.000		26.370			0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
In House Support/ Misc	TBD/TBD	TBD TBD	0.000	0.000		0.400	Oct 2010	0.000		0.400	Continuing	Continuing	0.000
Subtotal			0.000	0.000		0.400		0.000		0.400			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>	PROJECT 675365: <i>Aircraft Engine Component Improvement Program (F135)</i>
--	---	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
No text provided	TBD/TBD	No text provided No text provided	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000			0.000

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
No text provided	TBD/TBD	No text provided No text provided	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000			0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
	0.000	0.000		26.770		0.000		26.770			0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>	PROJECT 675365: <i>Aircraft Engine Component Improvement Program (F135)</i>
<p>Not applicable. F-35 Engine CIP is a continuing sustaining engineering support program that funds between 10-30 tasks in FY2011 and increasing to 100 plus tasks annually beginning FY2012.</p>		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>	PROJECT 675365: <i>Aircraft Engine Component Improvement Program (F135)</i>
--	---	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
F-35 Engine CIP is a continuing sustaining engineering support program that funds between 10-30 tasks in FY2011 and increasing to 100 plus tasks annually beginning FY2012.	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207277F: <i>Chief's Innovation Program</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	11.261	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
674931: <i>Eagle Vision</i>	0.000	4.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
675373: <i>ISR Innovations Program</i>	0.000	6.461	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note

FY10 funding for ROVER FMV encryption inadvertently reported in PE 0207423F, RDT&E, BA-07, Project 674931

A. Mission Description and Budget Item Justification

A family of systems providing high-impact, quick-reaction capabilities to Warfighters for mission planning, rehearsal, visualization, and intelligence gathering purposes. Program components include: Eagle Vision, DoD's only world-wide deployable commercial imagery ground station capability, and ISR Innovations, rapid prototyping, operational evaluation and fielding of short-notice, high-payoff capabilities addressing immediate gaps and/or shortfalls identified by Warfighting activities.

Program is in Budget Activity 7 because it provides for the development of technologies and capabilities in support of operational system development.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	4.621	0.000	0.000	0.000
Current President's Budget	0.000	11.261	0.000	0.000	0.000
Total Adjustments	0.000	6.640	0.000	0.000	0.000
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		6.640			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

UNCLASSIFIED

R-1 Line Item #145

Page 1 of 14

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207277F: <i>Chief's Innovation Program</i>
--	--

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 674931: *Eagle Vision*

Congressional Add: *Electro-Optical (EO) and Synthetic Aperature Radar (SAR) commercial imagery satellite upgrades*

Congressional Add Subtotals for Project: 674931

Project: 675373: *ISR Innovations Program*

Congressional Add: *Multiband Realtime Hyperspectral Targeting Sensor Development and Integration.*

Congressional Add Subtotals for Project: 675373

Congressional Add Totals for all Projects

FY 2009	FY 2010
0.000	4.800
0.000	4.800
0.000	1.840
0.000	1.840
0.000	6.640

Change Summary Explanation

- Previous President's Budget supports FMV encryption enhancements initiated during FY2009.
- FY10 \$4.8M Congressional Add for Eagle Vision/Eagle Vision III upgrades (CA-ANG)
- FY10 \$1.84M Congressional Add for ISR Innovations/Multiband Realtime Hyperspectral Targeting Sensor integration.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207277F: <i>Chief's Innovation Program</i>	PROJECT 674931: <i>Eagle Vision</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674931: <i>Eagle Vision</i>	0.000	4.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note
FY10 funding for ROVER FMV encryption inadvertently reported in PE 0207423F, RDT&E, BA-07, Project 674931

A. Mission Description and Budget Item Justification

A family of systems providing high-impact, quick-reaction capabilities to Warfighters for mission planning, rehearsal, visualization, and intelligence gathering purposes. Program components include: Eagle Vision, DoD's only world-wide deployable commercial imagery ground station capability, and ISR Innovations, rapid prototyping, operational evaluation and fielding of short-notice, high-payoff capabilities addressing immediate gaps and/or shortfalls identified by Warfighting activities.

- FY10 \$4.8M Congressional Add for Electro-Optical (EO) and Synthetic Aperature Radar (SAR) commercial satellite imagery downlink upgrades at Eagle Vision III (CA-ANG).

- Program is in Budget Activity 7 because it provides for the development of technologies and capabilities in support of operational system development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
Congressional Add: Electro-Optical (EO) and Synthetic Aperature Radar (SAR) commercial imagery satellite upgrades	0.000	4.800
<i>FY 2009 Accomplishments:</i> In FY 2009: N/A		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207277F: <i>Chief's Innovation Program</i>	PROJECT 674931: <i>Eagle Vision</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
<i>FY 2010 Plans:</i> In FY 2010: Electro-Optical (EO) and Synthetic Aperature Radar (SAR) commercial imagery satellite upgrades		
Congressional Adds Subtotals	0.000	4.800

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207277F: <i>Chief's Innovation Program, OP, AF</i>	10.373	7.626	6.750	0.000	6.750	6.695	6.836	6.936	7.158	0.000	0.000
• PE 0207277F (1): <i>Chief's Innovation Program, O&M, AF</i>	12.102	10.610	9.640	0.000	9.640	6.430	6.820	6.970	7.530	0.000	0.000
• PE 0207423F: <i>Advanced Comm Systems, RDT&E, AF</i>	0.000	9.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

- A Sole Source contract through 631 ELSS, Hanscom AFB Justification and Approval (J&A) utilizing EADS Defense and Security Systems.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207277F: <i>Chief's Innovation Program</i>	PROJECT 674931: <i>Eagle Vision</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
EO & SAR Commercial Satellite downlink upgrades System Engineering, Planning & Integration	SS/FFP	EADS Elancourt, France	0.000	4.800	May 2010	0.000		0.000		0.000	0.000	4.800	0.000
Subtotal			0.000	4.800		0.000		0.000		0.000	0.000	4.800	0.000

Remarks

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	4.800		0.000		0.000		0.000	0.000	4.800	0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207277F: <i>Chief's Innovation Program</i>	PROJECT 674931: <i>Eagle Vision</i>

Eagle Vision (EO/SAR Commercial Satellite downlink upgrades) System Engr.,
Planning and Integration

<u>Action</u>	<u>FY09</u>				<u>FY10</u>				<u>FY11</u>			
	<u>1Q</u>	<u>2Q</u>	<u>3Q</u>	<u>4Q</u>	<u>1Q</u>	<u>2Q</u>	<u>3Q</u>	<u>4Q</u>	<u>1Q</u>	<u>2Q</u>	<u>3Q</u>	<u>4Q</u>
Contract Award						▲						
System Engineering, Planning, Integration						▲						▲

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207277F: <i>Chief's Innovation Program</i>	PROJECT 674931: <i>Eagle Vision</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
EO & SAR Commercial Satellite downlink upgrades System Engineering Planning & Integration	2	2010	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207277F: <i>Chief's Innovation Program</i>	PROJECT 675373: <i>ISR Innovations Program</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675373: <i>ISR Innovations Program</i>	0.000	6.461	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

FY10 funding for ROVER FMV encryption inadvertently reported in PE 0207423F, RDT&E, BA-07, Project 674931

A. Mission Description and Budget Item Justification

ISR Innovations program addresses immediate gaps and/or shortfalls identified by Warfighting activities. Develops material solutions through rapid prototyping, operational evaluation and fielding of short-notice, high-payoff capabilities.

- FY10 funds supprt CENTCOM Urgent Need/Supports OSD (AT&L) Intelligence Surveillance Reconnaissance (ISR) Task Force full motion video (FMV) enhancements directed/initiated during FY09. Develops and integrates encryption capability on Remote Operated Video Enhanced Receivers (ROVER). Enhances line-of-sight (LOS) Type I encrypted FMV capability via point-to-point broadcast while securing FMV signal transmission.
- FY10 \$1.84M Congressional Add for Multiband Realtime Hyperspectral Targeting Sensor integration for ISR airborne capabilities.
- Program is in Budget Activity 7 because it provides for the development of technologies and capabilities in support of operational system development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Intelligence, Surveillance, Reconnaissance (ISR) Full Motion Video (FMV) Encryption Development and Integration. <i>FY 2009 Accomplishments:</i> In FY 2009: <i>FY 2010 Plans:</i> In FY 2010	0.000	4.621	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207277F: <i>Chief's Innovation Program</i>	PROJECT 675373: <i>ISR Innovations Program</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> In FY 2011:					
<i>FY 2011 OCO Plans:</i> In FY2011 OCO: N/A					
Accomplishments/Planned Programs Subtotals	0.000	4.621	0.000	0.000	0.000

	FY 2009	FY 2010
Congressional Add: Multiband Realtime Hyperspectral Targeting Sensor Development and Integration. <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Multiband Realtime Hyperspectral Targeting Sensor Development and Integration	0.000	1.840
Congressional Adds Subtotals	0.000	1.840

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (12734): <i>0207277F - Chief's Innovation Program, O&M, AF</i>	0.000	10.973	11.098	0.000	11.098	11.335	11.575	11.807	12.038	0.000	0.000
	0.000	9.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207277F: <i>Chief's Innovation Program</i>	PROJECT 675373: <i>ISR Innovations Program</i>
--	--	--

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
<ul style="list-style-type: none"> • PE Not Provided (12746): 0207423F - <i>Advanced Comm Systems, RDT&E, AF</i> 											

D. Acquisition Strategy

- (FMV Encryption) A Sole Source contract through 645 AESG, Wright-Patterson AFB Justification and Approval (J&A) utilizing and existing Basic Order Agreement (BOA) with L3 Communications West.
- (Multiband Realtime Hyperspectral Targeting Sensor) Developmental partnership with U.S. Naval Air Warfare Center-Weapons Division (NAWC-WD) and Sole Source Contract with Optical Alchemy Inc.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207277F: <i>Chief's Innovation Program</i>	PROJECT 675373: <i>ISR Innovations Program</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
(FMV Encryption) Sys Engr., Planning & Development	SS/FFP	L3 Communications West Salt Lake, Utah	0.000	4.621	Mar 2010	0.000		0.000		0.000	0.000	4.621	0.000
(Multiband Realtime Hyperspectral Targeting Sensor) Sys Engr., Planning & Development	SS/FFP	Optical Alchemy Inc Nashua, New Hampshire	0.000	1.840	Mar 2010	0.000		0.000		0.000	0.000	1.840	0.000
Subtotal			0.000	6.461		0.000		0.000		0.000	0.000	6.461	0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	6.461	0.000	0.000	0.000	0.000	6.461	0.000

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207277F: <i>Chief's Innovation Program</i>	PROJECT 675373: <i>ISR Innovations Program</i>

ISR Innovations (FMV Encryption) Development and Integration												
	<u>FY09</u>				<u>FY10</u>				<u>FY11</u>			
<u>Action</u>	<u>1Q</u>	<u>2Q</u>	<u>3Q</u>	<u>4Q</u>	<u>1Q</u>	<u>2Q</u>	<u>3Q</u>	<u>4Q</u>	<u>1Q</u>	<u>2Q</u>	<u>3Q</u>	<u>4Q</u>
Contract Award						▲						
System Engineering, Planning, Integration						▲				▲		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207277F: <i>Chief's Innovation Program</i>	PROJECT 675373: <i>ISR Innovations Program</i>

ISR Innovations (Multiband Realtime Hyperspectral Targeting Sensor) Development and Integration
--

<u>Action</u>	<u>FY09</u>				<u>FY10</u>				<u>FY11</u>			
	<u>1Q</u>	<u>2Q</u>	<u>3Q</u>	<u>4Q</u>	<u>1Q</u>	<u>2Q</u>	<u>3Q</u>	<u>4Q</u>	<u>1Q</u>	<u>2Q</u>	<u>3Q</u>	<u>4Q</u>
Contract Award						▲						
System Engineering, Planning, Integration						▲						▲

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207277F: *Chief's Innovation Program*

PROJECT

675373: *ISR Innovations Program*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
FMV Encrytion System Engineering Planning & Integration	2	2010	2	2011
Multiband Realtime Hypersprectral Targeting Sensor System Engineering Planning & Integration	2	2010	4	2011

UNCLASSIFIED

R-1 Line Item #145

Page 14 of 14

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			PE 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>								
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	32.131	29.494	20.000	0.000	20.000	4.790	4.643	4.800	4.760	Continuing	Continuing
674515: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>	6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,053.780
675356: <i>JASSM Extended Range (JASSM-ER)</i>	26.131	29.494	20.000	0.000	20.000	4.790	4.643	4.800	4.760	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Joint Air-to-Surface Standoff Missile (JASSM) program provides a long range, conventional air-to-surface, autonomous, precision-guided, standoff cruise missile compatible with fighter and bomber aircraft able to attack a variety of fixed or relocatable targets. There are 2 versions of the JASSM missile: Baseline JASSM and an extended range JASSM (JASSM-ER). Aircraft integration of baseline JASSM is complete on the B-52H, F-16 (Block 50), B-1, and B-2. Objective aircraft include the F-15E, F-16 (Block 40), F-35, and F/A-18E/F.

In Jun 2007, the DAE designated the Joint Air-to-Surface Standoff Missile (JASSM) program an ACAT 1D program due to a Nunn-McCurdy unit cost breach. On 1 May, 2008, the Defense Acquisition Executive (DAE) completed its Nunn-McCurdy review of the JASSM program and certified a restructured program to consist of two separable increments, the JASSM Baseline increment and the JASSM-Extended Range (JASSM-ER) increment--both with improved reliability, separate milestone decision points and separate projects within a single program element.

This activity is reflected in Budget Activity 7, Operational Systems Development, because JASSM Baseline production started in FY02.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	32.946	29.494	0.000	0.000	0.000
Current President's Budget	32.131	29.494	20.000	0.000	20.000
Total Adjustments	-0.815	0.000	20.000	0.000	20.000
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.815	0.000	20.000	0.000	20.000

Change Summary Explanation

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>				PROJECT 674515: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674515: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>	6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,053.780
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Joint Air-to-Surface Standoff Missile (JASSM) program provides a long range, conventional air-to-surface, autonomous, precision-guided, standoff cruise missile compatible with fighter and bomber aircraft able to attack a variety of fixed or relocatable targets. Aircraft integration of the baseline JASSM is complete on the B-52H, F-16 (Block 50), B-1, and B-2. Objective aircraft include the F-15E, F-16 (Block 40), F-35, and F/A-18E/F. The government is buying the JASSM system based on a contractor-developed, government-approved System Performance Specification (SPS), this SPS is on contract. The contractor assumes total system performance responsibility (TSPR) for Lots 1-6 as defined in the SPS; for Lot 7 and beyond, the Government has approval authority of Class I configuration changes.

JASSM was designated ACAT 1D in Jun 2007 due to a Nunn-McCurdy unit cost breach. JASSM (baseline) program completed a Reliability Improvement Program in Spring 2008, which culminated with an April 2008 DAE decision to support the JASSM Nunn-McCurdy certification. The restructured program was certified by DAE to Congress on 1 May 2008.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue JASSM Baseline reliability initiatives/component upgrades, ground/flight test support, and affordability initiatives. <i>FY 2009 Accomplishments:</i> In FY 2009: Develop upgrades to improve missile reliability, address hardware obsolescence; also provide support for any ground and flight test activity required to verify upgraded hardware before cutting into production. Funded Electronic Safe and Arm Fuze (ESAF), Missile Control Unit (MCU) Phase III development, MCU transit cases development, and Air Data Probe (ADP) upgrade.	4.730	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>	PROJECT 674515: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2010 Plans:</i> In FY 2010: Not Applicable <i>FY 2011 Base Plans:</i> In FY 2011: Not Applicable <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.						
MAJOR THRUST: Continue program office/mission support. Provide oversight of JASSM development/upgrade activities. <i>FY 2009 Accomplishments:</i> In FY 2009: Support ESAF development, MCU and ADP upgrades. <i>FY 2010 Plans:</i> In FY 2010: Not Applicable <i>FY 2011 Base Plans:</i> In FY 2011: Not Applicable <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.		1.270	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals		6.000	0.000	0.000	0.000	0.000

UNCLASSIFIED

R-1 Line Item #146

Page 4 of 18

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>	PROJECT 674515: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207325F: <i>JASSM Missile Procurement - Baseline</i>	139.703	52.515	157.240	0.000	157.240	168.375	156.595	154.097	128.103	850.220	3,041.300

D. Acquisition Strategy

All major contracts within this project have been awarded through full and open competition. The EMD phase option for JASSM baseline was Cost Plus Award Fee (CPAF).

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>	PROJECT 674515: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MDA - PDRR I	C/CPFF	McDonnell Douglas Aircraft MO	120.571	0.000		0.000		0.000		0.000	0.000	120.571	120.571
PDRR I& II	C/CPFF	Lockheed Martin FL	151.109	0.000		0.000		0.000		0.000	0.000	151.109	151.109
EMD & Follow on Development	C/CPAF	Lockheed Martin FL	409.915	0.000		0.000		0.000		0.000	0.000	409.915	409.915
JASSM ER Risk Reduction Phase I	SS/FFP	Lockheed Martin FL	9.700	0.000		0.000		0.000		0.000	0.000	9.700	9.700
JASSM ER Development Phase II	SS/CPAF	Lockheed Martin FL	114.599	0.000		0.000		0.000		0.000	0.000	114.599	114.599
Baseline/ER reliability initiatives, component upgrades, ESAF	SS/CPFF	Lockheed Martin FL	9.980	0.000		0.000		0.000		0.000	0.000	9.980	9.750
Data Link/MI	SS/CPFF	Lockheed Martin FL	9.050	0.000		0.000		0.000		0.000	0.000	9.050	9.050
Subtotal			824.924	0.000		0.000		0.000		0.000	0.000	824.924	824.694

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>	PROJECT 674515: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>
--	---	--

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
F-16 SPO	TBD/TBD	WPAFB OHIO	26.605	0.000		0.000		0.000		0.000	0.000	26.605	26.605
B-52 SPO	TBD/TBD	Tinker AFB OK	31.229	0.000		0.000		0.000		0.000	0.000	31.229	31.229
B-1 SPO	TBD/TBD	WPAFB OHIO	6.031	0.000		0.000		0.000		0.000	0.000	6.031	6.031
Other Acft Integ	TBD/TBD	Various Various	3.463	0.000		0.000		0.000		0.000	0.000	3.463	3.463
Sverdrup Inc.	C/CPAF	Eglin AFB FL	15.952	0.000		0.000		0.000		0.000	0.000	15.952	15.952
Other Support (ASuW prep)	Various/ Various	Various Various	40.410	0.000		0.000		0.000		0.000	0.000	40.410	40.640
Subtotal			123.690	0.000		0.000		0.000		0.000	0.000	123.690	123.920

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
46TW	TBD/TBD	Eglin AFB FL	98.358	0.000		0.000		0.000		0.000	0.000	98.358	98.358

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>	PROJECT 674515: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>
--	---	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total		Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date			
Arnold Eng Dev Center	TBD/TBD	Arnold AFB TN	6.808	0.000		0.000		0.000		0.000	0.000	6.808	6.808	
Subtotal			105.166	0.000		0.000		0.000		0.000	0.000	105.166	105.166	

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,053.780	0.000		0.000		0.000		0.000	0.000	1,053.780	1,053.780

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207325F: Joint Air-to-Surface Standoff Missile (JASSM)

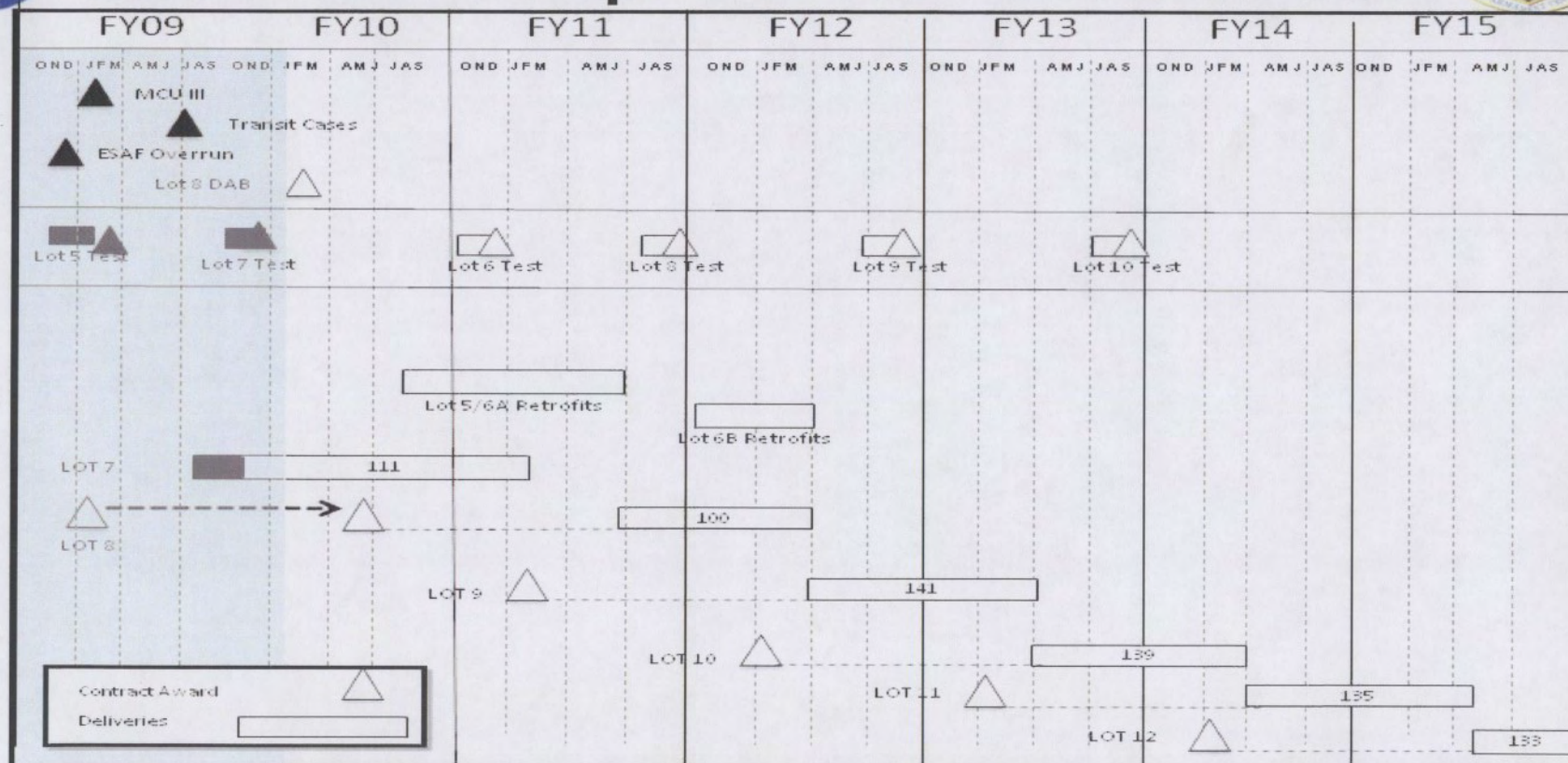
PROJECT

674515: Joint Air-to-Surface Standoff Missile (JASSM)

As Of: 29 Dec 09



JASSM Top Level Schedule



UNCLASSIFIED

R-1 Line Item #146
Page 9 of 18

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>	PROJECT 674515: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>
--	---	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
JASSM Baseline reliability improvement	1	2009	4	2009
JASSM ground and flight testing	1	2009	4	2009
ESAF/MCU Transit Cases/MCU Phase III	1	2009	1	2009

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>				PROJECT 675356: <i>JASSM Extended Range (JASSM-ER)</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675356: <i>JASSM Extended Range (JASSM-ER)</i>	26.131	29.494	20.000	0.000	20.000	4.790	4.643	4.800	4.760	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

From FY03 to FY08, Joint Air-to-Surface Standoff Missile with Extended Range (JASSM-ER) was funded under the JASSM project (67515). This project provides a long range (over twice the range of baseline JASSM), conventional air-to-surface, autonomous, precision-guided, low observable, standoff cruise missile compatible with fighter and bomber aircraft. The threshold integration platform for JASSM-ER is the B-1B. Objective aircraft include the B-52H, F-16 (Block 40/50), B-2, F-15E, F-35, and F/A-18E/F. JASSM-ER provides the capability to attack a variety of high value fixed (to include buried) or relocatable targets with precision, through preplanned missions or target-of-opportunity, deeper into enemy territory than JASSM Baseline while minimizing the threat to launch aircraft. The Air Force is developing JASSM-ER based on a contractor-developed, government-approved System Performance Specification (SPS) dated January 19, 2004, which was developed under JASSM-ER development Phase I Risk Reduction in FY03.

JASSM and JASSM-ER programs were designated ACAT 1D in June 2007 due to a Nunn-McCurdy unit cost breach. On 1 May, 2008, the DAE completed its Nunn-McCurdy review of the JASSM program and certified the program to Congress.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: JASSM-ER Operational Test (OT) Assets Procurement. Purchases missiles to complete Initial Operational Test and Evaluation (IOT&E) required for full-rate production decision. <i>FY 2009 Accomplishments:</i> In FY2009: Incrementally funds procurement of OT missiles, including Test instrumentation Kits (TIKs), for JASSM-ER. This includes prime contractor purchase of long-lead missile subassemblies from lower-level suppliers, final assembly at prime contractor, as well as recurring engineering support.	11.226	19.538	17.177	0.000	17.177

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>	PROJECT 675356: <i>JASSM Extended Range (JASSM-ER)</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Supports JASSM-ER development prior to MS C.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Supports JASSM-ER development prior to LRIP.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	26.131	29.494	20.000	0.000	20.000

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0207325F: <i>JASSM Missile Procurement - JASSM-ER</i>	0.000	0.000	58.585	0.000	58.585	69.024	83.883	115.864	152.744	3,408.700	0.000

D. Acquisition Strategy

JASSM-ER is the extended range version of the JASSM baseline missile currently in production. The development contract for JASSM-ER is sole source to the JASSM baseline developer. JASSM-ER is being developed in two phases; Phase I risk reduction and Phase II development. The Phase I risk reduction contract was as Firm Fixed Price contract awarded June 2003. This phase completed March 2004. The Phase II development contract is a Cost Plus Award Fee contract awarded February 2004. JASSM-ER development restarted in June 2008 after the successful Nunn-McCurdy certification. Continuation of the Phase II development will be executed as a delivery order under an Indefinite Delivery/Indefinite Quantity contract. Continuation of development will be a Cost Plus Fixed Fee with Performance Incentives to produce and test integrated test missiles. Operational Test missiles will be purchased with the baseline JASSM Lot 8 Sole Source Firm Fixed Price with Performance Incentive contract in Jan 2010.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>				PROJECT 675356: <i>JASSM Extended Range (JASSM-ER)</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
IT/OT Missiles Procurement	SS/CPIF	Lockheed Martin FL	24.506	25.875	Jan 2010	17.261	May 2011	0.000		17.261	Continuing	Continuing	Continuing
Other ER Development, Parts Upgrade and Software Update (due to obsolescence)	Various/ Various	Lockheed Martin FL	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			24.506	25.875		17.261		0.000		17.261			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Other Support	Various/ Various	Various Various	0.000	1.119		1.100		0.000		1.100	Continuing	Continuing	Continuing
Subtotal			0.000	1.119		1.100		0.000		1.100			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>	PROJECT 675356: <i>JASSM Extended Range (JASSM-ER)</i>
--	---	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
46 TW test support, flight test equipment, & targets	Various/ Various	Lockheed Martin Eglin AFB, FL	1.625	2.500		1.639		0.000		1.639	Continuing	Continuing	Continuing
Subtotal			1.625	2.500		1.639		0.000		1.639			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
No text provided	TBD/TBD	No text provided No text provided	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		0.000		0.000			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	26.131	29.494		20.000		0.000		20.000			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

R-1 Line Item #146

Page 16 of 18

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

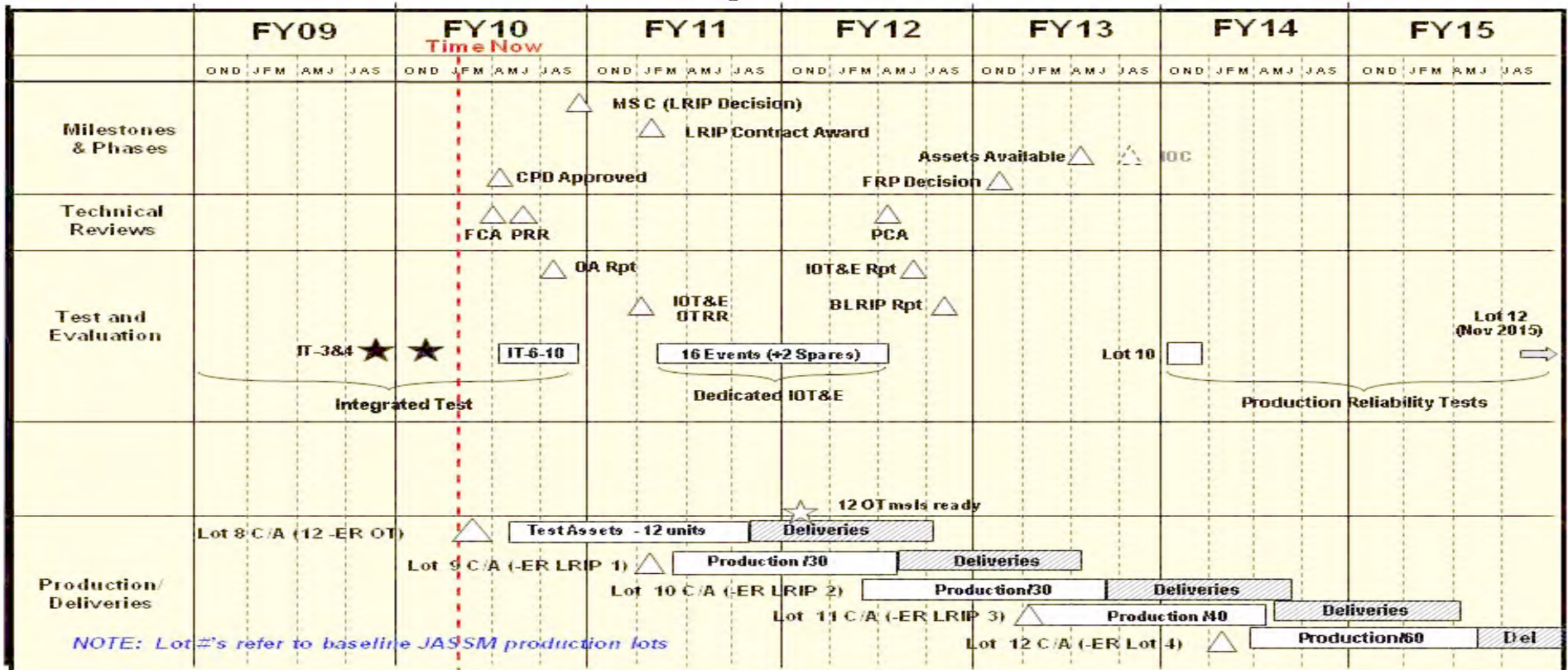
DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0207325F: Joint Air-to-Surface Standoff
 Missile (JASSM)

PROJECT
 675356: JASSM Extended Range (JASSM-ER)

JASSM-ER Top Level Schedule



UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>	PROJECT 675356: <i>JASSM Extended Range (JASSM-ER)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
IT: Integrated Testing (IT is Combined DT/OT)	3	2009	4	2010
JASSM-ER Development	1	2009	4	2011
Operational Test & Evaluation (OT&E)	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	95.908	101.587	93.102	0.000	93.102	91.488	91.998	93.404	94.891	Continuing	Continuing
674372: <i>Space C2 Operations</i>	23.733	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	32.611
675117: <i>Integration Development</i>	56.192	84.826	74.720	0.000	74.720	73.877	74.423	75.605	76.789	Continuing	Continuing
675218: <i>Applications Development</i>	4.130	9.337	10.980	0.000	10.980	10.100	9.968	10.076	10.263	Continuing	Continuing
675220: <i>Unit Level</i>	6.577	7.424	7.402	0.000	7.402	7.511	7.607	7.723	7.839	Continuing	Continuing
675242: <i>Command and Control Air Replanning and Monitoring (C2ARM)</i>	5.276	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.532

Note
 In FY 2010, Project 674372, Space C2 Operations efforts transferred to PE 0305614F, JSpOC Mission Systems (JMS).
 In FY 2010, Project 675242, Command and Control Air Replanning and Monitoring (C2ARM) efforts transferred to Project 675218, Applications Development, to better align C2 capability development projects and programs.

A. Mission Description and Budget Item Justification
 The Air and Space Operations Center Weapon System (AOC WS) program element provides development of Command and Control (C2) capabilities across the entire spectrum of air and space operations from the strategic to the tactical level. In FY 2011, there are three funded projects within the AOC WS program element.

Integration Development supports the Air and Space Operations Center Weapon System (AOC WS), AN/USQ-163 Falconer, the senior element of the Theater Air Control System (TACS). AOC WS is the weapon system the Commander, Air Force Forces (COMAFFOR) provides the Combined/Joint Force Air Component Commander (C/JFACC) for planning, executing and assessing theater-wide air and space operations.

Applications Development provides worldwide operational capabilities which include core air battle planning, management, execution and personnel recovery for Air Force C2 in support of DoD, Coalition Partners, and other government agencies.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>
--	--

Unit Level (UL) supports two primary mission areas: UL Operations software systems provide both the scheduling and mission preparation activities at the wing and squadron level and the capabilities to report and track the success of each mission and influence decisions on future Air Battle Planning to refine future missions. UL Intel capabilities ensure detailed threat, target and imagery information are made available to mission commanders and aircrews planning current flight operations.

This program is Budget Activity 7 - Operation System Development because it provides funding for the modernization of a currently existing and operating system.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	95.908	99.405	0.000	0.000	0.000
Current President's Budget	95.908	101.587	93.102	0.000	93.102
Total Adjustments	0.000	2.182	93.102	0.000	93.102
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	-1.018			
• Congressional Adds		3.200			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	93.102	0.000	93.102

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 675117: *Integration Development*

Congressional Add: *Commercial Off The Shelf (COTS) Technology for Space C2.*

Congressional Add Subtotals for Project: 675117

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	0.000	3.200
	0.000	3.200
	0.000	3.200

Change Summary Explanation

The FY 2010 Congressional Add for Commercial Off The Shelf (COTS) Technology for Space C2 will be reprogrammed to PE 0305614F, Joint Space Operations Center (JSpOC) Mission Systems (JMS) to be executed in accordance with Congressional intent.

UNCLASSIFIED

R-1 Line Item #147

Page 2 of 43

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 674372: <i>Space C2 Operations</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674372: <i>Space C2 Operations</i>	23.733	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	32.611
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY10, Project 674372, Space C2 Operations efforts transferred to PE 0305614F, JSpOC Mission Systems (JMS).

A. Mission Description and Budget Item Justification

Space Command and Control (C2) system provides integrated space information and C2 of space forces for the Joint Functional Component Command for Space (JFCC-SPACE). It will allow CDRJFCC-SPACE to plan, direct, coordinate, and control operations of assigned forces. Specifically, the system will provide CDRJFCC-SPACE with the following abilities:

- Monitor: Status, activities and environment for assigned / attached space forces
- Assess: How space forces support the battle space; provides impacts of changes to force status; impacts of enemy forces on space assets
- Plan: Space operations to support theater and national ops
- Execute: Issue Joint Space Tasking Order; track task performance; adapt tasking to changing situations

Space C2 program will provide a net-centric, service oriented architecture along with space C2 services to meet the needs shown above. Space C2 mission applications are provided in an incremental approach.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

The program is Budget Activity 7, Operational System Development, because it consolidates and unify Air Force air and space C2 development and integration.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Major Thrust: Space C2 Technology development and demonstration of key elements (e.g., Space User Defined Operational Picture (UDOP) and key core services).	8.722	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 674372: <i>Space C2 Operations</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> In FY 2011: N/A					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A					
Accomplishments/Planned Programs Subtotals	23.733	0.000	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (13841): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy
Uses risk reduction technology demonstrations and operational pilots. Technology development performed by Air Force Research Laboratory.

E. Performance Metrics
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 674372: <i>Space C2 Operations</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Competitive Initial Mission Applications	C/CPFF	TBD TBD	3.274	0.000	Oct 2009	0.000		0.000		0.000	0.000	3.274	3.932
AOC-WS Infrastructure	C/CPIF	Lockheed Martin Colorado Springs, Co	12.014	0.000	Nov 2009	0.000		0.000		0.000	0.000	12.014	12.014
Space C2 Technology Risk Reduction	C/Various	Air Force Research Laboratory Albuquerque, NM	1.135	0.000		0.000		0.000		0.000	0.000	1.135	5.266
Subtotal			16.423	0.000		0.000		0.000		0.000	0.000	16.423	21.212

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering	C/CPFF	MITRE Colorado Springs, CO	3.932	0.000	Nov 2009	0.000		0.000		0.000	0.000	3.932	6.139
A&AS	C/CPFF	PASS/ETAS Colorado Springs, CO	3.378	0.000	Nov 2009	0.000		0.000		0.000	0.000	3.378	5.260

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 674372: <i>Space C2 Operations</i>
--	--	--

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			7.310	0.000		0.000		0.000		0.000	0.000	7.310	11.399

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	23.733	0.000		0.000		0.000		0.000	0.000	23.733	32.611

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 674372: <i>Space C2 Operations</i>
--	--	--

Exhibit R-4. RDT&E Schedule Profile

O-7 Operational System Development

PE NUMBER AND TITLE 0207410F Air and Space Operations Center - Weapon System (AOC-WS)	PROJECT NUMBER AND TITLE 4372 Space C2 Operations
---	---

Activity	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Space C2 Technology Risk Reduction Demonstrations and Pilots							
Competitive Initial Mission Applications Design							
Infrastructure Integration Increment 1							

CDR: Critical Design Review	CTE: Critical Technical Element	CTR: Contractor	DT: Development Test	IOC/FOC: Initial/Full Operational Capability
IOT&E: Init Ops Test & Evaluation	JSIP: Joint Functional Component Command for Space Integrated Prototype	JSpOC: Joint Space Operations Center	SS: Source Selection	
MDD: Material Development Decision	PDR: Preliminary Design Review	SRR: System Readiness Review		
Risk Reduction/Source Selection	Design / Development / Integration	Develop/Operational Test		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 674372: <i>Space C2 Operations</i>
--	--	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Space C2 Technology Risk Reduction Demonstrations and Pilots	1	2009	3	2009
Materiel Development Decision (MDD)	2	2009	2	2009
Competitive Initial Mission Applications Design Increment 1	2	2009	4	2009
Infrastructure Integration Increment 1	4	2009	4	2009

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675117: <i>Integration Development</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
<i>675117: Integration Development</i>	56.192	84.826	74.720	0.000	74.720	73.877	74.423	75.605	76.789	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

FY 2010 estimate includes \$3.2M FY10 Congressional Add for Commercial Off The Shelf (COTS) Technology for Space C2. This funding will be reprogrammed in FY 2010 to PE 0305614F, Joint Space Operations Center (JSpOC) Mission Systems (JMS) to be executed in accordance with Congressional intent.

A. Mission Description and Budget Item Justification

The Air and Space Operations Center Weapon System (AOC WS), AN/USQ-163 Falconer, the senior element of the Theater Air Control System (TACS), is the weapon system the Commander, Air Force Forces (COMAFFOR) provides the Combined/Joint Force Air Component Commander (C/JFACC) for planning, executing and assessing theater-wide air and space operations. The C/JFACC provides air, space and cyber support to the Combined/Joint Forces Commander (C/JFC) by coordinating, deconflicting and assessing the progress of various weapon systems to advance the C/JFC's campaign. The AOC WS develops operations strategy and planning documents. The weapon system also disseminates tasking orders, executes day-to-day peacetime and combat air, space and cyber operations, and provides rapid reaction to immediate situations by exercising positive control of friendly forces.

The AOC Integration Development program keeps the AOC interoperable, certified, supportable, and compliant through the integration, testing and fielding of new capabilities and sustainment upgrades to the AOC WS baseline. The program supports mission requirements at Geographic and Functional AOCs as well as Training and Support and Manpower Augmentation units. To keep the AOC current and interoperable with the COCOMs and fifth generation weapon systems/weapons, the AOC WS program plans to evolve the AOC through the integration and test of progressively improving capabilities. The AOC 10.1 baseline is supported by the AOC WS Weapon System Integrator (WSI), ensuring a system of systems engineering perspective, the completion of other weapon system standardization and modernization activities as defined in AOC WS requirements documents. The AOC 10.2 baseline will use a modernization contractor to ensure system of systems perspective and rigor. This will evolve the AOC WS to a Net-Centric Environment (NCE), to build the "to be" infrastructure, and to conduct other weapon system standardization and modernization activities as defined in AOC WS requirements documents.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

The program is in Budget Activity 7 - Operation System Development because it provides funding for the modernization of a currently existing and operating system.

UNCLASSIFIED

R-1 Line Item #147

Page 10 of 43

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>		PROJECT 675117: <i>Integration Development</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Requirements analysis, C2 integration studies, system development support and performance evaluation.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Requirements analysis, C2 integration studies, system development support and performance evaluation.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>								
<p>Major Thrust: Program Management Support</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Supported acquisition planning, execution, and reporting for AOC WS activities</p> <p><i>FY 2010 Plans:</i> In FY 2010: Support for Acquisition planning, execution, and reporting for AOC WS activities</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Acquisition planning, execution, and reporting for AOC WS activities.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>				7.196	8.397	6.554	0.000	6.554
Accomplishments/Planned Programs Subtotals				56.192	81.626	74.720	0.000	74.720
				FY 2009	FY 2010			
				0.000	3.200			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675117: <i>Integration Development</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
Congressional Add: Commercial Off The Shelf (COTS) Technology for Space C2. <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Congressional Add for Commercial Off The Shelf (COTS) Technology for Space C2 will be reprogrammed to PE 0305614F, Joint Space Operations Center (JSpOC) Mission Systems (JMS) to be executed in accordance with Congressional intent.		
Congressional Adds Subtotals	0.000	3.200

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0207410F: <i>Integration Development, (OPAF)</i>	34.947	53.930	58.284	0.000	58.284	48.834	54.868	55.957	57.179	0.000	0.000
• PE 0207410F (1): <i>Integration Development, (O&M)</i>	155.044	99.256	138.334	0.000	138.334	149.619	158.081	161.058	163.936	0.000	0.000

D. Acquisition Strategy

AOC modernization contractor will be selected via a full and open competition. The modernization contractor will continue to ensure system of systems perspective and systems engineering rigor to evolve AOC to a Net-Centric environment, compliant with DoD Services Oriented Architecture (SOA) standards. The acquisition strategy builds on existing capabilities using evolutionary acquisition to standardize, modernize and sustain the AOC.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675117: <i>Integration Development</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
10.1 Integration & Version Upgrades	C/CPAF	LM WSI Colorado Springs, CO	33.051	15.589	Nov 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing
10.2 Integration	C/Various	LM WSI Colorado Springs, CO	9.238	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
10.2 Modernization	C/TBD	TBD TBD	0.000	49.352	Aug 2010	57.796	Aug 2011	0.000		57.796	0.000	107.148	0.000
10.3 Requirements Studies	C/TBD	TBD TBD	0.000	0.000		0.500	Nov 2010	0.000		0.500	Continuing	Continuing	0.000
Training	TBD/ Various	Various Various	2.151	1.940	Dec 2009	2.070	Jan 2010	0.000		2.070	Continuing	Continuing	Continuing
Cong Add - COTS Tech for Space C2	TBD/TBD	Various Various	0.000	3.200	Mar 2010	0.000		0.000		0.000	0.000	3.200	Continuing
Subtotal			44.440	70.081		60.366		0.000		60.366			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering	C/Various	Various	4.556	6.348	Oct 2009	7.800	Oct 2010	0.000		7.800	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675117: <i>Integration Development</i>
--	--	--

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		Hanscom AFB, MA											
Program Office Support	C/Various	AFMC/ESC Hanscom AFB, MA	7.196	8.397	Oct 2009	6.554	Oct 2010	0.000		6.554	Continuing	Continuing	Continuing
Subtotal			11.752	14.745		14.354		0.000		14.354			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	56.192	84.826	74.720	0.000	74.720			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207410F: Air and Space Operations Center - Weapon System (AOC-WS)	PROJECT 675117: Integration Development



U.S. AIR FORCE

AOC WS Integrated Master Schedule



FY09

FY10

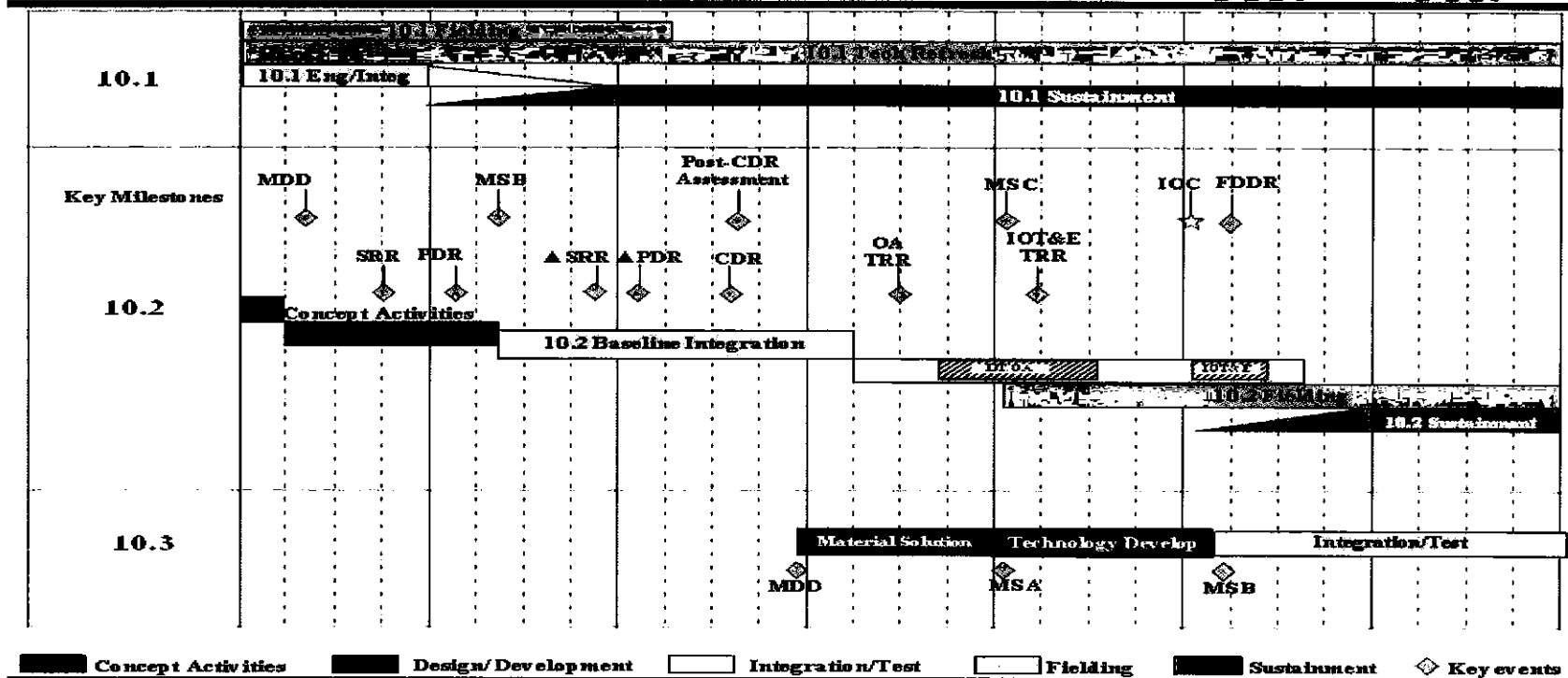
FY11

FY12

FY13

FY14

FY15



Integrity - Service - Excellence

1

UNCLASSIFIED

R-1 Line Item #147

Page 18 of 43

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675117: <i>Integration Development</i>
--	--	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Increment 10.1 Fielding	1	2009	1	2011
AOC 10.2 Concept Activities	1	2009	1	2009
AOC 10.2 Development/Design	2	2009	2	2010
AOC 10.2 Baseline/Integration	2	2010	4	2011
Increment 10.2 MDD	2	2009	2	2009
Increment 10.2 MS B	2	2010	2	2010
Increment 10.3 MDD	4	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675218: <i>Applications Development</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675218: <i>Applications Development</i>	4.130	9.337	10.980	0.000	10.980	10.100	9.968	10.076	10.263	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY10, Project 675242, Command and Control Air Replanning and Monitoring (C2ARM) efforts transferred to Project 675218, Applications Development, to better align C2 capability development projects and programs.

A. Mission Description and Budget Item Justification

This budget activity funds operational development necessary to acquire, modify, and sustain segments of Air Force's Command and Control (C2) capabilities and services. Applications Development provides worldwide operational capabilities for AF C2 in support of DoD, Coalition Partners, and other government agencies. These efforts focus on, but are not limited to support of the Combined/Joint Force Air Component Commander (C/JFACC), as presented to the Air and Space Operations Center (AOC) and to other C2 systems. Applications Development activities include but are not limited to the following: 1) Theater Battle Management Core System (TBMCS) Force Level (FL) program which delivers joint air battle planning, management and execution capabilities; 2) Command and Control Air Operations Suite (C2AOS) develops, matures, fields and maintains next-generation net-centric C2 services and capabilities for air battle planning, execution and management functions; 3) Personnel Recovery Command and Control (PR C2) formerly Combat Search and Rescue Command and Control (CSAR C2) which develops and delivers tools and services for planning and managing search and rescue efforts, and disseminating related information; and 4) Command and Control Information Services (C2IS) which creates web-enabled information services to expose air operations data in TBMCS applications and systems using standardized schemas, such as those developed by the Air Operations Community of Interest (AO COI). The AO COI defines and develops air operations vocabulary and data models upon which net centric information services are built.

Core activities include but are not limited to: 1) maintaining operational viability of the current Joint System of Record (TBMCS 1.1.3); 2) developing capabilities to support planning and replanning of the Air Battle Plan; generation and dissemination of the Air Tasking Order; air and space defensive planning and execution; targeting; weaponeering; personnel recovery tasks; other applications and services supporting C2 utilized in the joint environment and 3) providing support to and participating in the AO COI to improve air operations information interoperability among all joint and coalition systems within the AO domain; 4) developing and assessing C2 technologies that will improve joint and coalition warfighter interoperability, including participation in annual NATO Coalition Warrior Interoperability Demonstration (CWID) activities, and 5) transitioning existing C2 capabilities to a net-centric environment. Applications Development efforts include evaluation and maturation of future air and space command and control concepts identified through research, risk reduction, prototyping, current operations, exercises and demonstrations.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>		PROJECT 675218: <i>Applications Development</i>		
<p>Activities also include studies and analysis to support both current program planning and execution and future program planning.</p> <p>The program is in Budget Activity 7 - Operation Systems Development because it provides funding for the modernization of currently existing and operating systems.</p> <p>B. Accomplishments/Planned Program (\$ in Millions)</p>						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: Theater Battle Management Core System (TBMCS) Force Level delivers joint air battle planning, management and execution capabilities.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Development of a TBMCS module on the AOC learning management system (LMS). Contract negotiation efforts for TBMCS Maintenance Release 2 (MR2), the final large modernization effort for TBMCS which includes some development activities.</p> <p><i>FY 2010 Plans:</i> In FY 2010: N/A</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: N/A</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>		0.649	0.000	0.000	0.000	0.000
<p>MAJOR THRUST: NATO International Cooperation Research & Development. Efforts to develop Information Exchange Requirements and capabilities between TBMCS and NATO systems to promote interoperability.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: System Air Battle Plan prototype development and NATO Coalition Warfare Interoperability Demonstration (CWID) activities.</p>		0.300	0.300	0.300	0.000	0.300

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force						DATE: February 2010					
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>			PROJECT 675218: <i>Applications Development</i>					
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
<p><i>FY 2011 Base Plans:</i> In FY 2011: Engineering and Manufacturing Development (EMD) of ASMA.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>											
Accomplishments/Planned Programs Subtotals						4.130	9.337	10.980	0.000	10.980	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0207410F: <i>Air and Space Operations Center Weapon System, (OPAF)</i>	11.953	16.957	18.772	0.000	18.772	25.885	10.954	11.011	11.156	0.000	0.000
• PE 0207410F (1): <i>Air and Space Operations Center Weapon System, (O&M AF)</i>	16.626	18.731	32.036	0.000	32.036	27.080	20.390	20.535	20.913	0.000	0.000
D. Acquisition Strategy											
Projects will be awarded following full and open competition and will use an evolutionary acquisition strategy based on incremental development.											
E. Performance Metrics											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675218: <i>Applications Development</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Training development	C/CPAF	Lockheed Martin Colorado Springs, CO	0.065	0.000		0.000		0.000		0.000	0.000	0.065	0.000
PR-C2	Various/ Various	TBD TBD	0.000	0.935	Apr 2010	1.246	Apr 2011	0.000		1.246	Continuing	Continuing	Continuing
C2IS	TBD/TBD	TBD TBD	0.000	1.142	Feb 2010	3.060	Feb 2011	0.000		3.060	Continuing	Continuing	Continuing
C2AOS	TBD/TBD	TBD TBD	1.083	2.315	Feb 2010	2.171	Feb 2011	0.000		2.171	Continuing	Continuing	Continuing
NATO ICR&D Projects	Various/ Various	ESC Hanscom AFB, MA	0.300	0.300	Oct 2009	0.300	Oct 2010	0.000		0.300	Continuing	Continuing	Continuing
Subtotal			1.448	4.692		6.777		0.000		6.777			

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Evaluation	MIPR	46th Test Squadron Eglin AFB, FL	0.050	0.125	Mar 2010	0.050	Dec 2010	0.000		0.050	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675218: <i>Applications Development</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.050	0.125		0.050		0.000		0.050			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Support (MITRE, A&AS, Travel)	Various/ Various	ESC Hanscom AFB, MA	2.632	4.520	Oct 2009	4.153	Oct 2010	0.000		4.153	Continuing	Continuing	Continuing
Subtotal			2.632	4.520		4.153		0.000		4.153			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.130	9.337		10.980		0.000		10.980			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

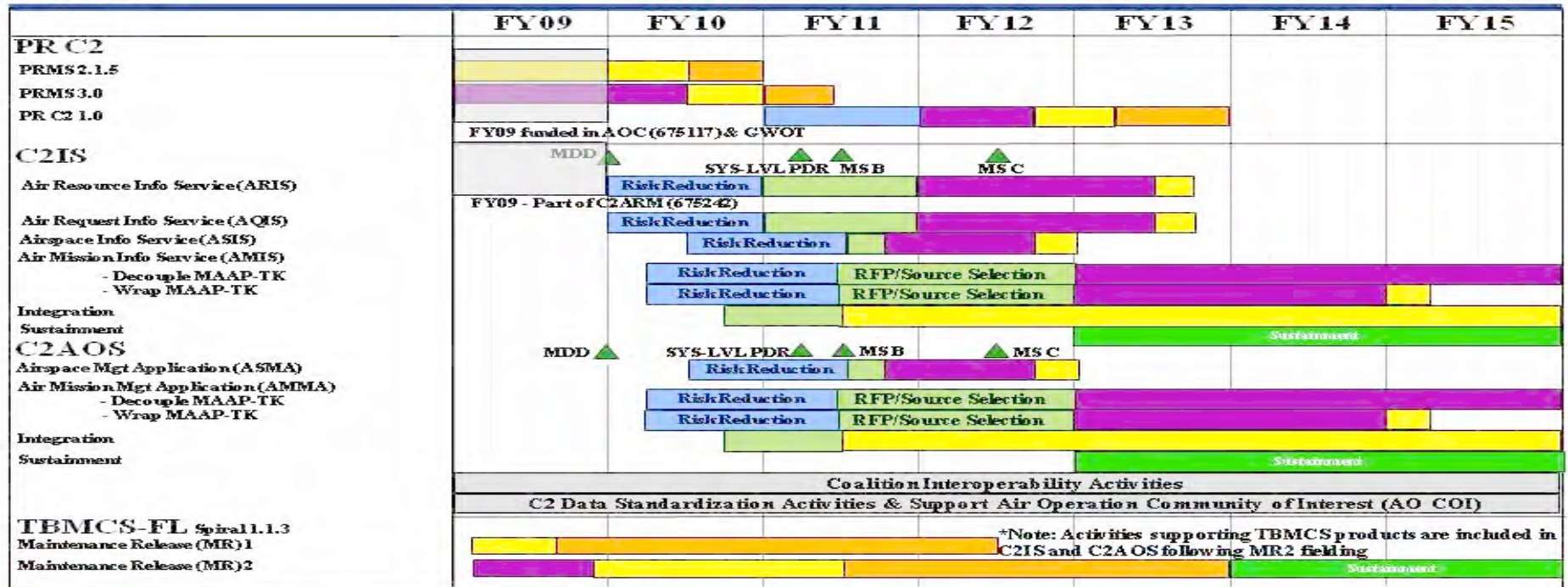
PE 0207410F: Air and Space Operations
Center - Weapon System (AOC-WS)

PROJECT

675218: Applications Development



C2 Applications Development Schedule



Integrity - Service - Excellence

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675218: <i>Applications Development</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
PRMS 2.1.5	1	2009	4	2010
PRMS 3.0	1	2009	2	2011
PR C2 1.0	1	2011	4	2011
C2IS - Air Resource Info Service (ARIS)	1	2010	4	2011
C2IS - Air Request Info Service (AQIS)	1	2010	4	2011
C2IS - Airspace Info Service (ASIS)	3	2010	4	2011
C2IS - Air Mission Info Service (AMIS)	2	2010	4	2011
C2AOS - Airspace Mgt Application (ASMA)	3	2010	4	2011
C2AOS - Air Mission Mgt Application (AMMA)	2	2010	4	2011
TBMCS-FL (MR 1)	1	2009	4	2011
TBMCS-FL (MR 2)	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675220: <i>Unit Level</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675220: <i>Unit Level</i>	6.577	7.424	7.402	0.000	7.402	7.511	7.607	7.723	7.839	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Unit Level (UL) program, as the follow on to Theater Battle Management Core Systems-Unit Level, develops, integrates, fields, and maintains an evolving sequence of increasing software capabilities (Unit Command & Control - UC2) that support the execution of the air battle plan and the air tasking order message received from the force level systems. Unit Level Operations software systems provide both the scheduling and mission preparation activities at the wing and squadron level and the capabilities to report and track the success of each mission and influence decisions on future Air Battle Planning to refine future missions. Unit Level Intelligence capabilities ensure detailed threat, target and imagery information are made available to mission commanders and aircrews planning current flight operations. UL is fielded to the Wing Operations Center (WOC), the Maintenance Operations Center (MOC), the Squadron Operations Center (SOC), and many other work-centers.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

The program is in Budget Activity 7 - Operation System Development because it provides funding for the modernization of a currently existing and operating system.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Unit Level operations and intelligence capabilities development/integration. <i>FY 2009 Accomplishments:</i> In FY 2009: Development of the UL/UC2 Increment 2 which provides capabilities such as Situational Awareness Portlets, Enhanced Personnel Recall, SWA Mission Report, and support to multiple Wings with a single system.	4.785	6.505	5.299	0.000	5.299

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675220: <i>Unit Level</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Accomplishments/Planned Programs Subtotals	6.577	7.424	7.402	0.000	7.402

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0207410F: <i>Air and Space Operations Center, (OPAF)</i>	10.495	12.641	4.753	0.000	4.753	7.285	7.358	7.338	7.314	0.000	0.000
• PE 0207410F (1): <i>Air and Space Operations Center, (O&M AF)</i>	2.016	1.739	0.848	0.000	0.848	0.950	1.503	1.484	1.503	0.000	0.000

D. Acquisition Strategy

Projects will be awarded following full and open competition and will use an evolutionary acquisition strategy based on increment development.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675220: <i>Unit Level</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Increment Development	C/CPIF	Lockheed Martin Hampton, VA	4.780	6.790	Feb 2010	5.299	Feb 2011	0.000		5.299	Continuing	Continuing	Continuing
Subtotal			4.780	6.790		5.299		0.000		5.299			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support	Various/ Various	ESC Hanscom AFB, MA	0.658	0.295	Oct 2009	0.467	Oct 2010	0.000		0.467	Continuing	Continuing	Continuing
Subtotal			0.658	0.295		0.467		0.000		0.467			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675220: <i>Unit Level</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Support	MIPR	46TS Eglin AFB, FL	0.500	0.000	Oct 2009	0.619	Oct 2010	0.000		0.619	Continuing	Continuing	Continuing
Subtotal			0.500	0.000		0.619		0.000		0.619			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering	FFRDC	MITRE Bedford, MA	0.639	0.339	Oct 2009	1.017	Oct 2010	0.000		1.017	Continuing	Continuing	Continuing
Subtotal			0.639	0.339		1.017		0.000		1.017			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	6.577	7.424		7.402		0.000		7.402			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

R-1 Line Item #147

Page 34 of 43

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

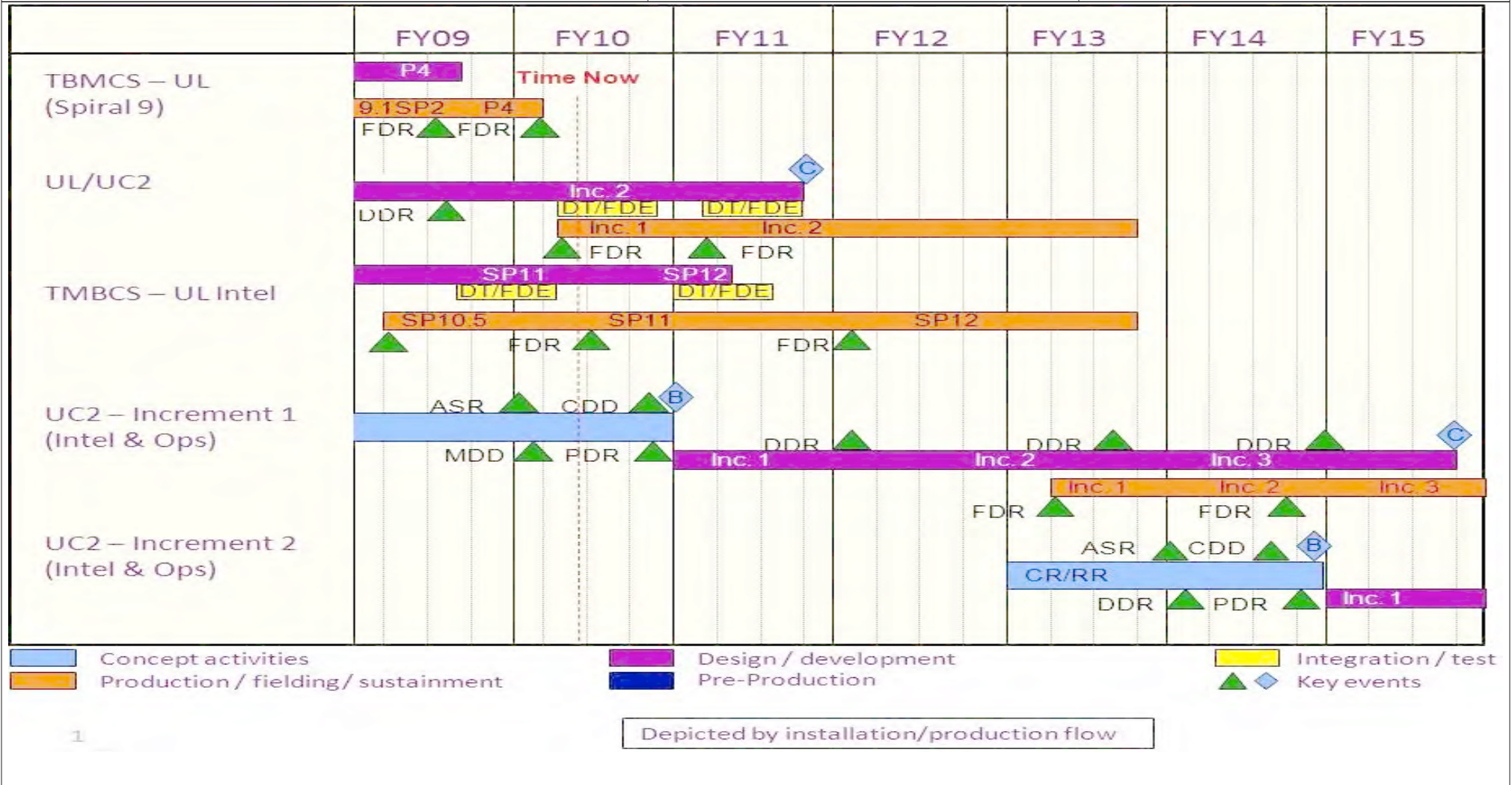
3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207410F: Air and Space Operations
Center - Weapon System (AOC-WS)

PROJECT

675220: Unit Level



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675220: <i>Unit Level</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
TBMCS UL Ops Spiral 9.1 Patch 4 Development	1	2009	3	2009
TBMCS UL Ops Spiral 9.1 Patches 2 and 4 Fielding	1	2009	1	2010
UL/UC2 Increment 2 Development	1	2009	3	2011
UL/UC2 Inc. 2 Test Phase 1	2	2010	4	2010
UL/UC2 Inc. 2 Test Phase 2	1	2011	3	2011
UL/UC2 Inc. 1 Fielding	2	2010	1	2011
UL/UC2 Inc. 2 Fielding	2	2011	4	2011
TBMCS UL Intel Spiral 11 Development	1	2009	2	2010
TBMCS UL Intel Spiral 12 Dev.	2	2010	2	2011
TBMCS UL Intel Spiral 11 Test	3	2009	2	2010
TBMCS UL Intel Spiral 12 Test	1	2011	3	2011
TBMCS UL Intel Spiral 10.5 Fielding	2	2009	2	2010
TBMCS UL Intel Spiral 11 Fielding	3	2010	4	2011
UC2 Increment 1 Concept and Risk Reduction	1	2009	4	2010
UC2 Inc. 1 Development	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675242: <i>Command and Control Air Replanning and Monitoring (C2ARM)</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675242: <i>Command and Control Air Replanning and Monitoring (C2ARM)</i>	5.276	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.532
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY10, Project 675242, Command and Control Air Replanning and Monitoring (C2ARM) efforts transferred to Project 675218, Applications Development, to better align C2 capability development projects and programs.

A. Mission Description and Budget Item Justification

C2ARM (referred to as Command and Control Information Services (C2IS) in FY10 and beyond) is part of the transition of Theater Battle Management Core Systems (TBMCS) Force Level capabilities to a net-centric environment. Specifically, C2ARM/C2IS develops web-enabled information services to expose air operations data in legacy TBMCS systems using standardized schemas, such as those developed by the Air Operations Community of Interest (AO COI). The data services created by C2ARM/C2IS provide users with a single source for authoritative air operations data, including air resources, airspace deconfliction, missions and taskings. These capabilities will be available to C2 users including the Air and Space Operations Centers (AOC) as well as any future follow on capability.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Command and Control Air Replanning and Monitoring (C2ARM) (referred to as Command and Control Information Services (C2IS) in FY 2010 and beyond) efforts to develop information services.	4.711	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675242: <i>Command and Control Air Replanning and Monitoring (C2ARM)</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2009 Accomplishments:</i> In FY 2009: Program support and travel for efforts toward exposing air operations data using standardized schemas.</p> <p><i>FY 2010 Plans:</i> In FY 2010: N/A</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: N/A</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>					
Accomplishments/Planned Programs Subtotals	5.276	0.000	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (15413): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

C2IS efforts will be accomplished through CPIF and T&M delivery orders on existing ID/IQ contracts with approximately one data services task delivery each year.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675242: <i>Command and Control Air Replanning and Monitoring (C2ARM)</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Product Development	C/Various	Solers Arlington, VA	4.711	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			4.711	0.000		0.000		0.000		0.000			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Support	Various/ Various	ESC Hanscom AFB, MA	0.350	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.350	0.000		0.000		0.000		0.000			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>				PROJECT 675242: <i>Command and Control Air Replanning and Monitoring (C2ARM)</i>					

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering	C/CPFF	ESC Hanscom AFB, MA	0.215	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.215	0.000		0.000		0.000		0.000			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.276	0.000	0.000	0.000	0.000			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

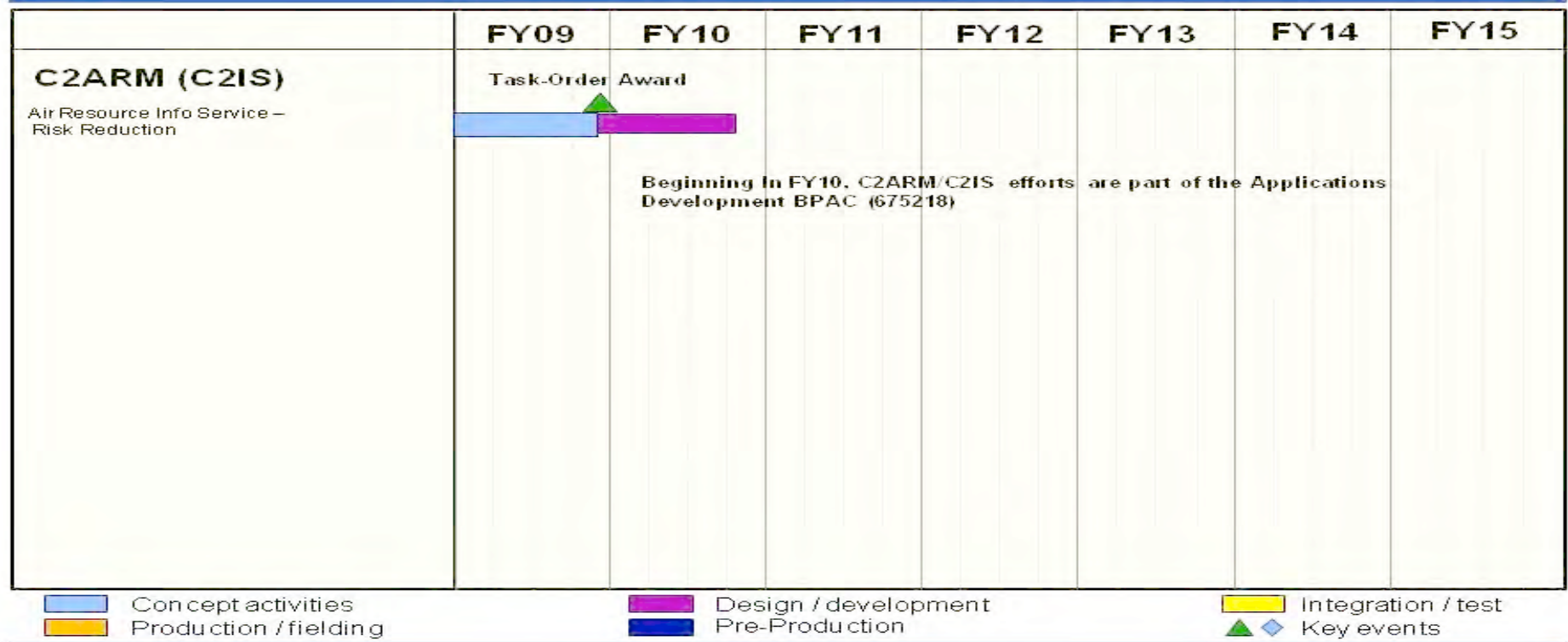
PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*

PROJECT

675242: *Command and Control Air Replanning and Monitoring (C2ARM)*



C2ARM Program Schedule



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations Center - Weapon System (AOC-WS)</i>	PROJECT 675242: <i>Command and Control Air Replanning and Monitoring (C2ARM)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
C2ARM (C2IS) Air Resource Info Service-Risk Reduction Development Contract Award	4	2009	4	2009

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	18.688	52.177	58.313	0.000	58.313	64.815	67.203	68.091	21.318	Continuing	Continuing
67485L: <i>Theater Air Control System Imp (TACSI)</i>	18.688	3.517	4.957	0.000	4.957	1.967	5.350	2.944	0.562	Continuing	Continuing
675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>	0.000	48.660	53.356	0.000	53.356	62.848	61.853	65.147	20.756	Continuing	Continuing

A. Mission Description and Budget Item Justification

This budget activity funds development of mobile ground-based command and control (C2) capabilities of the Control and Reporting Center (CRC) program. The CRC is identified as a component of the Integrated Air Missile Defense Family of Systems that defends the Homeland and US national interests at home and abroad by negating an adversary's ability to achieve adverse effects from their air and missile capabilities. The CRC mission is to provide battlespace awareness and tactical battle management command and control (BMC2) in an assigned area. It is a ground-based theater air control system (TACS) surveillance and BMC2 element. It consists of facilities, equipment, and people and is a tailorable, modular, transportable, sustainable and persistent weapon system employed at the tactical level to support air and surface operations. Currently, the CRCs are fully employed in Operations IRAQI FREEDOM, ENDURING FREEDOM, and NOBLE EAGLE.

The CRC projects include development and modernization of Theater Air Control Systems Improvement (TACSI) capabilities and the Three-Dimensional Expeditionary Long-Range Radar (3DELRR). TACSI efforts include, but are not limited to the AN/TYQ-23 Operations Module (OM), AN/TPS-75 Long-Range Surveillance Radar and the AN/TRC-215 Remote Radio Secure Voice System (RRSVS) that may be tasked across the full range of military operations. AN/TYQ-23 OM is a low source/high demand (LS/HD) deployable ground-based C2 asset. This automated, computer-based information system provides operators the real-time battlespace visualization necessary to plan, direct, and control tactical air operations and airspace management tasks. AN/TRC-215 RRSVS is a mobile, vehicle-mounted voice radio and OM-interface unit. The RRSVS allows real-time, secure voice communication between aircraft operating in the battlespace and ground-based BMC2 operators located in the OM of the CRC. The AN/TRC-215 is typically deployed to a remote area which can extend the CRCs radio coverage beyond line of sight (BLOS) using organic SATCOM capabilities.

The 3DELRR program is developing a replacement for the current legacy AN/TPS-75 radar. 3DELRR will be the principal USAF long-range, ground-based sensor for detecting, identifying, tracking, and reporting aircraft and missiles in support of the Joint Forces Air Component Commander (JFACC) through the Ground Theater Air Control System (GTACS). The primary mission of the 3DELRR will be to provide long-range surveillance, control of aircraft, theater ballistic missile detection and Combat Identification (CID). The 3DELRR will respond to the operational need to detect and report highly maneuverable, small radar cross section targets to

UNCLASSIFIED

R-1 Line Item #148

Page 1 of 23

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>
--	--

enable battlespace awareness while at the same time mitigating the reliability, maintainability, and sustainability issues plaguing the AN/TPS-75 radar system. Ongoing planning and associated activities will take place to prevent and overcome diminishing manufacturing sources and obsolescence issues as required.

The program is in Budget Activity 7 because it provides funding for the modernization of currently existing and operating systems.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	18.688	52.508	0.000	0.000	0.000
Current President's Budget	18.688	52.177	58.313	0.000	58.313
Total Adjustments	0.000	-0.331	58.313	0.000	58.313
• Congressional General Reductions		-0.331			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	58.313	0.000	58.313

Change Summary Explanation

- Beginning in FY10, funding for 3DELRR Program was realigned to new BPAC 675294 from BPAC 67485L, within PE 0207412F.
- The Department of Defense Appropriations Act for FY2010 (signed 19 Dec 09), established a -\$15M rescission in FY09 RDT&E funding within PE 0207412F.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>				PROJECT 67485L: <i>Theater Air Control System Imp (TACSI)</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
67485L: <i>Theater Air Control System Imp (TACSI)</i>	18.688	3.517	4.957	0.000	4.957	1.967	5.350	2.944	0.562	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Beginning in FY10, within PE 0207412F, partial funding was transferred from Project Number 485L to Project Number 5294 to continue development of the AN/TPS-75 replacement/updgrade, known as Three-Dimensional Expeditionary Long-Range Radar (3DELRR). This realignment of funding has moved the associated 3DELRR Evolutionary Upgrades, Program Support & Systems Engineering/Technical Support to a separate Project Number (5294).

A. Mission Description and Budget Item Justification

The Control and Reporting Center (CRC) program element provides development and modernization of mobile ground-based command and control (C2) capabilities. The CRC is a ground-based theater air control system (TACS) surveillance and battle management command and control (BMC2) element. It consists of facilities, equipment, and people. It is a tailorable, modular, transportable, sustainable, and persistent weapon system employed at the tactical level to support air and surface operations. The CRC projects include development of Theater Air Control Systems Improvement (TACSI) capabilities and the Three-Dimensional Expeditionary Long-Range Radar (3DELRR). Currently USAF CRCs are fully employed in Operations IRAQI FREEDOM, ENDURING FREEDOM, and NOBLE EAGLE.

The TACSI project develops and modernizes software and hardware to make the CRC a viable BMC2 element. These efforts include, but are not limited to, the development and modernization of the AN/TYQ-23 Operations Module (OM) and the AN/TRC-215 Remote Radio Secure Voice System (RRSVS). AN/TYQ-23 OM is a low source/high demand (LS/HD) rapidly deployable ground-based C2 asset. This automated, computer-based information system provides operators the real-time battlespace picture necessary to plan, direct, and control tactical air operations and airspace management tasks. AN/TRC-215 RRSVS is a mobile, vehicle-mounted voice radio and OM-interface unit. The RRSVS allows real-time, secure voice communication between aircraft operating in the battlespace and ground-based battle management C2 operators located in the OM of the CRC. OMs and RRSVS units are currently deployed world-wide in support of ongoing operations.

In the absence of a replacement C2 system, Service Life Extension Program (SLEP) efforts to provide capability upgrades/improvements such as associated Mode 5 passive and/or active Identify Friend or Foe (IFF), are being developed for the CRC. Beginning in FY11, activities will include, but not be limited to, studies, analysis, design and prototype, documentation, testing, and production to support both current program planning and execution and future program planning.

The program is in Budget Activity 7 because it provides funding for the modernization of currently existing and operating systems.

UNCLASSIFIED

R-1 Line Item #148

Page 3 of 23

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>		PROJECT 67485L: <i>Theater Air Control System Imp (TACSI)</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Continue Program Support (i.e., travel, supplies, equipment, miscellaneous) in support of multiple TACSI projects</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>								
<p>MAJOR THRUST: Continue Systems Engineering/Technical Support</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Continue Systems Engineering/Technical Support</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continue Systems Engineering/Technical Support</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: N/A</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>				4.471	0.515	0.438	0.000	0.438
Accomplishments/Planned Programs Subtotals				18.688	3.517	4.957	0.000	4.957

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>	PROJECT 67485L: <i>Theater Air Control System Imp (TACSI)</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207412F: <i>Control and Reporting Center, (OPAF)</i>	10.206	17.459	20.231	0.000	20.231	25.177	33.682	29.601	24.476	0.000	0.000

D. Acquisition Strategy

The CRC is utilizing an incremental development and acquisition strategy to further advance C2 capabilities supporting future aerospace operations.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>	PROJECT 67485L: <i>Theater Air Control System Imp (TACSI)</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Remote Radio Spiral 3	MIPR	AFRL Rome, NY	4.069	0.515	Dec 2009	0.550	Nov 2010	0.000		0.550	Continuing	Continuing	Continuing
Radio Replacement Study	MIPR	SPAWARSYSCEN Atlantic North Charleston, SC	0.000	0.188	Nov 2009	0.000		0.000		0.000	0.000	0.188	0.000
Mode 5 Upgrade - A	PO	309th Maintenance Wing Ogden ALC, UT	0.323	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Mode 5 Upgrade - B	TBD/TBD	TBD TBD	0.000	0.000		2.748	Dec 2011	0.000		2.748	0.000	2.748	0.000
Operations Modules (OMs) V5 Service Life Extension Program (SLEP) - A	TM	CSC Falls Church, VA	0.308	0.000		0.000		0.000		0.000	0.000	0.308	0.000
Operations Modules (OMs) V5 Service Life Extension Program (SLEP) - B	TBD/TBD	TBD TBD	0.000	0.175	Mar 2010	0.175	Mar 2011	0.000		0.175	0.000	0.350	0.000
Operations Modules (OMs) V5 Service Life Extension Program (SLEP) - C	PO	309th Maintenance Wing Ogden ALC, UT	0.957	1.625	Mar 2010	0.825	Mar 2011	0.000		0.825	Continuing	Continuing	Continuing
CRC Technology Opportunities & Resource Study (TORS)	TM	Booz Allen Hamilton, Inc. McLean, VA	1.711	0.176	Mar 2010	0.000		0.000		0.000	0.000	1.887	0.300

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>	PROJECT 67485L: <i>Theater Air Control System Imp (TACSI)</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CRC Technology Opportunities & Resource Study (TORS) Test Planning Support	MIPR	46TH TS Eglin AFB, FL	0.012	0.000		0.000		0.000		0.000	0.000	0.012	0.000
3DELRR Risk Reduction - A	MIPR	Naval Research Laboratory Washington, DC	0.545	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
3DELRR Risk Reduction - B	FFRDC	MIT/Lincoln Laboratory Lexington, MA	1.887	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
3DELRR Test Planning	MIPR	46TH TS Eglin AFB, FL	0.092	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
3DELRR Technology Demonstration - A	C/FFP	Lockheed Martin Corp, MS2 Radar Systems Liverpool, NY	4.858	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
3DELRR Technology Demonstration - B	C/FFP	Sensis Corp East Syracuse, NY	4.857	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
3DELRR Analysis of Alternatives	TM	Booz Allen Hamilton Inc McLean, VA	0.035	0.000		0.000		0.000		0.000	0.000	0.035	0.000
Congressional Recission from Control & Reporting Center	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			19.654	2.679		4.298		0.000		4.298			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>	PROJECT 67485L: <i>Theater Air Control System Imp (TACSI)</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
The Department of Defense Appropriations Act for FY2010 (signed 19 Dec 09), established a -\$15M rescission in FY09 RDT&E funding within PE 0207412F.

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Support	Various/ Various	Various Various	2.297	0.123	Oct 2009	0.021	Oct 2010	0.000		0.021	Continuing	Continuing	Continuing
Systems Engineering	FFRDC	MITRE Bedford MA	6.990	0.000	Oct 2009	0.240	Oct 2010	0.000		0.240	Continuing	Continuing	Continuing
Technical Support	TM	Various Various	7.513	0.515	Dec 2009	0.198	Dec 2010	0.000		0.198	Continuing	Continuing	Continuing
Subtotal			16.800	0.638		0.459		0.000		0.459			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>	PROJECT 67485L: <i>Theater Air Control System Imp (TACSI)</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
46th Test Wing/Other Test Activity	Various/ Various	Various Various	0.648	0.200	Jan 2010	0.200	Jan 2011	0.000		0.200	0.000	1.048	0.591
Subtotal			0.648	0.200		0.200		0.000		0.200	0.000	1.048	0.591

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	37.102	3.517		4.957	0.000	4.957		

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

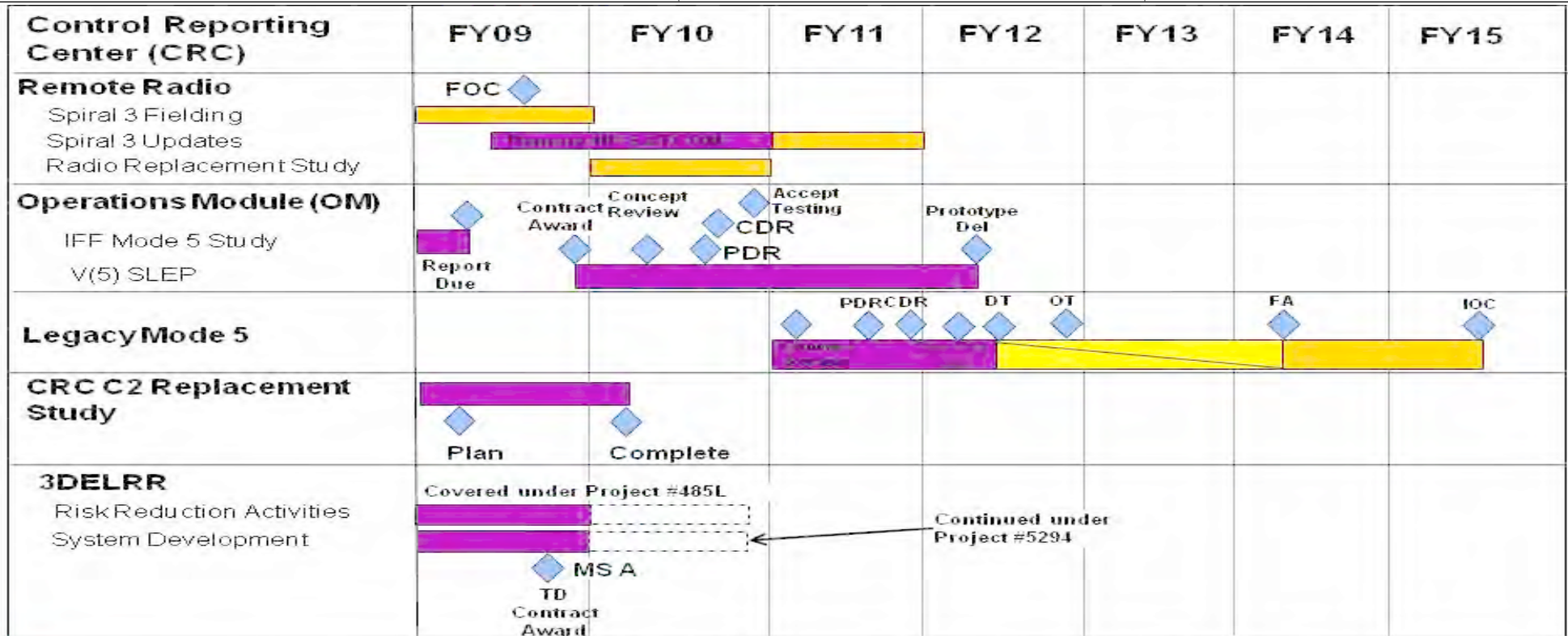
3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207412F: Control and Reporting Center (CRC)

PROJECT

67485L: Theater Air Control System Imp (TACSI)



◆ Major Event/Milestone

■ Design/Development

■ Production/Fielding

■ Development Test/Operational Test (DT/OT)

3DELRR: Three-Dimensional Expeditionary Long-Range Radar
C2: Command and Control
CDR: Critical Design Review
FOC: Full Operational Capability
HF: High Frequency
IFF: Identification Friend or Foe

IOC: Initial Operational Capability
JTRS: Joint Tactical Radio System
MS: Milestone
PDR: Preliminary Design Review
SLEP: Service Life Extension Program
SATCOM: Satellite Communication
TD: Technology Demonstration
TIM: Technical Interchange Meeting

As of Dec 2009

UNCLASSIFIED

R-1 Line Item #148

Page 12 of 23

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>	PROJECT 67485L: <i>Theater Air Control System Imp (TACSI)</i>
--	--	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Remote Radio Spiral 3 Fielding FOC	3	2009	3	2009
Remote Radio Spiral 3 HF/SATCOM IOC Design/Development	3	2009	4	2010
Remote Radio Spiral 3 Updates Fielding	1	2011	4	2011
Remote Radio - Radio Replacement Study	1	2010	4	2010
OM IFF Mode 5 Study	1	2009	2	2009
Mode 5 Legacy Concept Review	1	2011	3	2011
Mode 5 Legacy PDR	3	2011	3	2011
Mode 5 Legacy CDR	4	2011	4	2011
OM v(5) SLEP Contract Award	4	2009	4	2009
OM v(5) SLEP Concept Review	2	2010	2	2010
OM v(5) SLEP PDR	3	2010	3	2010
OM v(5) SLEP CDR	3	2010	3	2010
OM v(5) SLEP Acceptance Testing	4	2010	4	2010
OM v(5) SLEP Design & Development	1	2010	4	2011
CRC C2 Replacement Study	1	2009	1	2010
3DELRR Risk Reduction	1	2009	4	2009
3DELRR Technology Development (TD) Phase	3	2009	4	2009
3DELRR TD Phase Contract Awards	3	2009	3	2009

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>	PROJECT 67485L: <i>Theater Air Control System Imp (TACSI)</i>
--	--	---

Event	Start		End	
	Quarter	Year	Quarter	Year
3DELRR Milestone A	3	2009	3	2009

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>	PROJECT 675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>	0.000	48.660	53.356	0.000	53.356	62.848	61.853	65.147	20.756	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The 3DELRR program is developing a replacement for the current legacy AN/TPS-75 radar. 3DELRR will be the principal USAF long-range, ground-based sensor for detecting, identifying, tracking, and reporting aircraft and missiles in support of the Joint Forces Air Component Commander (JFACC) through the Ground Theater Air Control System (GTACS). The primary mission of the 3DELRR will be to provide long-range surveillance, control of aircraft, and theater ballistic missile detection and Combat Identification (CID). The 3DELRR will respond to the operational need to detect and report highly maneuverable, small radar cross section targets to enable battlespace awareness while at the same time mitigating the reliability, maintainability, and sustainability issues plaguing the AN/TPS-75 radar system. The 3DELRR will provide air controllers with a precise, real-time air picture of sufficient quality to conduct close control of individual aircraft under a wide range of environmental and operational conditions. In the case of theater missile defense operations, the 3DELRR will have the capability to detect, track, and disseminate target information to respective command and control nodes such as the CRC to disseminate for warning and engagement. Similarly, the joint targeting process will benefit from trajectory information provided by the 3DELRR, which will include launch and impact location.

In FY11, the 3DELRR continues its risk reduction and Technology Development (TD) Phase, including maturation of Critical Technology Elements (CTEs), design options analysis, requirements refinement, life-cycle cost estimate revision, and Milestone B (MS-B) documentation development. The Program Office will conduct Preliminary Design Reviews (PDRs), Competitive Prototype Demonstrations and other verification of Technology Readiness Level (TRL) 6 for all CTEs used in the contractors' proposed design, and insure the collection of information required for the Government to produce the required documentation for MS-B, including approved Technical Requirements Document. Successful completion of PDR(s) and completion of the direction in the Acquisition Decision Memorandum (ADM) are milestones for entry into the Program Definition Risk Reduction (PDRR) phase. The Program Office also anticipates completing a full and open competition source selection and will award the contract to commence PDRR.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>	PROJECT 675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (16343): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The Three-Dimensional Expeditionary Long-Range Radar (3DELRR) Project is using multiple full and open competitions to further advance C2 capabilities supporting battlefield command and control.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>	PROJECT 675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Analysis of Alternatives	TM	Booz Allen Hamilton, Inc McLean, VA	0.000	1.340	Dec 2009	0.000		0.000		0.000	0.000	1.340	0.000
Risk Reduction - A	TBD/TBD	TBD TBD	0.000	9.408	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Risk Reduction - B	MIPR	Naval Research Laboratory Washington, DC	0.000	0.400	Nov 2009	0.000		0.000		0.000	0.000	0.400	0.000
Risk Reduction - C	FFRDC	MIT/Lincoln Laboratory Lexington, MA	0.000	3.330	Nov 2009	0.093	Nov 2009	0.000		0.093	Continuing	Continuing	Continuing
Risk Reduction - D	TM	Carnegie Mellon University Pittsburgh, PA	0.000	0.669	Dec 2009	0.000		0.000		0.000	0.000	0.669	0.000
Test Planning	MIPR	46th TS Eglin AFB, FL	0.000	0.290	Oct 2009	1.080	Oct 2010	0.000		1.080	0.000	1.370	0.000
System Threat Assessment	TM	MITRE Bedford, MA	0.000	0.300	Nov 2009	0.000		0.000		0.000	0.000	0.300	0.000
Technology Demonstration (TD) - A	C/FFP	Lockheed Martin Corp, MS2 Radar Systems Liverpool, NY	0.000	14.993	Dec 2009	0.000		0.000		0.000	0.000	14.993	24.851
Technology Demonstration (TD) - B	C/FFP	Sensis Corp East Syracuse, NY	0.000	12.075	Dec 2009	0.000		0.000		0.000	0.000	12.075	21.933
	TBD/TBD	TBD	0.000	0.000		45.580	May 2011	0.000		45.580	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>	PROJECT 675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Definition & Risk Reduction		TBD											
Government Furnished Equipment	TBD/TBD	TBD TBD	0.000	0.000		0.196	May 2011	0.000		0.196	0.000	0.196	0.000
Subtotal			0.000	42.805		46.949		0.000		46.949			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Support	Various/ Various	Various Various	0.000	1.110	Oct 2009	0.928	Oct 2010	0.000		0.928	Continuing	Continuing	Continuing
Systems Engineering	TM	MITRE Bedford, MA	0.000	2.239	Oct 2009	2.985	Oct 2010	0.000		2.985	Continuing	Continuing	Continuing
Technical Support	TM	Various Various	0.000	2.506	Dec 2009	2.494	Dec 2010	0.000		2.494	Continuing	Continuing	Continuing
Subtotal			0.000	5.855		6.407		0.000		6.407			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>	PROJECT 675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total		Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date			
46th Test Wing/Other Test Activity	Various/ Various	Various Various	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000	0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	48.660		53.356		0.000		53.356			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

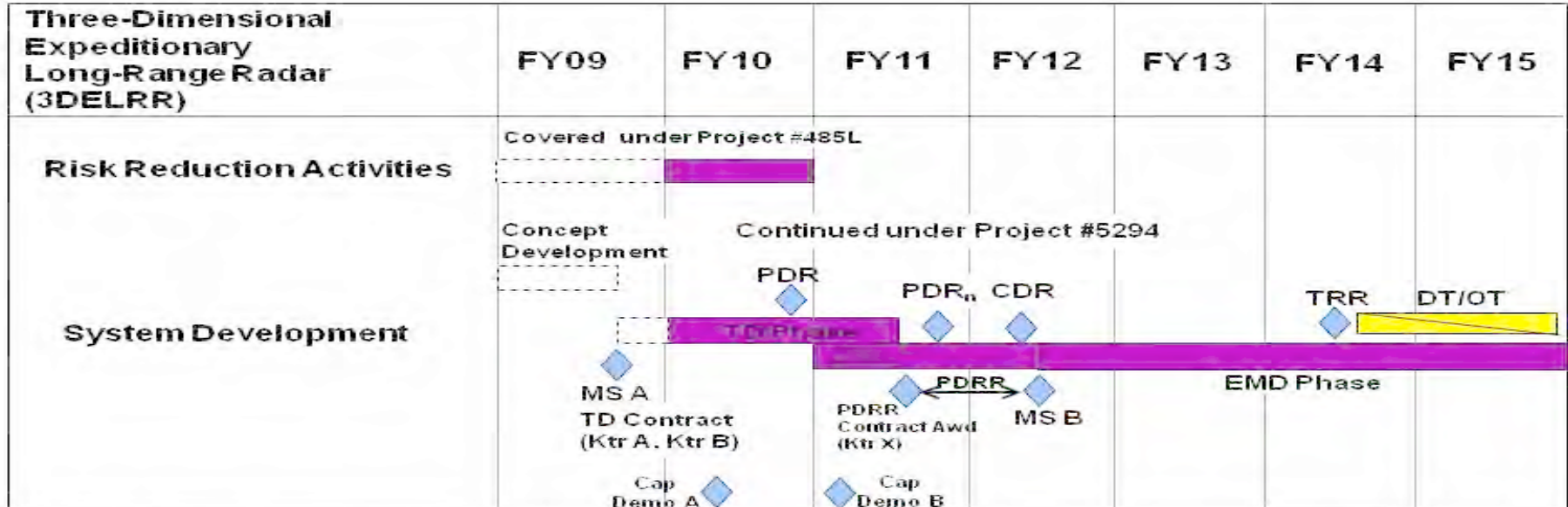
Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0207412F: Control and Reporting Center
 (CRC)

PROJECT
 675294: Theater Air Control System
 Improvement - Radar (TACSI-R)



In FY09, Three-Dimensional Expeditionary Long-Range Radar (3DELRR) was included as part of Project 485L, Theater Air Control System Improvement (TACSI).

- Major Event/Milestone
- Design/Development
- Development Test/Operational Test (DT/OT)

- EMD: Engineering and Manufacturing Development
- Ktr: Contractor
- MS: Milestone
- PDRR: Preliminary Design and Risk Reduction
- TD: Technology Development
- TRR: Test Readiness Review

As of Dec 2009

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207412F: <i>Control and Reporting Center (CRC)</i>	PROJECT 675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>
--	--	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
3DELRR On-going Risk Reduction (continued from Project 485L)	1	2010	4	2010
3DELRR On-going System Development (continued from Project 485L)	1	2010	4	2011
3DELRR TD Phase Capability Demo A	2	2010	2	2010
3DELRR Preliminary Design Review (TD phase)	4	2010	4	2010
3DELRR Preliminary Design Review (PDRR phase)	3	2011	3	2011
3DELRR TD Phase Capability Demo B	1	2011	1	2011
PDRR Source Selection	1	2011	3	2011
3DELRR PDRR Contract Award	3	2011	3	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	122.425	175.514	239.755	0.000	239.755	181.718	120.660	128.852	91.118	Continuing	Continuing
67411L: <i>Airborne Warning & Control System (AWACS)</i>	122.425	175.514	239.755	0.000	239.755	181.718	120.660	128.852	91.118	Continuing	Continuing

A. Mission Description and Budget Item Justification

Mission: AWACS is the premier airborne platform providing command and control (C2)/battle management (BM) to Commander In Chief and combatant commander tasking for Joint, Allied, and Coalition operations, Humanitarian Relief, and Homeland Defense. AWACS provides a real-time picture of friendly, neutral, and hostile air activity. Its capabilities include all-altitude/all-weather surveillance of the battle space; early warning of enemy actions; a real-time ability to find, fix, track, and assess airborne or maritime threats; and detection, location, and identification of electronic emitters.

Budget Justification: This funding is in Budget Activity 7, Operational Systems Development, since the efforts support a fielded, operational weapon system. This funding will be used to investigate, develop, and integrate system improvements to enable the E-3 AWACS to remain an effective airborne battle management and surveillance system for command and control of combat forces and for strategic defense of the U.S. The efforts will pursue synergies and leverage the efforts of other U.S. 707-based airframes as well as the International AWACS partners that operate the 707 AWACS (NATO, United Kingdom, France, and Saudi Arabia). The efforts will coordinate with and participate in projects developing international standards (including NATO standards) to ensure joint, allied, and coalition interoperability.

This program element funds the following AWACS modernization efforts (RDT&E, AF):

1. Block 40/45 is replacing AWACS 1970's vintage mission systems that are experiencing Diminishing Manufacturing Sources (DMS) issues, are difficult and expensive to upgrade, and limit overall AWACS system performance. The Block 40/45 upgrade will improve integration, quality and timeliness of sensor data to the shooter, improve Combat Identification (CID), improve AWACS contribution to Time Critical Targeting via Data Link Infrastructure (DLI), improve electronic support measures processing and enable more effective, faster upgrades via an open-systems, Ethernet-based architecture. The upgrade will also update the ground support infrastructure including training systems.

Block 40/45 met a Milestone C in FY09 and awarded a contract for the first of six LRIP articles in FY09.

2. The Next Generation Identification Friend or Foe (NGIFF) Program provides AWACS with enhanced IFF interrogator operation to add a more secure Mode 5 capability. NSA declared IFF Mode 4 unsecure and obsolete on 5 Nov 2003. Joint Requirements Oversight Council Memo 047-07 requires IFF Mode 5 interrogation

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i>	
<p>capability by FY14. The new Mode 5 interrogation capability extends the effective range of the AWACS interrogator, while helping discriminate against closely spaced cooperative targets.</p> <p>NGIFF will develop and integrate a basic Mode 5 capability on Block 30/35 starting in FY09 and full Mode 5 on Block 40/45 starting in FY10. Hardware will be common between the platforms. NGIFF will also integrate Mode S, a civilian air traffic control capability residing in the NGIFF hardware, as funding allows.</p> <p>3. Diminishing Manufacturing Sources (DMS) Replacement of Avionics for Global Operations and Navigation (DRAGON) completes the FAA/International Civil Aviation Organization (ICAO)/ EUROCONTROL air traffic control mandated safety of flight capabilities. This program will provide the E-3 fleet with the flight instruments and other avionics for the Required Navigation Performance (RNP), and the surveillance and communication capabilities necessary to maintain continued critical unrestricted access to global airspace. Non-compliance will result in airspace restrictions and denials that will impact AWACS ability to support worldwide responses to situations requiring immediate on-scene command and control (C2) battle management. The DRAGON modifications replace the existing DMS GPS Integrated Navigation System (GINS) with a modern Flight Management System (FMS) that will accommodate new capabilities including Mode-5 IFF and Joint Mission Planning System (JMPS). Also included as part of the modification is the addition of data link communications, upgrade or replacement of emergency locating technologies, voice and data link digital radios, and improved visual displays. Emphasis on employment of COTS avionics is expected to lower cost, reduce the tech refresh cycle, and enhance life cycle management. Replacement of critical avionics subsystems that will become unsustainable beginning in 2010 are included in the DRAGON program. The Engineering and Manufacturing Development (EMD) phase of DRAGON is planned to be executed cooperatively between US and NATO. The US and NATO are currently pursuing a cooperative risk reduction effort and working towards award of a cooperative EMD contract in FY11.</p> <p>4. Support the War Fighter (STWF): STWF efforts support AWACS capability to create and sustain the force. Examples of these activities include, but are not limited to:</p> <ul style="list-style-type: none">o Designing, developing, and modernizing equipment and systems to ensure that AWACS can respond to urgent wartime/contingency acquisition requirements (e.g. Urgent Operational Needs (UONs) and Wartime Urgent & Compelling Needs (WUCNs).o Upgrading key capabilities to meet contingency needs, modernizing test systems, integrating battle management and data link enhancements, and supporting Reliability, Maintainability, and Availability (RM&A) initiatives which:<ul style="list-style-type: none">a. Improve the Mission Capable (MC) rate through RM&A analysis and development projects to provide system improvements that help meet or exceed the required MC rate. These efforts focus on increasing reliability of the air vehicle, command and control systems, voice and data communications systems, computer, sensor systems and infrastructure improvements.b. Solve diminishing manufacturing sources (DMS) logistics problems.c. Insert new technologies with the aim of reducing maintenance man-hours along with programmed depot maintenance (PDM) improvements to increase aircraft availability.		

UNCLASSIFIED

R-1 Line Item #149

Page 2 of 18

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i>	
<p>Additionally, this program element funds AWACS Infrastructure and Systems Support. These efforts synchronize modernization requirements and infrastructure support across the entire weapon system-from depot and field test equipment, to maintenance trainers, to simulators, to integration labs, to the TS-3 Developmental Test and Evaluation Aircraft (RDT&E, AF):</p> <p>5. Test System-3/AWACS Integration Test Support (AITS): The E-3 AWACS Developmental Test and Evaluation (DT&E) aircraft, Test System 3 (TS-3, tail number 73-1674) and the Avionics Integration Laboratory (AIL) are Government owned/contractor managed, maintained and operated system level DT&E assets. These test-ready assets support AWACS modernization, including advanced projects and sustainment projects, and allow AWACS to participate in live-fly (e.g., Joint Expeditionary Force Experiment/JEFX; Empire Challenge/EC) and ground-based interoperability testing. These assets also support multiple international Airborne Early Warning and Control (AEW&C) projects on a fee basis, including projects for the French, RSAF, UK, Japan, and NATO AEW&C efforts.</p> <p>6. The Training, Support, and Infrastructure (TSI) programs cover required cross cutting programs and activities in support of AWACS modernization and enhancement efforts. These include managing the AWACS developmental infrastructure, support for equipment concurrency, modernization planning/analysis, and trainer/simulator integration and concurrency. The E-3 Radar Systems Integration Lab/Software Development Facility (SIL/SDF) is maintained and operated to provide customers with a functioning E-3 radar configuration in support of AWACS US, FMS and International radar development, production, and sustainment programs. New support equipment technologies and test strategies need to be analyzed to ensure concurrent capability to sustain existing, modified, and upgraded E-3 equipment. Trainer/simulator concurrency analysis and definition is required to ensure trainers and simulators are kept current with the AWACS baseline.</p> <p>This program element also funds Material Solutions Development & Analysis. These efforts look toward the future, investigating enhanced capabilities and exploring new mission areas (RDT&E, AF):</p> <p>7. Command & Control, Intelligence, Surveillance and Reconnaissance (C2ISR) System Improvements: Investigate and develop future capabilities of the AWACS weapon system, or next C2ISR platform. These efforts also include investigation, analysis and development to ensure that AWACS successfully integrates with Joint and Coalition forces in a net-centric environment. C2ISR primarily supports Pre-Systems Acquisition in the areas of Material Solution Analysis and Technology Development. This is accomplished by prototyping and demonstrating capabilities required by the warfighter. Examples of these activities include, but are not limited to:</p> <ul style="list-style-type: none">o Evaluating emerging operational needs, concepts, and technologies to enable integration of AWACS' capabilities to align with integrated C2ISR network architectures as defined in Joint Vision 2020, Air Expeditionary Force CONOPS, C2 Constellation CONOPS, Air Force CONOPS, and C2ISR Mission area plans.o Improving sensors, communications, and multi-sensor integration such as the ability to send, receive, and fuse the air (and ground) picture via data link to fighter aircraft, through rapid prototyping, modeling, simulation, and participation in Joint exercises (e.g., Joint Expeditionary Forces Experiment (JEFX) and Empire Challenge (EC)).o Improving the timeliness and accuracy of information passed to/from fighter aircraft in the engagement zone by providing consistent and re-playable post-mission data to provide quicker reaction capabilities to support the air war.		

UNCLASSIFIED

R-1 Line Item #149

Page 3 of 18

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
3600: <i>Research, Development, Test & Evaluation, Air Force</i>	PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i>
BA 7: <i>Operational Systems Development</i>	

o Exploring concepts, developing technology, and demonstrating efforts that support continuous improvements and self-protection for C2ISR capabilities of manned & unmanned platforms, space, data links, and advanced Battle Management decision tools.

8. Net-Centric Capability (NCC): Provides integrated Net-Centric Command and Control (C2) applications and mission system access to Beyond-Line-of-Sight (BLOS) Internet Protocol (IP) SATCOM for AWACS Block 40/45 configured aircraft. NCC leverages the AWACS DRAGON modification's acquisition of INMARSAT-BLOS IP communications capability to provide E-3 AWACS with enhanced capability to manage the net-centric airborne battlespace as well as connect with C2 battle managers on the ground and in other airborne C2 platforms. NCC modifications enhance expedient off-board distribution of the AWACS air picture and other critical mission data, and give mission crews timely and accurate C2 data via an enhanced suite of battle-management tools including a robust chat capability and Airborne Web Services access to friendly forces tracking, Air Tasking Order updates, and other net-centric data sources while supporting simultaneous multi-level security domains. The program will begin risk reduction and technology development under the Material Solutions Development and Analysis Major Thrust in FY12, with a Milestone B projected in FY14.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	122.425	176.040	0.000	0.000	0.000
Current President's Budget	122.425	175.514	239.755	0.000	239.755
Total Adjustments	0.000	-0.526	239.755	0.000	239.755
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	-0.526			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	239.755	0.000	239.755

Change Summary Explanation

1. The increase in the Current PBR/President's Budget from FY 2009 to FY 2010 is due to changing from a fee-for-service contract strategy to secure Block 40/45 Mission Crew Trainers to a development and acquisition of a Block 40/45 Mission Crew Trainer capability, and the beginning of the Engineering and Manufacturing Development (EMD) Phase for the DRAGON modification.
2. The increase in the Current PBR/President's Budget from FY 2010 to FY 2011 is due to the TS-3 aircraft programmed depot maintenance cycle, NGIFF starting EMD for the Block 40/45 software configuration, and DRAGON's ramp up for the EMD effort.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i>				PROJECT 67411L: <i>Airborne Warning & Control System (AWACS)</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
67411L: <i>Airborne Warning & Control System (AWACS)</i>	122.425	175.514	239.755	0.000	239.755	181.718	120.660	128.852	91.118	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Mission: AWACS is the premier airborne platform providing command and control (C2)/battle management (BM) to Commander In Chief and combatant commander tasking for Joint, Allied, and Coalition operations, Humanitarian Relief, and Homeland Defense. AWACS provides a real-time picture of friendly, neutral, and hostile air activity. Its capabilities include all-altitude/all-weather surveillance of the battle space; early warning of enemy actions; a real-time ability to find, fix, track, and assess airborne or maritime threats; and detection, location, and identification of electronic emitters.

Budget Justification: This funding is in Budget Activity 7, Operational Systems Development, since the efforts support a fielded, operational weapon system. This funding will be used to investigate, develop, and integrate system improvements to enable the E-3 AWACS to remain an effective airborne battle management and surveillance system for command and control of combat forces and for strategic defense of the U.S. The efforts will pursue synergies and leverage the efforts of other U.S. 707-based airframes as well as the International AWACS partners that operate the 707 AWACS (NATO, United Kingdom, France, and Saudi Arabia). The efforts will coordinate with and participate in projects developing international standards (including NATO standards) to ensure joint, allied, and coalition interoperability.

This program element funds the following AWACS modernization efforts (RDT&E, AF):

1. Block 40/45 is replacing AWACS 1970's vintage mission systems that are experiencing Diminishing Manufacturing Sources (DMS) issues, are difficult and expensive to upgrade, and limit overall AWACS system performance. The Block 40/45 upgrade will improve integration, quality and timeliness of sensor data to the shooter, improve Combat Identification (CID), improve AWACS contribution to Time Critical Targeting via Data Link Infrastructure (DLI), improve electronic support measures processing and enable more effective, faster upgrades via an open-systems, Ethernet-based architecture. The upgrade will also update the ground support infrastructure including training systems.

Block 40/45 met a Milestone C in FY09 and awarded a contract for the first of six LRIP articles in FY09.

2. The Next Generation Identification Friend or Foe (NGIFF) Program provides AWACS with enhanced IFF interrogator operation to add a more secure Mode 5 capability. NSA declared IFF Mode 4 unsecure and obsolete on 5 Nov 2003. Joint Requirements Oversight Council Memo 047-07 requires IFF Mode 5 interrogation

UNCLASSIFIED

R-1 Line Item #149

Page 5 of 18

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i>	PROJECT 67411L: <i>Airborne Warning & Control System (AWACS)</i>
<p>capability by FY14. The new Mode 5 interrogation capability extends the effective range of the AWACS interrogator, while helping discriminate against closely spaced cooperative targets.</p> <p>NGIFF will develop and integrate a basic Mode 5 capability on Block 30/35 starting in FY09 and full Mode 5 on Block 40/45 starting in FY10. Hardware will be common between the platforms. NGIFF will also integrate Mode S, a civilian air traffic control capability residing in the NGIFF hardware, as funding allows.</p> <p>3. Diminishing Manufacturing Sources (DMS) Replacement of Avionics for Global Operations and Navigation (DRAGON) completes the FAA/International Civil Aviation Organization (ICAO)/ EUROCONTROL air traffic control mandated safety of flight capabilities. This program will provide the E-3 fleet with the flight instruments and other avionics for the Required Navigation Performance (RNP), and the surveillance and communication capabilities necessary to maintain continued critical unrestricted access to global airspace. Non-compliance will result in airspace restrictions and denials that will impact AWACS ability to support worldwide responses to situations requiring immediate on-scene command and control (C2) battle management. The DRAGON modifications replace the existing DMS GPS Integrated Navigation System (GINS) with a modern Flight Management System (FMS) that will accommodate new capabilities including Mode-5 IFF and Joint Mission Planning System (JMPS). Also included as part of the modification is the addition of data link communications, upgrade or replacement of emergency locating technologies, voice and data link digital radios, and improved visual displays. Emphasis on employment of COTS avionics is expected to lower cost, reduce the tech refresh cycle, and enhance life cycle management. Replacement of critical avionics subsystems that will become unsustainable beginning in 2010 are included in the DRAGON program. The Engineering and Manufacturing Development (EMD) phase of DRAGON is planned to be executed cooperatively between US and NATO. The US and NATO are currently pursuing a cooperative risk reduction effort and working towards award of a cooperative EMD contract in FY11.</p> <p>4. Support the War Fighter (STWF): STWF efforts support AWACS capability to create and sustain the force. Examples of these activities include, but are not limited to:</p> <ul style="list-style-type: none">o Designing, developing, and modernizing equipment and systems to ensure that AWACS can respond to urgent wartime/contingency acquisition requirements (e.g. Urgent Operational Needs (UONs) and Wartime Urgent & Compelling Needs (WUCNs).o Upgrading key capabilities to meet contingency needs, modernizing test systems, integrating battle management and data link enhancements, and supporting Reliability, Maintainability, and Availability (RM&A) initiatives which:<ul style="list-style-type: none">a. Improve the Mission Capable (MC) rate through RM&A analysis and development projects to provide system improvements that help meet or exceed the required MC rate. These efforts focus on increasing reliability of the air vehicle, command and control systems, voice and data communications systems, computer, sensor systems and infrastructure improvements.b. Solve diminishing manufacturing sources (DMS) logistics problems.c. Insert new technologies with the aim of reducing maintenance man-hours along with programmed depot maintenance (PDM) improvements to increase aircraft availability.		

UNCLASSIFIED

R-1 Line Item #149

Page 6 of 18

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i>	PROJECT 67411L: <i>Airborne Warning & Control System (AWACS)</i>
<p>Additionally, this program element funds AWACS Infrastructure and Systems Support. These efforts synchronize modernization requirements and infrastructure support across the entire weapon system-from depot and field test equipment, to maintenance trainers, to simulators, to integration labs, to the TS-3 Developmental Test and Evaluation Aircraft (RDT&E, AF):</p> <p>5. Test System-3/AWACS Integration Test Support (AITS): The E-3 AWACS Developmental Test and Evaluation (DT&E) aircraft, Test System 3 (TS-3, tail number 73-1674) and the Avionics Integration Laboratory (AIL) are Government owned/contractor managed, maintained and operated system level DT&E assets. These test-ready assets support AWACS modernization, including advanced projects and sustainment projects, and allow AWACS to participate in live-fly (e.g., Joint Expeditionary Force Experiment/JEFX; Empire Challenge/EC) and ground-based interoperability testing. These assets also support multiple international Airborne Early Warning and Control (AEW&C) projects on a fee basis, including projects for the French, RSAF, UK, Japan, and NATO AEW&C efforts.</p> <p>6. The Training, Support, and Infrastructure (TSI) programs cover required cross cutting programs and activities in support of AWACS modernization and enhancement efforts. These include managing the AWACS developmental infrastructure, support for equipment concurrency, modernization planning/analysis, and trainer/simulator integration and concurrency. The E-3 Radar Systems Integration Lab/Software Development Facility (SIL/SDF) is maintained and operated to provide customers with a functioning E-3 radar configuration in support of AWACS US, FMS and International radar development, production, and sustainment programs. New support equipment technologies and test strategies need to be analyzed to ensure concurrent capability to sustain existing, modified, and upgraded E-3 equipment. Trainer/simulator concurrency analysis and definition is required to ensure trainers and simulators are kept current with the AWACS baseline.</p> <p>This program element also funds Material Solutions Development & Analysis. These efforts look toward the future, investigating enhanced capabilities and exploring new mission areas (RDT&E, AF):</p> <p>7. Command & Control, Intelligence, Surveillance and Reconnaissance (C2ISR) System Improvements: Investigate and develop future capabilities of the AWACS weapon system, or next C2ISR platform. These efforts also include investigation, analysis and development to ensure that AWACS successfully integrates with Joint and Coalition forces in a net-centric environment. C2ISR primarily supports Pre-Systems Acquisition in the areas of Material Solution Analysis and Technology Development. This is accomplished by prototyping and demonstrating capabilities required by the warfighter. Examples of these activities include, but are not limited to:</p> <ul style="list-style-type: none"> o Evaluating emerging operational needs, concepts, and technologies to enable integration of AWACS' capabilities to align with integrated C2ISR network architectures as defined in Joint Vision 2020, Air Expeditionary Force CONOPS, C2 Constellation CONOPS, Air Force CONOPS, and C2ISR Mission area plans. o Improving sensors, communications, and multi-sensor integration such as the ability to send, receive, and fuse the air (and ground) picture via data link to fighter aircraft, through rapid prototyping, modeling, simulation, and participation in Joint exercises (e.g., Joint Expeditionary Forces Experiment (JEFX) and Empire Challenge (EC)). o Improving the timeliness and accuracy of information passed to/from fighter aircraft in the engagement zone by providing consistent and re-playable post-mission data to provide quicker reaction capabilities to support the air war. 		

UNCLASSIFIED

R-1 Line Item #149

Page 7 of 18

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i>	PROJECT 67411L: <i>Airborne Warning & Control System (AWACS)</i>
--	---	--

o Exploring concepts, developing technology, and demonstrating efforts that support continuous improvements and self-protection for C2ISR capabilities of manned & unmanned platforms, space, data links, and advanced Battle Management decision tools.

8. Net-Centric Capability (NCC): Provides integrated Net-Centric Command and Control (C2) applications and mission system access to Beyond-Line-of-Sight (BLOS) Internet Protocol (IP) SATCOM for AWACS Block 40/45 configured aircraft. NCC leverages the AWACS DRAGON modification's acquisition of INMARSAT-BLOS IP communications capability to provide E-3 AWACS with enhanced capability to manage the net-centric airborne battlespace as well as connect with C2 battle managers on the ground and in other airborne C2 platforms. NCC modifications enhance expedient off-board distribution of the AWACS air picture and other critical mission data, and give mission crews timely and accurate C2 data via an enhanced suite of battle-management tools including a robust chat capability and Airborne Web Services access to friendly forces tracking, Air Tasking Order updates, and other net-centric data sources while supporting simultaneous multi-level security domains. The program will begin risk reduction and technology development under the Material Solutions Development and Analysis Major Thrust in FY12, with a Milestone B projected in FY14.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Material Solutions Development and Analysis <i>FY 2009 Accomplishments:</i> In FY 2009: C2ISR System Improvements developed a prototype Iridium mIRC (Internet Relay Chat) capability and delivered it to AWACS currently in theater based on an Urgent Operational Need (UON). Researched and refined requirements for a Flight Performance Software capability (FPS) to allow release of a Request for Proposal (RFP)-FPS provides a automated software for computing Take-Off and Landing Data (TOLD) more accurately and efficiently than extrapolating paper graphs and hand calculations. Refined aircrew composition studies in conjunction with the Air Force Research Lab (AFRL) to better integrate new Block 40/45 air battle manager roles and responsibilities into the new mission system. Examined potential solutions to upgrade the sensor, increase reliability, implement countermeasures, and incorporate Electronic Protection. Conducted tests in the Systems Integration Lab (SIL) to assess potential sensor vulnerabilities to Electronic Attack; planned and prepared for Joint Expeditionary Force Exercise (JEFX) 2010 and Coalition Warfare Interoperability Demonstration (CWID) 2010. Formulated the Experiment Long Range Plan.	14.349	10.595	6.813	0.000	6.813

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i>	PROJECT 67411L: <i>Airborne Warning & Control System (AWACS)</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	122.425	175.514	239.755	0.000	239.755

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0207417F: <i>E-3 Mods, APAF</i>	96.155	76.562	192.681	0.000	192.681	158.429	196.803	231.458	250.579	0.000	0.000
• PE 0809731F: <i>Training Support (E-3 Aircraft), APAF</i>	0.000	2.448	2.482	0.000	2.482	2.522	2.568	2.615	2.666	0.000	0.000
• PE 0207417F (1): <i>E-3 Initial Spares, APAF</i>	2.461	10.751	18.248	0.000	18.248	18.526	18.837	19.158	19.516	0.000	0.000

D. Acquisition Strategy

Most major programs (Block 40/45, DRAGON, TS-3 and lab support) will be sole source to the Boeing Corporation, Seattle, WA.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i>	PROJECT 67411L: <i>Airborne Warning & Control System (AWACS)</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
(U) Block 40/45 EMD and Pre-Production	SS/CPAF	Boeing Seattle, WA	957.610	82.470	Jan 2010	89.814	Jan 2011	0.000		89.814	Continuing	Continuing	Continuing
(U) Next Generation Identification Friend or Foe (IFF)	SS/CPIF	Boeing Seattle, WA	23.368	25.660	Feb 2010	35.285	Feb 2011	0.000		35.285	Continuing	Continuing	Continuing
(U) DRAGON	SS/FPI	Boeing Seattle, WA	0.000	6.550	Jul 2010	25.935	Dec 2010	0.000		25.935	Continuing	Continuing	Continuing
(U) Support the War Fighter (STWF)	Various/Various	Various Various	6.183	6.042	Jan 2010	8.191	Jan 2011	0.000		8.191	Continuing	Continuing	Continuing
(U) C2ISR System Improvement	SS/Various	Boeing Seattle, WA	99.590	9.325	Oct 2009	5.996	Oct 2010	0.000		5.996	Continuing	Continuing	Continuing
(U) Prior Platform Modifications	Various/Various	Boeing Seattle, WA	1,603.750	0.000		0.000		0.000		0.000	0.000	1,603.750	0.000
Subtotal			2,690.501	130.047		165.221		0.000		165.221			

Remarks

Note: Total Program does not include NATO funds.

UNCLASSIFIED

R-1 Line Item #149

Page 14 of 18

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i>	PROJECT 67411L: <i>Airborne Warning & Control System (AWACS)</i>
--	---	--

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
(U)Support/ITSP MITRE, travel, other	Various/ Various	AWACS Program Office Hanscom AFB, MA	367.250	22.838	Oct 2009	27.712	Oct 2010	0.000		27.712	Continuing	Continuing	Continuing
Subtotal			367.250	22.838		27.712		0.000		27.712			

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
(U) Test System-3 AWACS Development and Production Test (ADAPT) Contract/ AWACS Integration Test Support (AITS) Contract / Other test activities	SS/Various	Boeing Seattle, WA	183.057	17.958	Oct 2009	41.142	Oct 2010	0.000		41.142	Continuing	Continuing	Continuing
(U) Training, Support & Infrastructure (TSI)	SS/Various	Boeing Seattle, WA	21.544	4.671	Jan 2010	5.680	Jan 2011	0.000		5.680	Continuing	Continuing	Continuing
Subtotal			204.601	22.629		46.822		0.000		46.822			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i>	PROJECT 67411L: <i>Airborne Warning & Control System (AWACS)</i>
--	---	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Remarks													
			Total Prior Years Cost	FY 2010	FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			3,262.352	175.514	239.755		0.000		239.755				

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

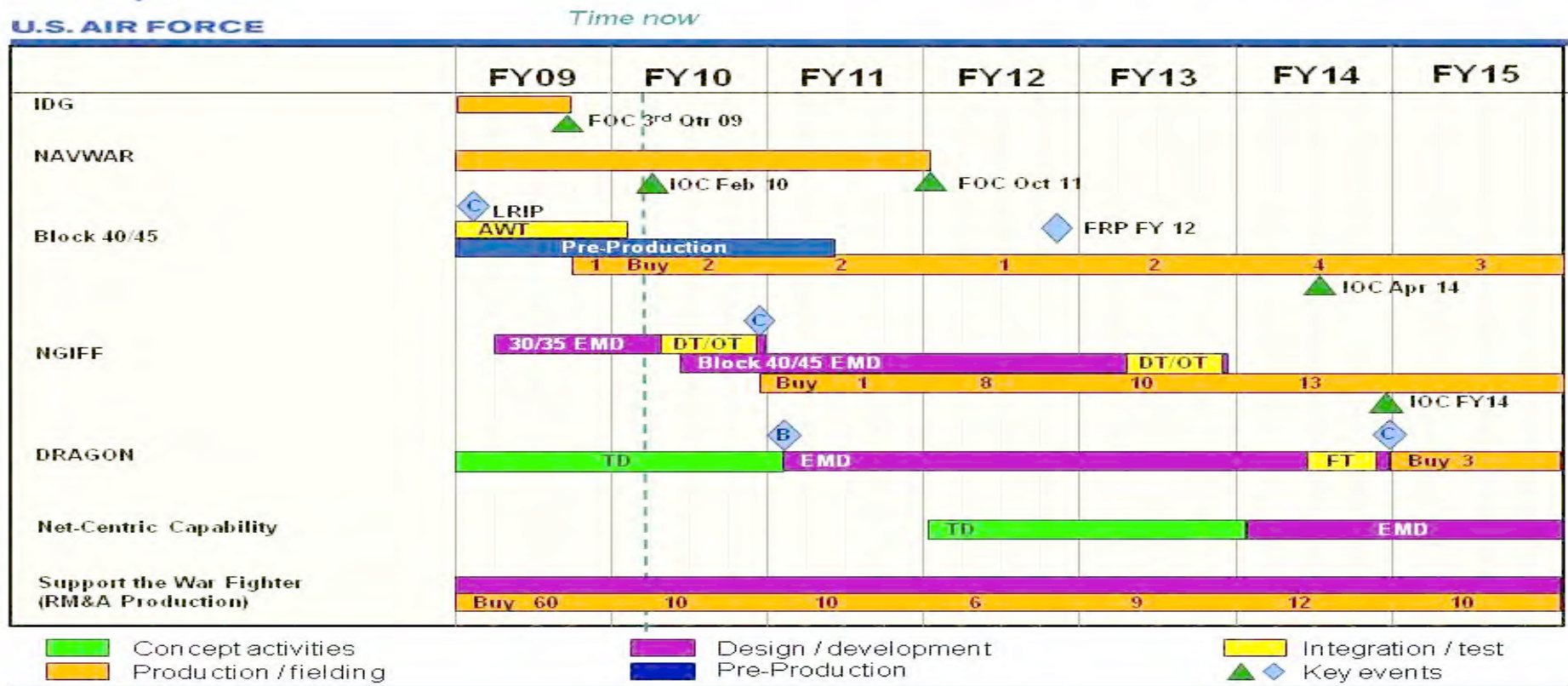
PE 0207417F: Airborne Warning and Control System (AWACS)

PROJECT

67411L: Airborne Warning & Control System (AWACS)



AWACS Schedule



Depicted by installation/production flow

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i>	PROJECT 67411L: <i>Airborne Warning & Control System (AWACS)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
IDG Production	1	2009	3	2009
IDG FOC	3	2009	3	2009
NAVWAR Production	1	2009	4	2011
NAVWAR IOC	2	2010	2	2010
40/45 Airworthiness Testing (AWT)	1	2009	1	2010
40/45 Pre-Production	1	2009	2	2011
40/45 LRIP Milestone C	1	2009	1	2009
40/45 LRIP (6 aircraft)	4	2009	4	2011
NGIFF Block 30/35 EMD	2	2009	4	2010
NGIFF Block 30/35 Developmental/Operational Testing	2	2010	4	2010
NGIFF Milestone C	4	2010	4	2010
NGIFF Block 40/45 EMD	2	2010	4	2011
NGIFF Production	4	2010	4	2011
DRAGON Technology Development	1	2009	1	2011
DRAGON Milestone B	1	2011	1	2011
DRAGON EMD	1	2011	4	2011
Support the War Fighter (STWF)	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207418F: <i>TAC AIRBORNE CONTROL SYSTEM</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	1.486	0.000	0.000	0.000	0.000	0.000	1.032	1.046	1.060	Continuing	Continuing
675234: <i>TACP Support</i>	1.486	0.000	0.000	0.000	0.000	0.000	1.032	1.046	1.060	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Joint Terminal Control Training and Rehearsal System (JTC TRS) project under the Tactical Airborne Control System funds developments necessary to provide Distributed Mission Operations (DMO) capable high-fidelity Joint Terminal Attack Controller (JTAC), and Combat Control Team (CCT) training and rehearsal system. Provides development funding to enable connectivity to DMO networks to allow geographically separated high-fidelity close air support platforms and JTACs/CCT teams to train together. Develops a system that will enable operators to conduct Joint Close Air Support (JCAS) training/mission rehearsal using tailored, dynamic scenarios that are relevant to mission tasking and capable of providing air traffic control training for CCT using tactical application of austere airbase operations. Using a system of systems approach JTC TRS provides incremental development to network in Increment 1 to aircrew full mission trainers and mission training centers, and by Increment 2, to Air Support Operations Centers (ASOCs) for Joint Tactical Air Strike Requests and air-ground coordination of Joint fires. Its primary focus is to provide a persistent total air-ground virtual training environment for networked air ground training and mission rehearsal capability that will develop both JTAC/CCT skills and train those air crews assigned to accomplish complex JCAS missions in close proximity to ground forces. Provides research and development to facilitate interoperability with joint/sister Service air ground simulation using industry standards.

This program is in Budget Activity 7, Operational System Development, because it updates and develops capabilities for current operational systems.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207418F: <i>TAC AIRBORNE CONTROL SYSTEM</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	1.486	0.000	0.000	0.000	0.000
Current President's Budget	1.486	0.000	0.000	0.000	0.000
Total Adjustments	0.000	0.000	0.000	0.000	0.000
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207418F: <i>TAC AIRBORNE CONTROL SYSTEM</i>	PROJECT 675234: <i>TACP Support</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675234: <i>TACP Support</i>	1.486	0.000	0.000	0.000	0.000	0.000	1.032	1.046	1.060	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Joint Terminal Control Training and Rehearsal System (JTC TRS) project under the Tactical Airborne Control System funds developments necessary to provide Distributed Mission Operations (DMO) capable high-fidelity Joint Terminal Attack Controller (JTAC), and Combat Control Team (CCT) training and rehearsal system. Provides development funding to enable connectivity to DMO networks to allow geographically separated high-fidelity close air support platforms and JTACs/CCT teams to train together. Develops a system that will enable operators to conduct Joint Close Air Support (JCAS) training/mission rehearsal using tailored, dynamic scenarios that are relevant to mission tasking and capable of providing air traffic control training for CCT using tactical application of austere airbase operations. Using a system of systems approach JTC TRS provides incremental development to network in Increment 1 to aircrew full mission trainers and mission training centers, and by Increment 2, to Air Support Operations Centers (ASOCs) for Joint Tactical Air Strike Requests and air-ground coordination of Joint fires. Its primary focus is to provide a persistent total air-ground virtual training environment for networked air ground training and mission rehearsal capability that will develop both JTAC/CCT skills and train those air crews assigned to accomplish complex JCAS missions in close proximity to ground forces. Provides research and development to facilitate interoperability with joint/sister Service air ground simulation using industry standards.

This program is in Budget Activity 7, Operational System Development, because it updates and develops capabilities for current operational systems.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue development of high-fidelity simulation system for JTAC/CCT Training <i>FY 2009 Accomplishments:</i> In FY 2009: Continuation of above activities <i>FY 2010 Plans:</i> In FY 2010: N/A	1.486	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207418F: <i>TAC AIRBORNE CONTROL SYSTEM</i>	PROJECT 675234: <i>TACP Support</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> In FY2011: N/A					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	1.486	0.000	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0207418F: <i>TAC Airborne Control System, Other Procurement, AF</i>	7.333	7.810	26.944	0.000	26.944	21.093	9.263	3.422	3.450	0.000	0.000
• PE 0207418F (1): <i>TAC Airborne Control System, O&M, AF</i>	0.000	1.518	2.788	0.000	2.788	4.442	4.575	4.569	4.893	0.000	0.000

D. Acquisition Strategy

The acquisition strategy will be based on a Small Business Set Aside to develop a Production Representative Article (PRA) with the required documentation to immediately compete a production contract through a yet to be determined (small business or full and open) approach. The PRA and first production lot will constitute Increment 1 which will allow JTAC/CCT teams to network to aircrew full mission trainers and mission training centers. Future increments will be incorporated as funding and technology allow.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207418F: <i>TAC AIRBORNE CONTROL SYSTEM</i>	PROJECT 675234: <i>TACP Support</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
677 AESG AFMC	TBD/TBD	677 AESG AFMC Wright Patterson AFB, OH	0.160	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.160	0.000		0.000		0.000		0.000			

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
605 TES ACC	TBD/TBD	605 TES/TXT ACC Eglin AFB FL	0.350	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.350	0.000		0.000		0.000		0.000			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207418F: <i>TAC AIRBORNE CONTROL SYSTEM</i>	PROJECT 675234: <i>TACP Support</i>
--	---	---

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Support	TBD/TBD	677 AESG AFMC Wright Patterson AFB, OH	0.976	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.976	0.000		0.000		0.000		0.000			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.486	0.000	0.000	0.000	0.000			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

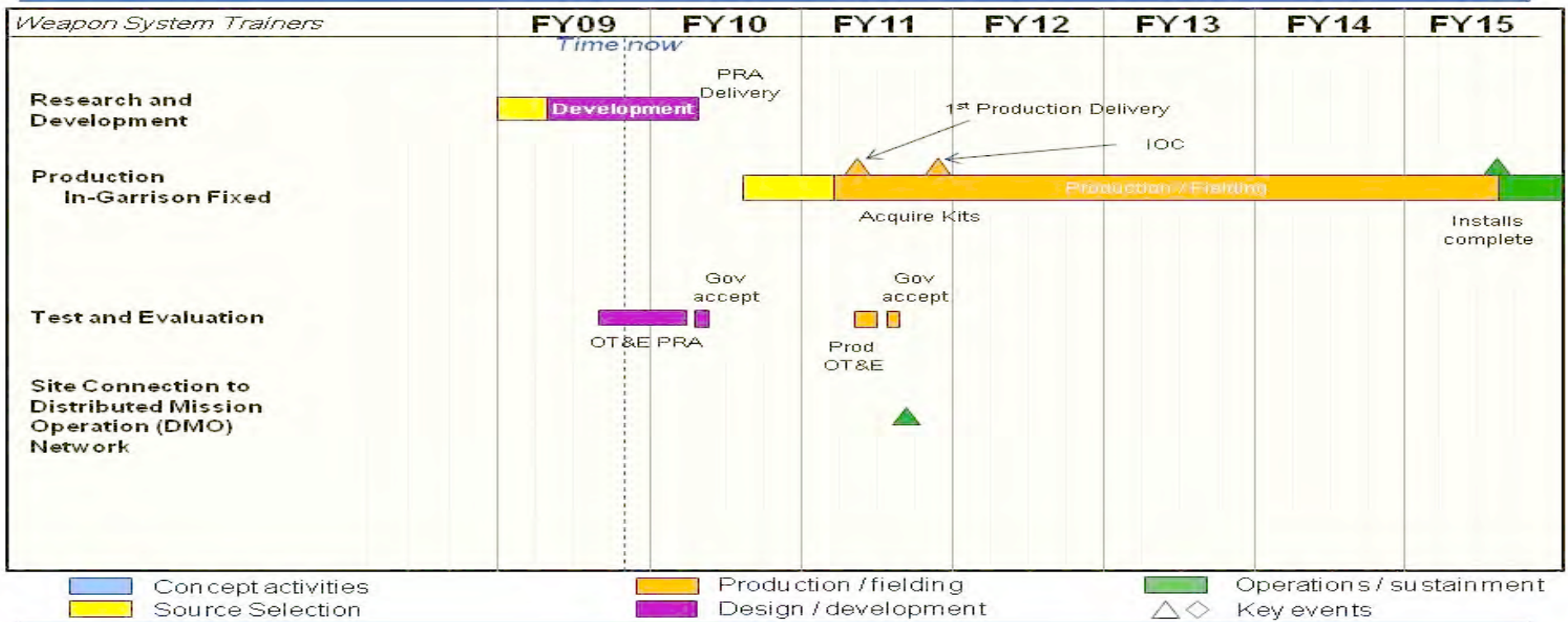
PE 0207418F: *TAC AIRBORNE CONTROL SYSTEM*

PROJECT

675234: *TACP Support*



Joint Terminal Control Training/Rehearsal System (JTC TRS)



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207418F: <i>TAC AIRBORNE CONTROL SYSTEM</i>	PROJECT 675234: <i>TACP Support</i>
--	---	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
JTC TRS In-garrison/Fixed Development	1	2009	4	2009
JTC In-garrison/Fixed I/OT& E	4	2009	4	2009
JTC TRS In-garrison/Fixed Development Delivery	2	2010	2	2010
JTC TRS In-garrison/Fixed Production Contract Award	1	2011	1	2011
JTC TRS In-garrison/Fixed Production Installs Begin	2	2011	2	2011
JTC TRS In-garrison/Fixed Production IOC	4	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	28.210	73.009	67.532	0.000	67.532	71.459	71.693	64.893	65.545	Continuing	Continuing
674934: <i>Tactical Air Control Party (TACP)</i>	12.246	26.943	17.298	0.000	17.298	17.494	17.421	10.829	10.698	Continuing	Continuing
675189: <i>C2ISR JTRS Integration</i>	15.964	46.066	50.234	0.000	50.234	53.965	54.272	54.064	54.847	Continuing	Continuing

A. Mission Description and Budget Item Justification

The TACP-Modernization (TACP-M) program is acquiring new equipment to give TACPs the capability to detect targets and compute precise target coordinates for employment of GPS aided weapons, reduce the potential for fratricide, and reduce the potential for collateral damage in civilian-occupied areas. This new equipment reduces the kill chain by reducing the time required to submit air support requests, provide target information to aircraft, and ensure pilots are tracking the correct target. By reducing the time required to execute close air support missions in "troops-in-contact" situations, the TACP-M program helps reduce the number of U.S. and coalition casualties due to enemy action. TACPs deploy with Army maneuver units and provide a Command and Control (C2) link for Close Air Support (CAS), airlift and AF surveillance/reconnaissance missions. TACPs are equipped with various targeting and communications equipment needed to interface with ground maneuver forces, aircraft conducting CAS operations, aerospace C2 aircraft/agencies, and Intelligence, Surveillance and Reconnaissance (ISR) platforms/agencies. The TACP-M program provides TACP and Air Support Operations Centers (ASOCs) personnel with the capability to precisely locate and target enemy ground forces by integrating various Laser Targeting Devices (LTD) and ultra high frequency satellite communications (UHF SATCOM) for beyond-line-of-sight (BLOS) Air Force Air Request Net operations. The purpose of the TACP-M program is to reduce reliance on voice transmission and replace analog equipment with the latest digital, data link and streaming video (e.g. Remote Operations Video Enhanced Receiver (ROVER)) technology. Upgraded digital communications enable machine-to-machine interface between TACPs and Close Air Support (CAS) aircraft, Army units and other TACP units. Machine-to-Machine communication provides reliable, high speed digital communications, ultimately supports joint and multinational interoperability, improves battlefield Situational Awareness (SA), increases targeting accuracy, reduces kill chain decision time, improves data flows/information exchange, and reduces potential fratricide. The TACP-M program supports the Overseas Contingency Operations (OCO) and significantly increased the mission effectiveness of the TACPs and ASOCs during Operations Enduring and Iraqi Freedom. The TACP-M program continues to be instrumental in providing ground communications for TACPs during federal emergency relief operations and Homeland Defense initiatives.

TACP-M is divided into three segments: Dismounted, mounted, and software. The dismounted TACP provides a modernized/modular capability via a streamlined acquisition using non-developmental, off-the-shelf (OTS) Manpack Radios (MPR) or Handheld Radios (HHR), laser targeting devices (LTDs) that include Laser Range Finder (LRFs), Joint Effects Targeting System (JETS), and laser designators, and imagers), tactical computers for dismounted and Tactical Operations Center use, and ancillary equipment combined with TACP Close Air Support System (CASS) software. The mounted TACP Vehicular Communications System (VCS) is an upgrade of the existing TACP communications systems with new Software Communication Architecture (SCA)-CERTIFIED, Joint Tactical Radio System (JTRS) or available

UNCLASSIFIED

R-1 Line Item #151

Page 1 of 22

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>	
<p>software programmable radios and some legacy radios and ancillary components, which provides reliable communications for CAS operations. TACP-M will integrate Internet Protocol (IP)-capable, SCA radios for voice & data UHF SATCOM and LOS UHF / VHF communications. TACP-M funds will continue to develop systems integration software (for dismounted and mounted) for multiple air/ground platforms (e.g. JETS (TECS software development), Small Diameter Bomb II (SDBII), F-35, Mine Resistant Ambush Protected (MRAP) vehicle, Gateway Lite, and ASOC Gateway vehicle) and will provide interoperability datalinks such as Situational Awareness Data Link (SADL), Link-16 and other transformational communications capabilities</p> <p>Mounted operations in overseas contingency operations also require new digital communications/network enabled capabilities for armored High Mobility, Multi-Wheeled Vehicle (HMMWV)s and Mine Resistant Ambush Protected (MRAP) and other support vehicle platforms used in times of conflict. Vehicle Communications System (VCS) is a vital modular solution that provides network enabled communications to the aircraft and C2 nodes throughout the area of operations.</p> <p>Joint Tactical Radio Systems (JTRS) will link the power of the Global Information Grid (GIG) to the warfighter in applying fire effects and achieving overall battlefield superiority. By developing and implementing an open architecture of cutting-edge radio waveform technology, multiple radio types (e.g., handheld, ground-mobile, airborne, maritime, etc.) are now allowed to communicate with one another. The ultimate goal is to produce a family of interoperable, modular, software-defined radios that operate as nodes in a network to ensure secure wireless communication and networking services for mobile and fixed forces. These goals extend to U.S. allies, joint and coalition partners, and, in time, disaster response personnel. JTRS is critical to serving as the "last tactical mile" connecting the warfighter on the ground into the networking capabilities that are delivered through the GIG. As a critical component of the DoD network-centric transformation effort, JTRS provides:</p> <p>Ad-hoc networked communications on-the-move and at the tactical edge to support information sharing and combat readiness - the most challenging requirement, representing the highest capability payoff; Interoperability through a common set of shared open system standards and applications, including the Software Communications Architecture; Cost savings via an 'open' Enterprise Business Model promoting competition; Tactical voice, video, and data battlefield communications when reach back is not possible.</p> <p>JTRS will make the Air Force more effective in Joint warfighting through a series of new, joint networking waveforms. JTRS radios are software defined, digital radios capable of running software defined legacy waveforms. JTRS will provide next generation SATCOM beyond-line-of-sight communication capability, to replace UHF DAMA SATCOM, which is nearing the end of its life cycle, through the Mobile User Objective System (MUOS) waveform. It will also provide the Wideband Networking Waveform (WNW) and Soldier Radio Waveform (SRW) which, in combination, provide interoperability with the Army, from the brigade level, down to the dismounted soldier, enabling Joint Close Air Support (JCAS), Combat Search and Rescue (CSAR) and other Joint missions.</p> <p>To successfully integrate these digital radios on Air Force platforms, displaying information received and transmitted over these radios for operator use, and integrating JTRS information with information from other aircraft systems, non-recurring engineering investment in JTRS "A-Kit" items is required. The JTRS A-Kit includes racks, cabling, digital processors and data displays necessary to integrate JTRS radio sets, or B-Kits, onto multiple Air Force platforms. Air Force will continue looking for solutions for the Joint Aerial Networking-Tactical Edge (JAN-TE) requirement.</p>		

UNCLASSIFIED

R-1 Line Item #151

Page 2 of 22

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>
--	---

This program is in budget activity 7, Operational System Development, since it examines appropriate emerging technologies for the continuing incremental development of Off-The-Shelf (OTS) equipment, provides software development, and determines and resolves integration issues pertaining to OTS.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	29.587	73.157	0.000	0.000	0.000
Current President's Budget	28.210	73.009	67.532	0.000	67.532
Total Adjustments	-1.377	-0.148	67.532	0.000	67.532
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	9.375			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-1.377	-9.523	67.532	0.000	67.532

Change Summary Explanation

FY10 increase to support Command & Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) platform installation kit development and radio integration to meet FY11 projected platform installation schedule.

FY10-13 increase to support AF share of Joint Effects Targeting System (JETS) for laser designators development.

FY10 funding for ROVER FMV encryption (\$9.375M) inadvertently reported in this PE, but will be moved to PE 0207277F.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>				PROJECT 674934: <i>Tactical Air Control Party (TACP)</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674934: <i>Tactical Air Control Party (TACP)</i>	12.246	26.943	17.298	0.000	17.298	17.494	17.421	10.829	10.698	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The TACP-Modernization program is acquiring new equipment to give TACPs the capability to detect targets and compute precise target coordinates for employment of GPS aided weapons, reduce the potential for fratricide, and reduce the potential for collateral damage in civilian-occupied areas. This new equipment reduces the kill chain by reducing the time required to submit air support requests, provide target information to aircraft, and ensure pilots are tracking the correct target. By reducing the time required to execute close air support missions in "troops-in-contact" situations, the TACP-M program helps reduce the number of U.S and coalition casualties due to enemy action. TACPs deploy with Army maneuver units and provide a Command and Control (C2) link for Close Air Support (CAS), airlift and AF surveillance/reconnaissance missions. TACPs are equipped with various targeting and communications equipment needed to interface with ground maneuver forces, aircraft conducting CAS operations, aerospace C2 aircraft/agencies, and Intelligence, Surveillance and Reconnaissance (ISR) platforms/agencies. The TACP-Modernization (TACP-M) program provides TACP and Air Support Operations Centers (ASOCs) personnel with the capability to precisely locate and target enemy ground forces by integrating various Laser Targeting Devices (LTD) and ultra high frequency satellite communications (UHF SATCOM) for beyond-line-of-sight (BLOS) Air Force Air Request Net operations. The purpose of the TACP-M program is to reduce reliance on voice transmission and replace analog equipment with the latest digital, data link and streaming video (e.g. Remote Operations Video Enhanced Receiver (ROVER)) technology. Upgraded digital communications enable machine-to-machine interfaes between TACPs and Close Air Support (CAS) aircraft, Army units, and other TACP units. Machine-to-Machine communication provides for reliable, high-speed digital communications, that ultimately supports joint and multinational interoperability, improves battlefield Situational Awareness (SA), increases targeting accuracy, reduces kill chain decision time, improves data flows/information exchange, and reduces potential fratricide. The TACP-M program supports the OCO and significantly increased the mission effectiveness of the TACPs and ASOCs during Operations Enduring and Iraqi Freedom. The TACP-M program continues to be instrumental in providing ground communications during federal emergency relief operations and Homeland Defense initiatives.

TACP-M is divided into three segments: Dismounted, mounted, and software. The dismounted TACP provides a modernized/modular capability via a streamlined acquisition using non-developmental, off-the-shelf (OTS) Manpack Radios (MPR) or Handheld Radios (HHR), laser targeting devices (LTDs that include Laser Range Finder (LRFs), Joint Effects Targeting System (JETS), and laser designators and imagers), tactical computers for dismounted and Tactical Operations Center use, and ancillary equipment combined with TACP Close Air Support System (CASS) software. The mounted TACP Vehicular Communications System (VCS) is an upgrade of the existing TACP analog only communications systems with new Software Communications Architecture (SCA)-certified, Joint Tactical Radio System (JTRS) approved radios and some legacy radios and ancillary components, which provides reliable digital and voice communications for CAS operations. TACP-

UNCLASSIFIED

R-1 Line Item #151

Page 4 of 22

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>	PROJECT 674934: <i>Tactical Air Control Party (TACP)</i>
--	---	--

M will integrate Internet Protocol (IP)-capable, SCA radios for voice & data UHF SATCOM and LOS UHF / VHF communications. TACP-M funds will continue to develop systems integration software (for dismounted and mounted) for multiple air/ground platforms (e.g. JETS (TECS software development), Small Diameter Bomb II (SDBII), F-35, Mine Resistant Ambush Protected (MRAP) vehicle, Gateway Lite, and ASOC Gateway vehicle) and will provide interoperability datalinks such as Situational Awareness Data Link (SADL), Link-16 and other transformational communications capabilities

Mounted operations in overseas contingency operations also require new digital communications/network enabled capabilities for armored HMMWVs and Mine Resistant Ambush Protected (MRAP) and other support vehicle platforms used in times of conflict. Vehicle Communications System is a vital modular solution that provides mobile TACPs network enabled communications in order to communicate with aircraft and C2 nodes throughout the area of operations.

Activities also include studies and analysis to both current program planning and execution future program planning

This program is in budget activity 7, Operational System Development, since it examines appropriate emerging technologies for the continuing incremental development of OTS equipment, provides software development, and determines and resolves integration issues pertaining to OTS.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: Vehicle Communications System (VCS) - Design, develop, fabricate, integrate , test, provide associated documentation (e.g. technical manuals) in support of delivering a digital multip...</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Initiated the design/development/documentation/testing of the VCS for integration into High Mobility Multi-Wheeled Vehicles (HMMWVs). Completed development efforts up to Critical Design Review (CDR). This effort required contractor and engineering support to accomplishing the engineering, management, and test planning activities.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Complete the design/development/documentation of the VCS for integration into High Mobility Multi-Wheeled Vehicles (HMMWVs). Fabricate and integrate VCS developmental units into HMMWVs for contractor, qualification, and operational testing and evaluation of the VCS. Complete</p>	7.895	4.432	3.037	0.000	3.037

UNCLASSIFIED

R-1 Line Item #151

Page 5 of 22

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>	PROJECT 674934: <i>Tactical Air Control Party (TACP)</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Develop new MTM interfaces to Small Diameter Bomb II and Joint Strike Fighter (F35). Develop new MTM interfaces with C2 nodes and aircraft across the USAF, Joint, and Coalition environment and as well as developing new capabilities to satisfy ORD requirements. Develop, integrate, and test CASS mission software to be hosted on VCS. This effort will include contractor support, engineering support, test and evaluation. This effort also continues support to the Joint Digital Aided Close Air Support (DACAS) initiative to drive all major players in the Close CAS arena to a common standard.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continue to develop new MTM interfaces to Small Diameter Bomb II and Joint Strike Fighter (F35). Develop new interfaces with Joint Air Ground Integration Cell, C2 nodes, and aircraft across the USAF, Joint, and Coalition environment as well as developing new capabilities to satisfy ORD requirements. This effort will include contractor support, engineering support, test and evaluation. This effort also continues support to the Joint Digital Aided Close Air Support (DACAS) initiative to drive all major players in the Close CAS arena to a common standard.</p> <p><i>FY 2011 OCO Plans:</i> In FY2011 OCO: N/A</p>						
<p>MAJOR THRUST: Joint Effect Targeting System (JETS) - An Army-led program to develop, integrate, and test an integrated CAS targeting system that is smaller, lighter, and more accurate than current...</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Supported a TECS test excursion. N/A</p> <p><i>FY 2010 Plans:</i> In FY 2010: AF funds will support the development of a prototype TLDS system through the JETS program office. The primary TLDS capability requirements are; provide a reduction in hardware</p>		0.000	7.000	7.000	0.000	7.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>	PROJECT 674934: <i>Tactical Air Control Party (TACP)</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A					
Accomplishments/Planned Programs Subtotals	12.246	26.943	17.298	0.000	17.298

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0207423F: <i>Advanced Communications System, (OPAF)</i>	76.295	64.815	133.494	0.000	133.494	137.686	135.159	108.808	108.299	0.000	0.000

D. Acquisition Strategy

The TACP-M is executing an incremental development for the TACP CASS software. TACP CASS software systems engineering, design, integration, and fielding support is being provided under a cost plus fixed fee contract. TACP-M awarded a fixed price development contract (with options for production) for the Vehicular Communication System (VCS) in FY09 under full and open competition. This contract will deliver an integrated system (mounted/dismounted) with an emphasis on Reduced Total Ownership Cost (RTOC) over the life cycle of the program.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>	PROJECT 674934: <i>Tactical Air Control Party (TACP)</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ESC Sys Int Software Dev't	C/CPFF	Rockwell Collins Poway, CA	1.317	2.601	Jan 2010	4.577	Jan 2011	0.000		4.577	Continuing	Continuing	Continuing
VCS (MRC-144 Upgrade)	C/FFP	BAE Systems, Inc Rockville, MD	6.967	2.230	Jan 2010	2.239	Jan 2011	0.000		2.239	Continuing	Continuing	Continuing
JETS/TDLS	MIPR	Army - SSL Division Ft Belvoir, VA	0.000	6.650	Mar 2010	7.000	Mar 2011	0.000		7.000	Continuing	Continuing	Continuing
ROVER FMV encryption	TBD/TBD	TBD TBD	0.000	9.375	Mar 2010	0.000		0.000		0.000	0.000	9.375	0.000
Subtotal			8.284	20.856		13.816		0.000		13.816			

Remarks
Funds for ROVER transferred to PE 0207277F; NVESD Omnibus.

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Engineering	TBD/TBD	TBD TBD	1.051	1.104		1.291		0.000		1.291	Continuing	Continuing	Continuing
Subtotal			1.051	1.104		1.291		0.000		1.291			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>	PROJECT 674934: <i>Tactical Air Control Party (TACP)</i>
--	---	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Agency Support	Various/ Various	Various Various	2.683	3.100	Dec 2009	1.999	Dec 2010	0.000		1.999	Continuing	Continuing	Continuing
Subtotal			2.683	3.100		1.999		0.000		1.999			

Remarks
Development, operational and interoperability testing

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support	Various/ Various	Various Various	0.228	1.883	Jan 2010	0.192	Jan 2011	0.000		0.192	Continuing	Continuing	Continuing
Subtotal			0.228	1.883		0.192		0.000		0.192			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.246	26.943		17.298		0.000		17.298			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>	PROJECT 674934: <i>Tactical Air Control Party (TACP)</i>
--	---	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>	PROJECT 674934: <i>Tactical Air Control Party (TACP)</i>

	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Software Development and Test - TACP-CASS v1.4.2	■	■	■	■	■																							
Software Development and Test- TACP-CASS v1.4.3		■	■	■	■	■	■	■																				
Software Development and Test- TACP-CASS v1.4.4						■	■	■	■	■	■	■																
Joint Effects Targeting Systems					■	■	■	■	■	■	■	■																
VCS Milestone (MS) B	■																											
VCS Development	■	■	■	■	■	■	■	■	■																			
VCS Milestone (MS) C									■																			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>	PROJECT 674934: <i>Tactical Air Control Party (TACP)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Software Development and Test - TACP-CASS v1.4.2	1	2009	1	2010
Software Development and Test- TACP-CASS v1.4.3	2	2009	4	2010
Software Development and Test- TACP-CASS v1.4.4	2	2010	4	2011
Joint Effects Targeting Systems	1	2010	4	2011
VCS Milestone (MS) B	1	2009	1	2009
VCS Development	1	2009	1	2011
VCS Milestone (MS) C	1	2011	1	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>	PROJECT 675189: <i>C2ISR JTRS Integration</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675189: <i>C2ISR JTRS Integration</i>	15.964	46.066	50.234	0.000	50.234	53.965	54.272	54.064	54.847	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Joint Tactical Radio Systems (JTRS) will link the power of the Global Information Grid (GIG) to the warfighter in applying fire effects and achieving overall battlefield superiority. By developing and implementing an open architecture of cutting-edge radio waveform technology, multiple radio types (e.g., handheld, ground-mobile, airborne, maritime, etc.) are now allowed to communicate with one another. The ultimate goal is to produce a family of interoperable, modular, software-defined radios that operate as nodes in a network to ensure secure wireless communication and networking services for mobile and fixed forces. These goals extend to U.S. allies, joint and coalition partners, and, in time, disaster response personnel. JTRS is critical to serving as the "last tactical mile" connecting the warfighter on the ground into the networking capabilities that are delivered through the GIG. As a critical component of the DoD network-centric transformation effort, JTRS provides: Ad-hoc networked communications on-the-move and at the tactical edge to support information sharing and combat readiness - the most challenging requirement, representing the highest capability payoff; Interoperability through a common set of shared open system standards and applications, including the Software Communications Architecture; Cost savings via an 'open' Enterprise Business Model promoting competition; Tactical voice, video, and data battlefield communications when reach back is not possible.

JTRS will make the Air Force more effective in Joint warfighting through a series of new, joint networking waveforms. JTRS radios are software defined, digital radios capable of running software defined legacy waveforms. JTRS will provide next generation SATCOM beyond-line-of-sight communication capability, to replace UHF DAMA SATCOM, which is nearing the end of its life cycle, through the Mobile User Objective System (MUOS) waveform. It will also provide the Wideband Networking Waveform (WNW) and Soldier Radio Waveform (SRW) which, in combination, provide interoperability with the Army, from the brigade level, down to the dismounted soldier, enabling Joint Close Air Support (JCAS), Combat Search and Rescue (CSAR) and other Joint missions.

To successfully integrate these digital radios on Air Force platforms, displaying information received and transmitted over these radios for operator use, and integrating JTRS information with information from other aircraft systems, non-recurring engineering investment in JTRS "A-Kit" items is required. The JTRS A-Kit includes racks, cabling, digital processors and data displays necessary to integrate JTRS radio sets, or B-Kits, onto multiple Air Force platforms. Air Force will continue looking for solutions for the Joint Aerial Networking-Tactical Edge (JAN-TE) requirement.

This program is in budget activity 7, Operational System Development, since it examines appropriate emerging technologies for the continuing incremental development of Off-The-Shelf (OTS) equipment, provides software development, and determines and resolves integration issues pertaining to OTS.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>	PROJECT 675189: <i>C2ISR JTRS Integration</i>
--	---	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207423F: <i>Advanced Communication System, (APAF)</i>	61.740	12.755	11.571	0.000	11.571	177.312	256.181	223.404	249.251	0.000	0.000
• PE 0207423F (1): <i>Advanced Communication System, (OPAF)</i>	87.291	59.591	31.693	0.000	31.693	199.515	156.096	298.801	340.180	0.000	0.000

D. Acquisition Strategy

Air Force JTRS Procurement and Integration Office will perform system engineering integration, to deliver an interoperable, fully synchronized, deployable JTRS system under various contract awards. This effort will assist various AF platform in acquiring and integrating the next generation communications system, to include all key documentation (CONOPS, TTPs, ICDs, TRDs, etc.)

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>	PROJECT 675189: <i>C2ISR JTRS Integration</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering, Planning, and Integration-1	SS/CPIF	Northrop Grumman Melbourne, FL	4.820	21.830	Feb 2010	14.770	Feb 2011	0.000		14.770	Continuing	Continuing	Continuing
Systems Engineering, Planning, and Integration-2	SS/CPIF	Boeing and Lockheed Martin Various	0.000	2.497	Feb 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Systems Engineering, Planning, and Integration-3	SS/CPIF	General Atomics San Diego, CA	0.000	4.500	Feb 2010	9.000	Feb 2011	0.000		9.000	Continuing	Continuing	Continuing
Systems Engineering, Planning, and Integration-4	C/CPFF	L3COM IS Greenville, TX	3.000	0.000		3.820	Feb 2011	0.000		3.820	Continuing	Continuing	Continuing
Systems Engineering, Planning, and Integration-5	SS/CPIF	Rockwell Collins Various	7.792	10.000	Feb 2010	4.100	Feb 2011	0.000		4.100	Continuing	Continuing	Continuing
Systems Engineering, Planning, and Integration-6	Various/ Various	Various Various	0.000	0.000		16.257	Feb 2011	0.000		16.257	0.000	16.257	0.000
Subtotal			15.612	38.827		47.947		0.000		47.947			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>	PROJECT 675189: <i>C2ISR JTRS Integration</i>
--	---	---

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Support	Various/ Various	Various Various	0.352	1.036	Feb 2010	1.130	Feb 2011	0.000		1.130	0.000	2.518	0.000
Subtotal			0.352	1.036		1.130		0.000		1.130	0.000	2.518	0.000

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Interoperability Test (EDMs)	MIPR	Various Various	0.000	6.203	Feb 2010	1.157		0.000		1.157	0.000	7.360	0.000
Subtotal			0.000	6.203		1.157		0.000		1.157	0.000	7.360	0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	15.964	46.066		50.234		0.000		50.234			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207423F: <i>Advanced Communications Systems</i>	PROJECT 675189: <i>C2ISR JTRS Integration</i>

	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Systems Engineering	■	■	■	■	■	■	■	■	■	■	■	■																
Planning and Integration	■	■	■	■	■	■	■	■	■	■	■	■																
Operational & Interoperability Test Planning		■	■	■	■	■	■	■	■	■	■	■																

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207423F: *Advanced Communications Systems*

PROJECT

675189: *C2ISR JTRS Integration*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Systems Engineering	1	2009	4	2011
Planning and Integration	1	2009	4	2011
Operational & Interoperability Test Planning	2	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207431F: <i>Combat Air Intelligence System</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	1.475	3.310	0.000	3.310	5.684	5.770	5.858	5.944	Continuing	Continuing
675307: <i>TARGETING ENTERPRISE RESEARCH</i>	0.000	0.983	2.142	0.000	2.142	4.033	4.094	4.157	4.218	0.000	0.000
675309: <i>GEO Info & Serv Software</i>	0.000	0.492	1.168	0.000	1.168	1.651	1.676	1.701	1.726	0.000	0.000

A. Mission Description and Budget Item Justification

The mission of Combat Air Intelligence Systems (CAIS) is to process, analyze, and disseminate intelligence for air component and unit operations worldwide by providing key intelligence infrastructure and tactical production capabilities for the Air Force with true backbone type of intelligence support for air operations.

CAIS is focused on providing the "tactical" combat-oriented intelligence infrastructure for Air Force major commands: providing funding to ACC, PACAF, USAFE, AMC, AFMC, AFSOC, and AETC to primarily fund Air Intelligence Squadrons and the 480th Intelligence Group.

This program is in Budget Activity 7, Operational System Development, because it addresses the tactical combat-oriented intelligence infrastructure for the Air Force major commands.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	1.475	0.000	0.000	0.000
Current President's Budget	0.000	1.475	3.310	0.000	3.310
Total Adjustments	0.000	0.000	3.310	0.000	3.310
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	3.310	0.000	3.310

UNCLASSIFIED

R-1 Line Item #153

Page 1 of 12

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207431F: *Combat Air Intelligence System*

Change Summary Explanation

FY 2011: The FY 2010 President's Budget submittal did not reflect FY 2011 through Fy 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

R-1 Line Item #153

Page 2 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207431F: <i>Combat Air Intelligence System</i>	PROJECT 675307: <i>TARGETING ENTERPRISE RESEARCH</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675307: <i>TARGETING ENTERPRISE RESEARCH</i>	0.000	0.983	2.142	0.000	2.142	4.033	4.094	4.157	4.218	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Targeting Training emphasis ensures certified targeteers meet growing precision-guided munitions inventory

GWOT demands create training and continuity challenges

IFTUs and Training Transformation helping to alleviate training burden

Increased demand on classified systems and networks to support operations and mission requirements

JWICS

GPL

A. Mission Description and Budget Item Justification

Provides support to JWICS users utilizing Tactical Intelligence Applications, Target Planning & Execution, Geospatial Intelligence, Intelligence Training and dissemination architecture targeting capabilities. System information is in direct support to National, Combatant Command, and Air Force Intelligence Missions.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Conduct Targeting Enterprise Research <i>FY 2009 Accomplishments:</i> In FY 2010: Conduct Targeting Enterprise Research	0.000	0.983	2.142	0.000	2.142

UNCLASSIFIED

R-1 Line Item #153

Page 3 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207431F: <i>Combat Air Intelligence System</i>	PROJECT 675307: <i>TARGETING ENTERPRISE RESEARCH</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2011: Conduct Targeting Enterprise Research</p> <p><i>FY 2011 Base Plans:</i> In FY 2011 OCO: N/A</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	0.000	0.983	2.142	0.000	2.142

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (18406): <i>Not applicable</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

All contracts are awarded based on full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207431F: <i>Combat Air Intelligence System</i>	PROJECT 675307: <i>TARGETING ENTERPRISE RESEARCH</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Targeting Enterprise Research	TBD/TBD	TBD TBD	0.000	0.983	Jan 2010	2.142	Jan 2011	0.000		2.142	Continuing	Continuing	Continuing
Subtotal			0.000	0.983		2.142		0.000		2.142			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.983	2.142	0.000	2.142			

Remarks


Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207431F: Combat Air Intelligence System	PROJECT 675307: TARGETING ENTERPRISE RESEARCH

Geospatial Product Library (GPL) Schedule

MAJCOM	FY10	FY11	FY12	FY13	FY14	FY15
ACC						

 R&D SOFTWARE/HARDWARE (67-4826)

Geospatial Product Library (GPL) RDT&E Tasks:

Develop an Air Force open source (i.e. free software) web services capability to be hosted on the Enhanced GPL. Prototype to initially provide various Open Geospatial Consortium (OGC) services in a test-bed environment.

Continue development of the Enhanced GPL. The goal is to transform the GPL into a modular geospatial data server that is scalable in terms of capability (processing & storage) and application software (mission support).

Continue research in the latest automation techniques with a goal of improving or making more efficient the automated data flow to the fielded GPL systems.

UNCLASSIFIED

R-1 Line Item #153
Page 6 of 12

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY
 3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0207431F: *Combat Air Intelligence System*

PROJECT
 675307: *TARGETING ENTERPRISE RESEARCH*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Targeting Enterprise Research	1	2010	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207431F: <i>Combat Air Intelligence System</i>	PROJECT 675309: <i>GEO Info & Serv Software</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675309: <i>GEO Info & Serv Software</i>	0.000	0.492	1.168	0.000	1.168	1.651	1.676	1.701	1.726	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Air Force GEOINT Support program funds the Air Force Geospatial Product Library (GPL) which is currently fielded to all Combatant Command Air Components and subordinate units supporting global air operations. The GPL provides digital GEOINT data to support mission planning, targeting & intelligence in support of mission objectives.

Global Positioning Library (GPL) installed at approximately 180 sites with an estimated 250 sites required by FY 2010 to continue effort.

A. Mission Description and Budget Item Justification

(U) Provides support to Geospatial resources utilized in Geospatial Intelligence Databasing Applications, Technology Exploration and Technology Refresh initiatives, management and dissemination architecture, GI&S modernization and enablers for targeting capabilities. Provides support to the MAJCOMS to ensure requisite and available target intelligence and Geospatial Intelligence tools and information directly available to combatants.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Provides GEO Info & Serv Software <i>FY 2009 Accomplishments:</i> In FY 2010: N/A <i>FY 2010 Plans:</i> In FY 2011: N/A <i>FY 2011 Base Plans:</i> In FY 2011 OCO: N/A	0.000	0.492	1.168	0.000	1.168

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207431F: <i>Combat Air Intelligence System</i>	PROJECT 675309: <i>GEO Info & Serv Software</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	0.000	0.492	1.168	0.000	1.168

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (18565): <i>None.</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy
All major contracts within this project will be awarded after full and open competition.

E. Performance Metrics
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207431F: <i>Combat Air Intelligence System</i>				PROJECT 675309: <i>GEO Info & Serv Software</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Software Development	TBD/TBD	TBD TBD	0.000	0.492	Jan 2010	1.168	Jan 2011	0.000		1.168	Continuing	Continuing	Continuing
Subtotal			0.000	0.492		1.168		0.000		1.168			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.492	1.168	0.000	1.168			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development


R-1 ITEM NOMENCLATURE

PE 0207431F: Combat Air Intelligence System

PROJECT

675309: GEO Info & Serv Software

Geospatial Product Library (GPL) Schedule

MAJCOM	FY10	FY11	FY12	FY13	FY14	FY15
ACC						

 R&D SOFTWARE/HARDWARE (67-4826)

Geospatial Product Library (GPL) RDT&E Tasks:

Develop an Air Force open source (i.e. free software) web services capability to be hosted on the Enhanced GPL. Prototype to initially provide various Open Geospatial Consortium (OGC) services in a test-bed environment.

Continue development of the Enhanced GPL. The goal is to transform the GPL into a modular geospatial data server that is scalable in terms of capability (processing & storage) and application software (mission support).

Continue research in the latest automation techniques with a goal of improving or making more efficient the automated data flow to the fielded GPL systems.

UNCLASSIFIED

R-1 Line Item #153

Page 11 of 12

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207431F: <i>Combat Air Intelligence System</i>	PROJECT 675309: <i>GEO Info & Serv Software</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Software Development	1	2010	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207438F: <i>Theater Battle Management (TBM) C4I</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	18.845	19.033	15.170	0.000	15.170	13.707	13.987	14.200	14.392	Continuing	Continuing
674802: <i>Deliberate and Crisis Action Planning and Execution Segment (DCAPES)</i>	18.845	19.033	15.170	0.000	15.170	13.707	13.987	14.200	14.392	Continuing	Continuing

A. Mission Description and Budget Item Justification

The TBM C4I PE includes Deliberate and Crisis Action Planning and Execution Segments (DCAPES), which is being developed as the next-generation AF interface to the Joint Operational Planning and Execution System (JOPES). DCAPES is the Air Force's single system to present, plan, source, mobilize, deploy, account for, sustain, redeploy, and reconstitute forces for contingency and crisis operations. This system provides a real time, two way interchange of personnel, manpower, logistics, and operational data between the Air Force and the warfighting Combatant Commanders. It matches people, cargo, and airframes/weapon systems to the Combatant Commander's warfighting requirements. Acquisition of this system supports the Air Force's expeditionary force concept.

Development activities may also include Logistics Feasibility Analysis Capability (LOGFAC), Logistics Module/Manpower and Personnel Module-Base (LOGMOD/ MANPER B), War and Mobilization Planning (WMP), Enhanced Contingency Rotational AEF Scheduling Tool (ECAST), Web Enablement, and JOPES Modernization Migration. Activities also include studies and analysis to support both current program planning and execution and future program planning. This effort is an evolutionary follow-on to the Contingency Operations Mobility Planning and Execution System (COMPES). DCAPES replaced the operational tasking and priorities functionality of COMPES with modern relational databases, integrated-distributed database, and common and shared data consistent with the Joint vision for integrated Command and Control. DCAPES is intended to provide a command and control capability by exchanging data with a range of planning support systems to provide a more effective force projection capability for a wider range of operational scenarios and will fully support the force provider function of the AF Forces (AFFOR) commander. DCAPES along with numerous other war planning support legacy systems are transitioning into a net-centric Service Oriented Architecture (SOA) environment via a War Planning and Execution System (WPES) management construct.

DCAPES Increment 2a is post Milestone B and Increment 2b is pre-milestone B. DCAPES is in Budget Activity 7, Operational Systems Development.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207438F: <i>Theater Battle Management (TBM) C4I</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	19.384	19.067	0.000	0.000	0.000
Current President's Budget	18.845	19.033	15.170	0.000	15.170
Total Adjustments	-0.539	-0.034	15.170	0.000	15.170
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.539	-0.034	15.170	0.000	15.170

Change Summary Explanation

FY 2011: The FY 2010 President's Budget submittal did not reflect FY2011 through FY 2015 fundind. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0207438F: <i>Theater Battle Management (TBM) C4I</i>				PROJECT 674802: <i>Deliberate and Crisis Action Planning and Execution Segment (DCAPES)</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674802: <i>Deliberate and Crisis Action Planning and Execution Segment (DCAPES)</i>	18.845	19.033	15.170	0.000	15.170	13.707	13.987	14.200	14.392	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Deliberate and Crisis Action Planning and Execution Segments (DCAPES) is being developed as the next-generation AF interface to the Joint Operational Planning and Execution System (JOPES). Development activities may also include Logistics Feasibility Analysis Capability (LOGFAC), Logistics Module/Manpower and Personnel Module-Base (LOGMOD/MANPER B), War and Mobilization Planning (WMP), Enhanced Contingency Rotational AEF Scheduling Tool (ECAST), Web Enablement, and JOPES Modernization Migration. This effort is an evolutionary follow-on to the Contingency Operations Mobility Planning and Execution System (COMPES). DCAPES replaced the operational tasking and priorities functionality of COMPES with modern relational databases, integrated-distributed database, and common and shared data consistent with the Joint vision for integrated Command and Control. DCAPES is intended to provide a command and control capability by exchanging data with a range of planning support systems to provide a more effective force projection capability for a wider range of operational scenarios and will fully support the force provider function of the AF Forces (AFFOR) commander. DCAPES along with numerous other war planning support legacy systems are transitioning into a net-centric Service Oriented Architecture (SOA) environment via a War Planning and Execution System (WPES) management construct. DCAPES provides a real time, two way interchange of personnel, manpower, logistics, and operational data between the Air Force and the warfighting Combatant Commanders. It matches people, cargo, and airframes/weapon systems to the Combatant Commander's warfighting requirements.

This program is in Budget Activity 7, Operational System Development, because it upgrades and develops capabilities for current operational systems.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Loosely couple DCAPES/JOPES interfaces; continue Increment 2 requirements definition, protoyping, development, testing, interoperability, sustainment, and service oriented architectur...	18.845	19.033	15.170	0.000	15.170

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207438F: <i>Theater Battle Management (TBM) C4I</i>	PROJECT 674802: <i>Deliberate and Crisis Action Planning and Execution Segment (DCAPES)</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207438F: <i>Theater Battle Management (TBM) C4I, (O&M)</i>	3.960	3.763	3.461	0.000	3.461	7.342	6.201	6.414	6.677	0.000	0.000

D. Acquisition Strategy

The program uses an evolutionary acquisition strategy with incremental development with multiple software releases to accommodate refinement and prioritization of user requirements and improve adaptability with commercial technology.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207438F: <i>Theater Battle Management (TBM) C4I</i>	PROJECT 674802: <i>Deliberate and Crisis Action Planning and Execution Segment (DCAPES)</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DCAPES Increment 2a	SS/Various	CSC Falls Church, VA	16.498	16.332	Nov 2009	12.469	Dec 2010	0.000		12.469	Continuing	Continuing	Continuing
FFRDC	SS/Various	Mitre Bedford, MA	0.396	0.317	Oct 2009	0.317	Oct 2010	0.000		0.317	Continuing	Continuing	Continuing
Architecture Documentation Development	C/Various	BTAS Inc Beaver creek, OH	0.239	0.239	Apr 2010	0.239	Apr 2011	0.000		0.239	Continuing	Continuing	Continuing
Subtotal			17.133	16.888		13.025		0.000		13.025			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Contract Logistic Functional Support	C/Various	OASIS Systems, Inc Lexington, MA	0.116	0.116	Feb 2010	0.116	Feb 2011	0.000		0.116	Continuing	Continuing	Continuing
Contract Cost Analysis Support	C/Various	Tecolote Research, Inc Goleta, CA	0.205	0.205	Apr 2010	0.205	Apr 2011	0.000		0.205	Continuing	Continuing	Continuing
Contract Engineering Support	C/Various	Jacobs Technology, Inc	0.140	0.290	Jan 2010	0.290	Jan 2011	0.000		0.290	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207438F: <i>Theater Battle Management (TBM) C4I</i>	PROJECT 674802: <i>Deliberate and Crisis Action Planning and Execution Segment (DCAPES)</i>
--	---	---

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		Lincoln, MA											
Subtotal			0.461	0.611		0.611		0.000		0.611			

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
46 Test Sqdn	MIPR	Various Eglin AFB, FL	0.327	0.450	Feb 2010	0.450	Feb 2011	0.000		0.450	Continuing	Continuing	Continuing
605 Test Sqdn	MIPR	Various Hurlburt Field, FL	0.492	0.536	Nov 2009	0.536	Nov 2010	0.000		0.536	Continuing	Continuing	Continuing
DISA JITC	MIPR	Various Ft Hauchuca, AZ	0.000	0.115	Dec 2009	0.115	Dec 2010	0.000		0.115	Continuing	Continuing	Continuing
Contract Test Support	C/Variou	Various Various	0.017	0.017	Jan 2010	0.017	Nov 2010	0.000		0.017	Continuing	Continuing	Continuing
User Test Support	MIPR	Various Various	0.112	0.112	Oct 2009	0.112	Oct 2010	0.000		0.112	Continuing	Continuing	Continuing
Subtotal			0.948	1.230		1.230		0.000		1.230			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207438F: <i>Theater Battle Management (TBM) C4I</i>	PROJECT 674802: <i>Deliberate and Crisis Action Planning and Execution Segment (DCAPES)</i>
--	---	---

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Contract Program Management Office (PMO) Support	C/Various	OASIS Systems, Inc Lexington MA	0.283	0.284	Feb 2010	0.284	Feb 2011	0.000		0.284	Continuing	Continuing	Continuing
PMO Support - Travel	MIPR	Various Maxwell AFB- Gunter Annex, Al	0.020	0.020	Nov 2009	0.020	Nov 2010	0.000		0.020	Continuing	Continuing	Continuing
Subtotal			0.303	0.304		0.304		0.000		0.304			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	18.845	19.033	15.170	0.000	15.170			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

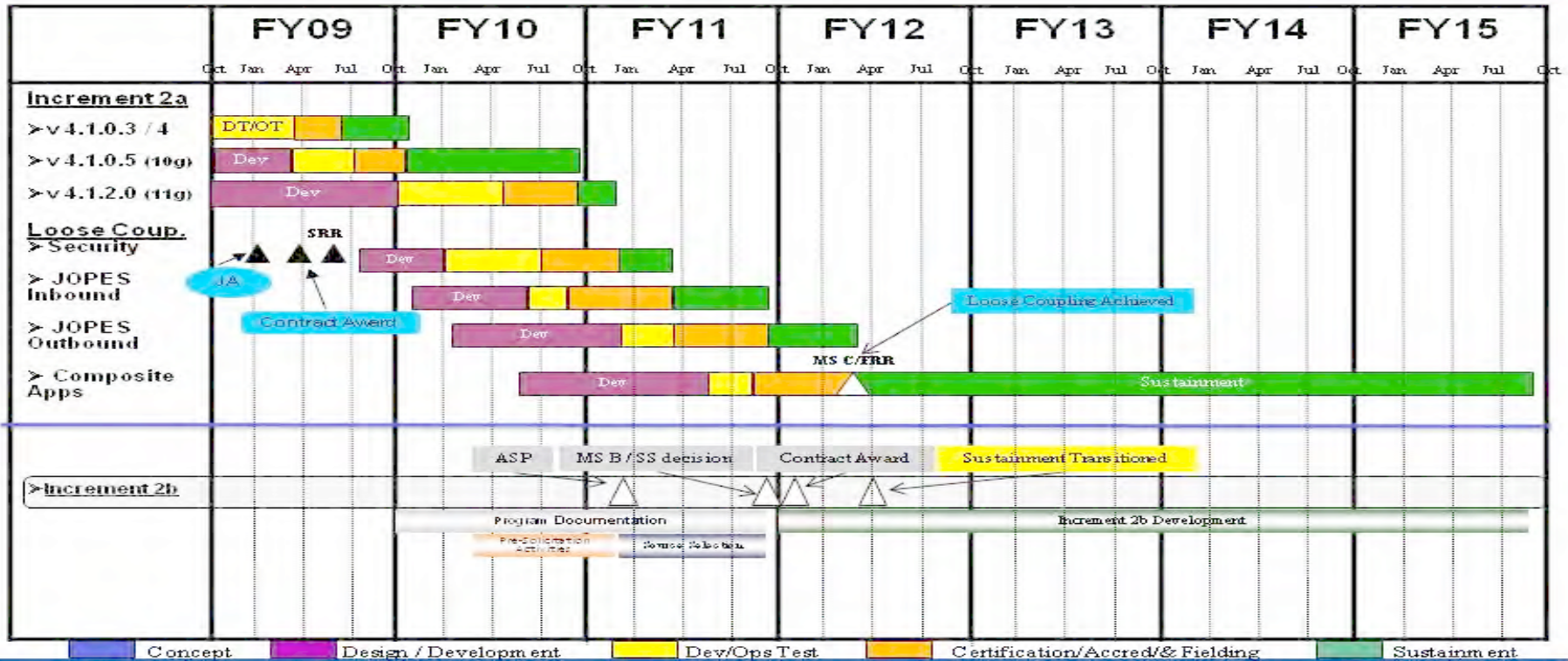
PE 0207438F: Theater Battle Management
(TBM) C4I

PROJECT

674802: Deliberate and Crisis Action Planning
and Execution Segment (DCAPES)



DCAPES Release Roadmap



Integrity - Service - Excellence

UNCLASSIFIED

R-1 Line Item #154

Page 9 of 10

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207438F: <i>Theater Battle Management (TBM) C4I</i>	PROJECT 674802: <i>Deliberate and Crisis Action Planning and Execution Segment (DCAPES)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Increment 2a 4.1.0.5 Development	1	2009	2	2009
Increment 2a 4.1.0.5 Test and Fielding	3	2009	1	2010
Increment 2a 4.1.2.0 Development	1	2009	2	2010
Increment 2a 4.1.2.0 Test and Fielding	1	2010	1	2011
Loose Coupling Release 1	3	2009	1	2011
Loose Coupling Release 2	1	2010	2	2011
Loose Coupling Release 3	2	2010	3	2011
Loose Coupling Release 4	3	2010	4	2011
Increment 2b Concept Development (Pre-Solicitation Activities & Source Selection)	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207445F: <i>FIGHTER TACTICAL DATA LINK</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	55.069	66.872	85.492	0.000	85.492	169.748	118.655	0.000	0.000	Continuing	Continuing
675043: <i>Fighter Tactical Data Link</i>	55.069	66.872	85.492	0.000	85.492	169.748	118.655	0.000	0.000	0.000	607.872

A. Mission Description and Budget Item Justification

Tactical Data Links (TDL) as a subset of the broader Airborne Network are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs provide a jam-resistant; secure digital data transfer network capability with a new and standardized waveforms and data formats allowing Line of Sight (LOS) and Beyond Line of Sight (BLOS) intra- and inter-flight communications. TDLs are used by all Service theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include, but are not limited to: Link 16, Link 11, Situational Awareness Data Link (SADL), Variable Message Format (VMF), Integrated Broadcast Service (IBS), Intra-Flight Data Link (IFDL), Tactical Targeting Network Technology (TTNT), and Multifunction Advanced Data Link (MADL). The Joint Requirements Oversight Council (JROC) recently approved the MADL waveform for all low observable platforms, to include the F-22, B-2, and F-35 and the MADL Overarching Integrated Product Team (OIPT) approved enterprise level management and support for MADL Development.

This effort provides critical capability and enhancements to the Airborne Network by creating common development, integration and interoperability among all Air Force fighter platforms to include but not limited to A-10, F-15A-E, F-16 Blocks 30/40/50, F-22A, and F-35 aircraft. Keeps all fighter platforms and datalinked weapons current, interoperable in the network, and enables Global Strike (GS), Global Persistent Attack (GPA), Offensive and Defensive Counterair (OCA and DCA) and Suppression of Enemy Air Defenses (SEAD) missions. Also expands LOS and BLOS data link capabilities. TDLs increase mission effectiveness, provide situational awareness, and provide positive identification of aircraft in the network, correlate on- and off-board sensor data sharing, target, and threat information, and provide the datalink to accomplish time critical targeting and other mission update functions. TDL efforts include incorporating changes and additions to TDL message standards (e.g. MIL-STD-6016D) and applicable Interface Change Proposals (ICPs); future development of MADL waveform specification, message standards (MIL-STD-6019) and modeling and simulation; MADL enterprise level planning and testing; assisting with AF and Joint interoperability certification testing; future development, integration, and verification of Operational Flight Program (OFF) upgrades due to TDL integration; support of data gathering processes; studying and incorporating data link technologies to ensure effectiveness and efficiency of the Global Strike and Global Persistent Attack CONOPS; and incorporating Interoperable Systems Management and Requirements Transformation (iSMART), a process which enables network centric interoperability assessments to be made more quickly and effectively.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

UNCLASSIFIED

R-1 Line Item #155

Page 1 of 16

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207445F: <i>FIGHTER TACTICAL DATA LINK</i>
--	--

Fighter Tactical Data Link program is in Budget Activity 7, Operational System Development, since it supports integration of tactical data links into operational systems.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	57.264	72.106	0.000	0.000	0.000
Current President's Budget	55.069	66.872	85.492	0.000	85.492
Total Adjustments	-2.195	-5.234	85.492	0.000	85.492
• Congressional General Reductions		-5.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-2.195	-0.234	85.492	0.000	85.492

Change Summary Explanation

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207445F: <i>FIGHTER TACTICAL DATA LINK</i>	PROJECT 675043: <i>Fighter Tactical Data Link</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675043: <i>Fighter Tactical Data Link</i>	55.069	66.872	85.492	0.000	85.492	169.748	118.655	0.000	0.000	0.000	607.872
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Tactical Data Links (TDL) as a subset of the broader Airborne Network are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs provide a jam-resistant; secure digital data transfer network capability with a new and standardized waveforms and data formats allowing Line of Sight (LOS) and Beyond Line of Sight (BLOS) intra- and inter-flight communications. TDLs are used by all Service theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include, but are not limited to: Link 16, Link 11, Situational Awareness Data Link (SADL), Variable Message Format (VMF), Integrated Broadcast Service (IBS), Intra-Flight Data Link (IFDL), Tactical Targeting Network Technology (TTNT), and Multifunction Advanced Data Link (MADL). The Joint Requirements Oversight Council (JROC) recently approved the MADL waveform for all low observable platforms, to include the F-22, B-2, and F-35 and the MADL Overarching Integrated Product Team (OIPT) approved enterprise level management and support for MADL Development.

This effort provides critical capability and enhancements to the Airborne Network by creating common development, integration and interoperability among all Air Force fighter platforms to include but not limited to A-10, F-15A-E, F-16 Blocks 30/40/50, F-22A, and F-35 aircraft. Keeps all fighter platforms and datalinked weapons current, interoperable in the network, and enables Global Strike (GS), Global Persistent Attack (GPA), Offensive and Defensive Counterair (OCA and DCA) and Suppression of Enemy Air Defenses (SEAD) missions. Also expands LOS and BLOS data link capabilities. TDLs increase mission effectiveness, provide situational awareness, and provide positive identification of aircraft in the network, correlate on- and off-board sensor data sharing, target, and threat information, and provide the datalink to accomplish time critical targeting and other mission update functions. TDL efforts include incorporating changes and additions to TDL message standards (e.g. MIL-STD-6016D) and applicable Interface Change Proposals (ICPs); future development of MADL waveform specification, message standards (MIL-STD-6019) and modeling and simulation; MADL enterprise level planning and testing; assisting with AF and Joint interoperability certification testing; future development, integration, and verification of Operational Flight Program (OFF) upgrades due to TDL integration; support of data gathering processes; studying and incorporating data link technologies to ensure effectiveness and efficiency of the Global Strike and Global Persistent Attack CONOPS; and incorporating Interoperable Systems Management and Requirements Transformation (iSMART), a process which enables network centric interoperability assessments to be made more quickly and effectively.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

UNCLASSIFIED

R-1 Line Item #155

Page 3 of 16

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207445F: <i>FIGHTER TACTICAL DATA LINK</i>	PROJECT 675043: <i>Fighter Tactical Data Link</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0207434F: <i>Link 16 Sup & Sus, (RDT&E)</i>	278.961	65.619	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207446F: <i>Bomber TDL, (RDT&E)</i>	21.603	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207448F: <i>C2ISR TDL, (RDT&E)</i>	1.671	1.659	1.584	0.000	1.584	1.608	1.633	1.658	1.682	0.000	0.000
• PE 0401839F: <i>Airlift TDL, (RDT&E)</i>	7.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0604281F: <i>TDN Enterprise, (RDT&E)</i>	0.000	87.444	102.941	0.000	102.941	67.790	40.507	43.037	34.930	0.000	0.000
• PE 0207434F (1): <i>Link 16 Sup & Sus, (RDT&E)</i>	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207445F: <i>Fighter TDL, (APAF)</i>	5.788	9.585	0.929	0.000	0.929	7.695	6.925	7.043	12.785	0.000	0.000
• PE 0207446F (2): <i>Bomber TDL, (APAF)</i>	0.000	0.000	0.000	0.000	0.000	0.339	0.337	0.368	0.972	0.000	0.000
• PE 0207448F (3): <i>C2ISR TDL, (APAF)</i>	0.000	0.000	0.000	0.000	0.000	0.959	0.912	0.927	1.729	0.000	0.000
• PE 0207434F (4): <i>Link 16 Sup & Sus, (O&M)</i>	131.597	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207445F (5): <i>Fighter TDL, (O&M)</i>	0.208	0.198	0.219	0.000	0.219	0.221	0.257	0.258	0.268	0.000	0.000
• PE 0401839F (6): <i>Airlift TDL, (O&M)</i>	1.574	8.175	7.857	0.000	7.857	3.629	1.634	1.666	2.944	0.000	0.000
• PE 0604281F (7): <i>TDN Enterprise, (O&M)</i>	0.000	33.727	31.282	0.000	31.282	19.165	17.303	20.026	21.534	0.000	0.000
• PE 0207434F (8): <i>Link 16 Sup & Sus, (OPAF)</i>	16.079	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207445F: <i>FIGHTER TACTICAL DATA LINK</i>	PROJECT 675043: <i>Fighter Tactical Data Link</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0604281F (9): <i>TDN Enterprise, (OPAF)</i>	0.000	32.343	21.742	0.000	21.742	9.270	0.337	0.311	0.240	0.000	0.000

D. Acquisition Strategy

653rd Electronics Systems Group (ELSG) provides for common development, integration and interoperability across all Air Force platforms and ensures that Tactical Data Links are procured and maintained as a joint, end-to-end, command and control system. Platform acquisition strategies vary by program, but the majority of development and integration is normally accomplished by the weapon system prime contractors

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207445F: <i>FIGHTER TACTICAL DATA LINK</i>	PROJECT 675043: <i>Fighter Tactical Data Link</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
F-22A Advanced Tactical Data Link Development and Integration	Various/ Various	Lockheed Martin Fort Worth, TX	33.574	49.768	Jan 2010	61.415	Oct 2010	0.000		61.415	Continuing	Continuing	Continuing
MADL Enterprise	Various/ Various	Lockheed Martin Fort Worth, TX:Various	10.061	12.458	Dec 2009	18.136	Oct 2010	0.000		18.136	0.000	40.655	0.000
F-15 Suite 6 Upgrades	Various/ Various	Boeing St. Louis, MO:AFRL	5.475	0.000		0.000		0.000		0.000	0.000	5.475	0.000
Development and Integration of A-10 SADL/EPLRS and IDM Capability	Various/ Various	642 AESS WPAFB, OH	1.459	0.000		0.000		0.000		0.000	0.000	1.459	0.000
Subtotal			50.569	62.226		79.551		0.000		79.551			

Remarks
*MIPR/AF Form 616 funding to Fighter platform program offices for scheduled contract awards and development efforts.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207445F: <i>FIGHTER TACTICAL DATA LINK</i>	PROJECT 675043: <i>Fighter Tactical Data Link</i>
--	--	---

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Common Fighter Data Link Support	Various/ Various	Various Various	4.500	4.646	Oct 2009	5.941	Oct 2010	0.000		5.941	Continuing	Continuing	Continuing
Subtotal			4.500	4.646		5.941		0.000		5.941			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Common Fighter Data Link Support	Various/ Various	Various Various	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

Included in Management

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	55.069	66.872		85.492		0.000		85.492			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207445F: <i>FIGHTER TACTICAL DATA LINK</i>	PROJECT 675043: <i>Fighter Tactical Data Link</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

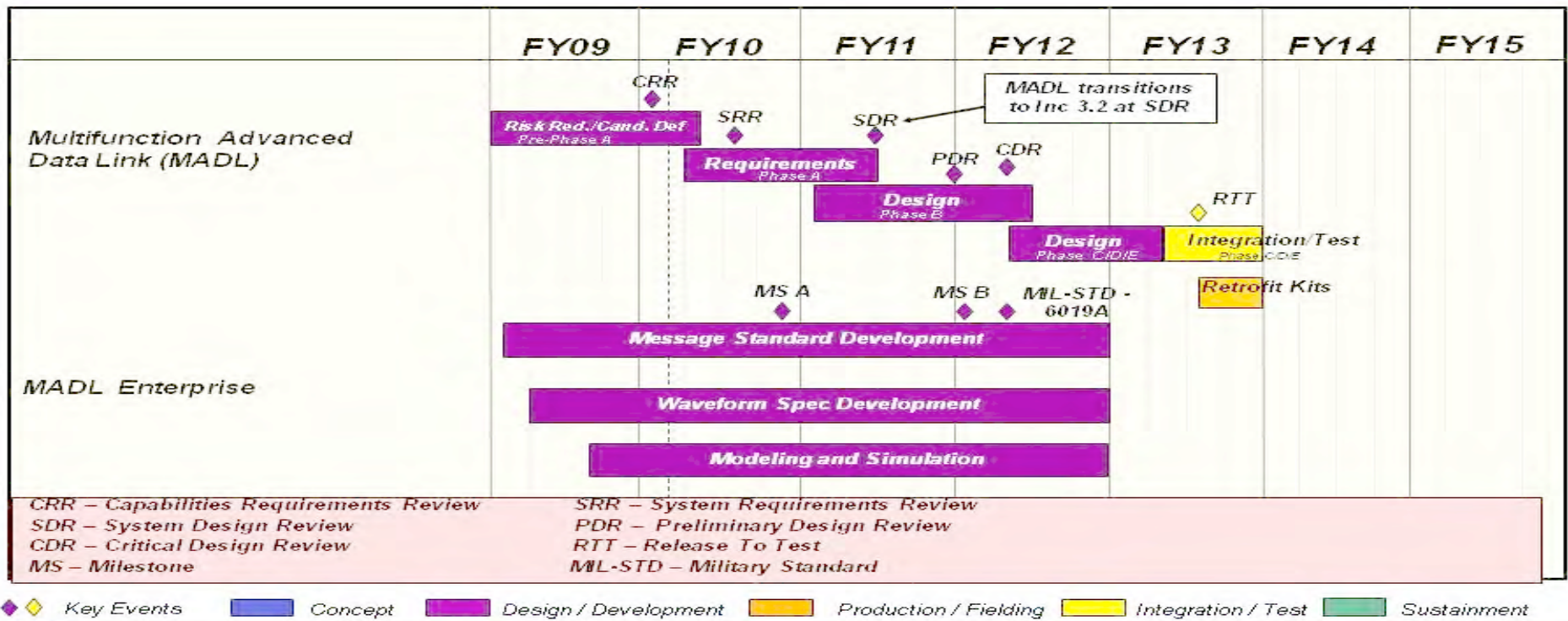
PE 0207445F: FIGHTER TACTICAL DATA LINK

PROJECT

675043: Fighter Tactical Data Link



F-22 MADL/MADL Enterprise Schedule as of 30 Nov 09



Integrity - Service - Excellence

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

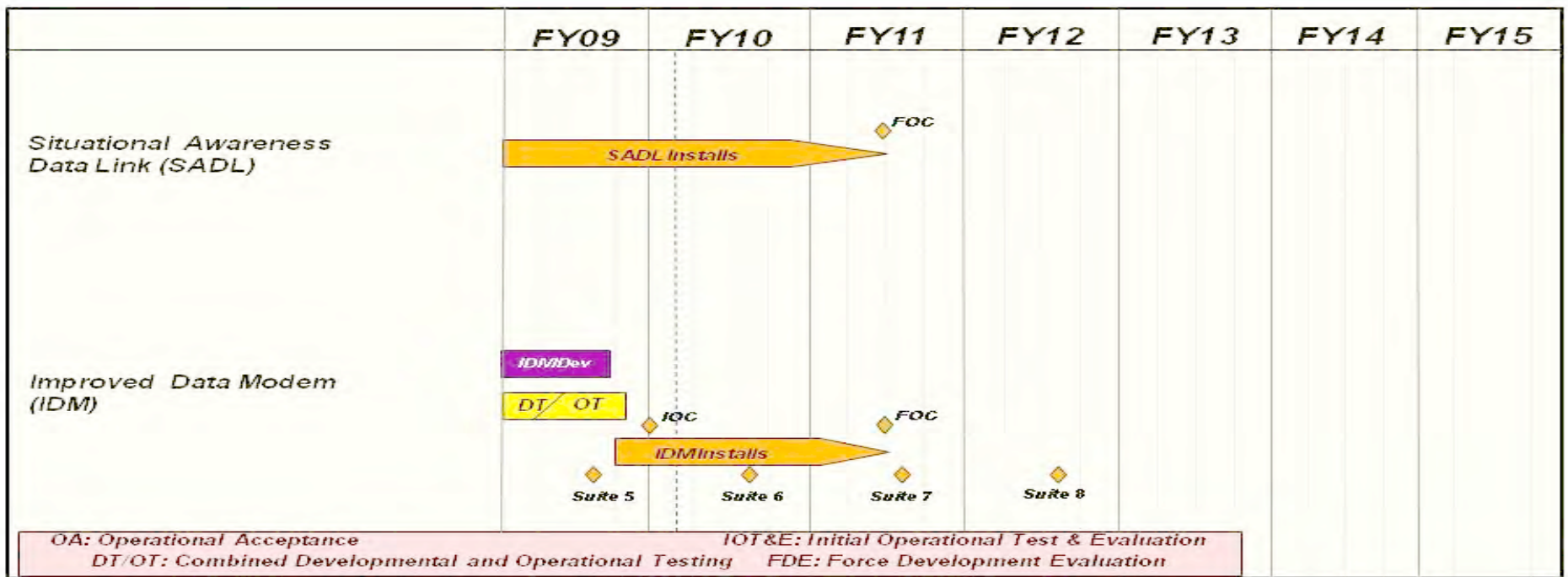
PE 0207445F: *FIGHTER TACTICAL DATA LINK*

PROJECT

675043: *Fighter Tactical Data Link*



A-10 Data Link Schedule as of 30 Nov 09



◆ Key Events
 Concept
 Design / Development
 Production / Fielding
 Integration / Test
 Sustainment

Integrity - Service - Excellence

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

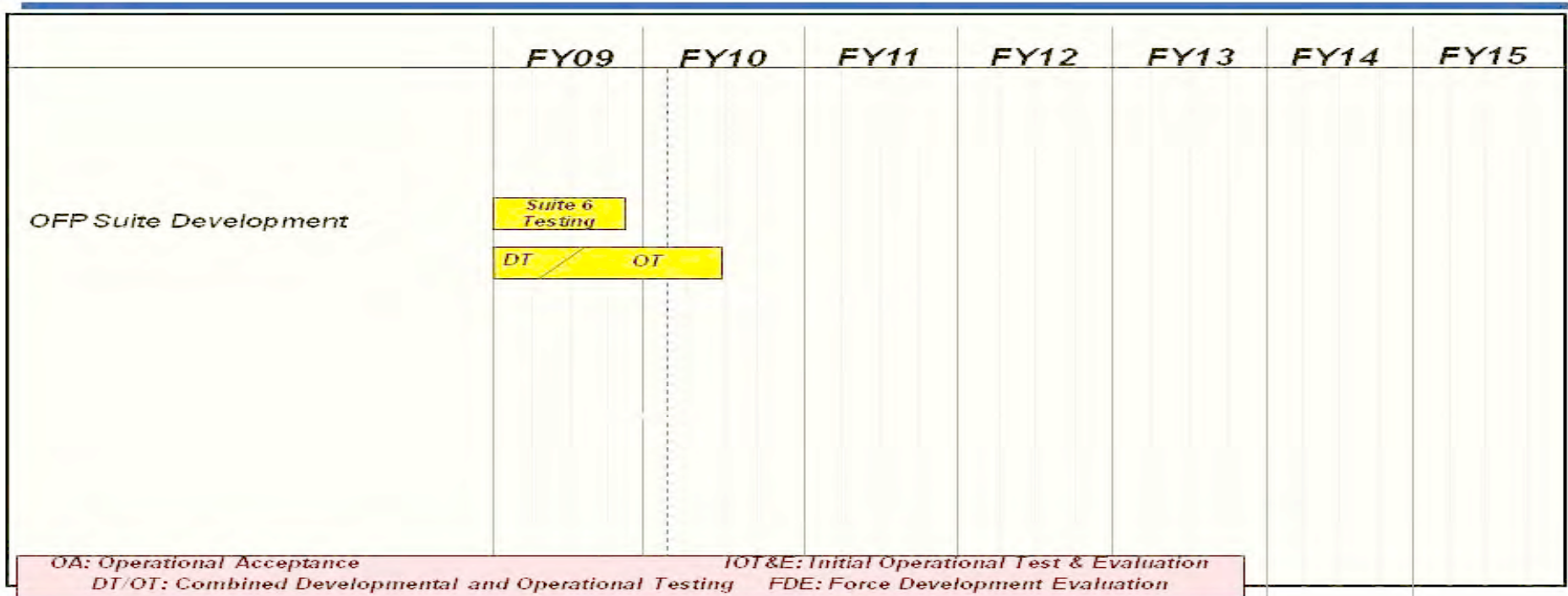
PE 0207445F: *FIGHTER TACTICAL DATA LINK*

PROJECT

675043: *Fighter Tactical Data Link*



F-15 Data Link Schedule as of 30 Nov 09



 Concept
 Design / Development
 Production / Fielding
 Integration / Test
 Sustainment

Integrity - Service - Excellence

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207445F: <i>FIGHTER TACTICAL DATA LINK</i>	PROJECT 675043: <i>Fighter Tactical Data Link</i>
--	--	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
F-22A MADL Risk Reduction and Candidate Definition Pre-Phase A	1	2009	2	2010
F-22A MADL Requirements Development Phase A	2	2010	2	2011
F-22A MADL Systems Requirements Review	3	2010	3	2010
F-22A MADL System Design	1	2011	4	2011
F-22A MADL System Design Review	2	2011	2	2011
F-22A MADL Preliminary Design Review	4	2011	4	2011
MADL Enterprise Message Standard Development	1	2009	4	2011
MADL Enterprise Waveform Spec Development	2	2009	4	2011
MADL Enterprise Modeling and Simulation	3	2009	4	2011
F-15 Suite 6 Integration and Testing	1	2009	2	2010
A-10 SADL Installs	1	2009	2	2011
A-10 IDM Development	1	2009	3	2009
A-10 IDM Developmental Testing/Operational Testing	1	2009	4	2009
A-10 IDM Installs	4	2009	2	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207446F: <i>Bomber Tactical Data Link</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	21.603	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
675041: <i>Bomber Tactical Data Link</i>	21.603	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Tactical Data Links (TDL), as a subset of the broader Airborne Network, are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs provide a jam-resistant, secure digital data transfer network capability with new and standardized waveforms and data formats allowing Line of Sight (LOS) and Beyond Line of Sight (BLOS) intra- and inter-flight communications. TDLs are used by all Service theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include, but are not limited to: Link 16, Link 11, Situational Awareness Data Link (SADL), Variable Message Format (VMF), Integrated Broadcast Service (IBS), Multifunction Advanced Data Link (MADL), and Tactical Targeting Network Technology (TTNT).

This effort provides critical capability and enhancements to the Airborne Network by creating common development, integration, and interoperability among all Air Force bomber platforms to include, but not limited to B-1B, B-2, and B-52 aircraft. Keeps all bomber platforms and data linked weapons current, interoperable in the network, and compatible with the USAF Global Strike (GS) operations concept beyond 2020. Also expands LOS and BLOS data link capabilities. TDLs increase mission effectiveness, provide situational awareness, provide positive identification of aircraft in the network, correlate on- and off-board sensor data sharing, target, and threat information, and provide the data link to accomplish time critical targeting and other mission update functions. The BLOS data link capability works with Link 16 to extend the range of local Link 16 networks to other areas/theaters. TDL efforts include incorporating changes and additions to the TDL message standard (MIL-STD-6016D) and applicable Interface Change Proposals (ICPs); assisting with AF and Joint interoperability certification testing; future development, integration, and verification of Operational Flight Program (OFF) upgrades due to TDL integration; support of data gathering processes; studying and incorporating data link technologies to ensure effectiveness and efficiency of the Global Strike CONOPS and Global Persistent Attack CONOPS; and incorporating Interoperable Systems Management and Requirements Transformation (iSMART), a process which enables network centric interoperability assessments to be made more quickly and effectively.

Bomber platforms have both current work and future plans for Tactical Data Links. The B-1 Fully Integrated Data Link (FIDL) program is ongoing. FIDL is being developed for B-1. MADL will be developed for and integrated on B-2 to enable Global Strike (GS), Global Persistent Attack (GPA) and Suppression of Enemy Air Defenses (SEAD) missions.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207446F: <i>Bomber Tactical Data Link</i>
--	---

Activities also include studies and analysis to support both current program planning and execution and future program planning.

Bomber Tactical Data Link program is in Budget Activity 7, Operational System Development, since it supports integration of tactical data links into operational systems.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	11.603	0.000	0.000	0.000	0.000
Current President's Budget	21.603	0.000	0.000	0.000	0.000
Total Adjustments	10.000	0.000	0.000	0.000	0.000
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	10.000	0.000	0.000	0.000	0.000

Change Summary Explanation

In FY09, funding was added to complete B-1 Fully Integrated Data Links (FIDL) System Development and Demonstration (SDD).

UNCLASSIFIED

R-1 Line Item #156

Page 2 of 10

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207446F: <i>Bomber Tactical Data Link</i>	PROJECT 675041: <i>Bomber Tactical Data Link</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675041: <i>Bomber Tactical Data Link</i>	21.603	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Tactical Data Links (TDL), as a subset of the broader Airborne Network, are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs provide a jam-resistant, secure digital data transfer network capability with new and standardized waveforms and data formats allowing Line of Sight (LOS) and Beyond Line of Sight (BLOS) intra- and inter-flight communications. TDLs are used by all Service theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include, but are not limited to: Link 16, Link 11, Situational Awareness Data Link (SADL), Variable Message Format (VMF), Integrated Broadcast Service (IBS), Multifunction Advanced Data Link (MADL), and Tactical Targeting Network Technology (TTNT).

This effort provides critical capability and enhancements to the Airborne Network by creating common development, integration, and interoperability among all Air Force bomber platforms to include, but not limited to B-1B, B-2, and B-52 aircraft. Keeps all bomber platforms and data linked weapons current, interoperable in the network, and compatible with the USAF Global Strike (GS) operations concept beyond 2020. Also expands LOS and BLOS data link capabilities. TDLs increase mission effectiveness, provide situational awareness, provide positive identification of aircraft in the network, correlate on- and off-board sensor data sharing, target, and threat information, and provide the data link to accomplish time critical targeting and other mission update functions. The BLOS data link capability works with Link 16 to extend the range of local Link 16 networks to other areas/theaters. TDL efforts include incorporating changes and additions to the TDL message standard (MIL-STD-6016D) and applicable Interface Change Proposals (ICPs); assisting with AF and Joint interoperability certification testing; future development, integration, and verification of Operational Flight Program (OFF) upgrades due to TDL integration; support of data gathering processes; studying and incorporating data link technologies to ensure effectiveness and efficiency of the Global Strike CONOPS and Global Persistent Attack CONOPS; and incorporating Interoperable Systems Management and Requirements Transformation (iSMART), a process which enables network centric interoperability assessments to be made more quickly and effectively.

Bomber platforms have both current work and future plans for Tactical Data Links. The B-1 Fully Integrated Data Link (FIDL) program is ongoing. FIDL is being developed for B-1. MADL will be developed for and integrated on B-2 to enable Global Strike (GS), Global Persistent Attack (GPA) and Suppression of Enemy Air Defenses (SEAD) missions.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207446F: <i>Bomber Tactical Data Link</i>	PROJECT 675041: <i>Bomber Tactical Data Link</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2010 Plans:</i> In FY 2010: N/A					
<i>FY 2011 Base Plans:</i> In FY 2011: N/A					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	21.603	0.000	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0207434F-A: <i>Link 16 Sup & Sus, (RDT&E)</i>	278.961	65.619	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207445F-A: <i>Fighter TDL, (RDT&E)</i>	55.069	66.872	85.492	0.000	85.492	169.748	118.655	0.000	0.000	0.000	0.000
• PE 0207448F-A: <i>C2ISR TDL, (RDT&E)</i>	1.671	1.659	1.584	0.000	1.584	1.608	1.633	1.658	1.682	0.000	0.000
• PE 0401839F-A: <i>Airlift TDL, (RDT&E)</i>	7.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0604281F-A: <i>TDN Enterprise, (RDT&E)</i>	0.000	87.444	102.941	0.000	102.941	67.790	40.507	43.037	34.930	0.000	0.000
• PE 0207434F-B: <i>Link 16 Sup & Sus, (APAF)</i>	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207445F-B: <i>Fighter TDL, (APAF)</i>	5.788	9.585	0.929	0.000	0.929	7.695	6.925	7.043	12.785	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207446F: <i>Bomber Tactical Data Link</i>	PROJECT 675041: <i>Bomber Tactical Data Link</i>
--	---	--

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207446F: <i>Bomber TDL, (APAF)</i>	0.000	0.000	0.000	0.000	0.000	0.339	0.337	0.368	0.972	0.000	0.000
• PE 0207448F-B: <i>C2ISR TDL, (APAF)</i>	0.000	0.000	0.000	0.000	0.000	0.959	0.912	0.927	1.729	0.000	0.000
• PE 0207434F-C: <i>Link 16 Sup & Sus, (O&M)</i>	131.597	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207445F-C: <i>Fighter TDL, (O&M)</i>	0.208	0.198	0.219	0.000	0.219	0.221	0.257	0.258	0.268	0.000	0.000
• PE 0401839F-B: <i>Airlift TDL, (O&M)</i>	1.574	8.175	7.857	0.000	7.857	3.629	1.634	1.666	2.944	0.000	0.000
• PE 0604281F-B: <i>TDN Enterprise, (O&M)</i>	0.000	33.727	31.382	0.000	31.382	19.165	17.303	20.026	21.534	0.000	0.000
• PE 0207434F-D: <i>Link 16 Sup & Sus, (OPAF)</i>	16.079	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0604281F-C: <i>TDN Enterprise, (OPAF)</i>	0.000	32.343	21.742	0.000	21.742	9.270	0.337	0.311	0.240	0.000	0.000

D. Acquisition Strategy

The 653rd Electronic Systems Group (ELSG) provides for common development, integration and interoperability across the entire Airborne Network and ensures that data links are procured and maintained as a joint, end-to-end, command and control system. Platform acquisition strategies vary by program, but the majority of development and integration is normally accomplished by the weapon system prime contractor.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

R-1 Line Item #156

Page 6 of 10

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207446F: <i>Bomber Tactical Data Link</i>	PROJECT 675041: <i>Bomber Tactical Data Link</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
B-1 FIDL System Development and Demonstration (SDD) *	SS/CPIF	Boeing Long Beach, CA	50.556	0.000		0.000		0.000		0.000	Continuing	Continuing	194.234
Bomber TDL analysis, systems engineering & technical support/MITRE	Various/ Various	Various Various	1.933	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			52.489	0.000		0.000		0.000		0.000			

Remarks

*MIPR funding to Bomber platform program offices for scheduled contract awards and development efforts.

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office and Contractor Support	C/FFP	Various Various	2.051	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			2.051	0.000		0.000		0.000		0.000			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207446F: <i>Bomber Tactical Data Link</i>	PROJECT 675041: <i>Bomber Tactical Data Link</i>
--	---	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
B-1 Lab Development	C/CPFF	Tinker AFB OK	2.308	0.000		0.000		0.000		0.000	0.000	2.308	0.000
B-1 FIDL Testing	PO	AF Flight Test Center Edwards AFB, CA	1.630	0.000		0.000		0.000		0.000	0.000	1.630	0.000
Subtotal			3.938	0.000		0.000		0.000		0.000	0.000	3.938	0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	58.478	0.000	0.000	0.000	0.000			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207446F: Bomber Tactical Data Link

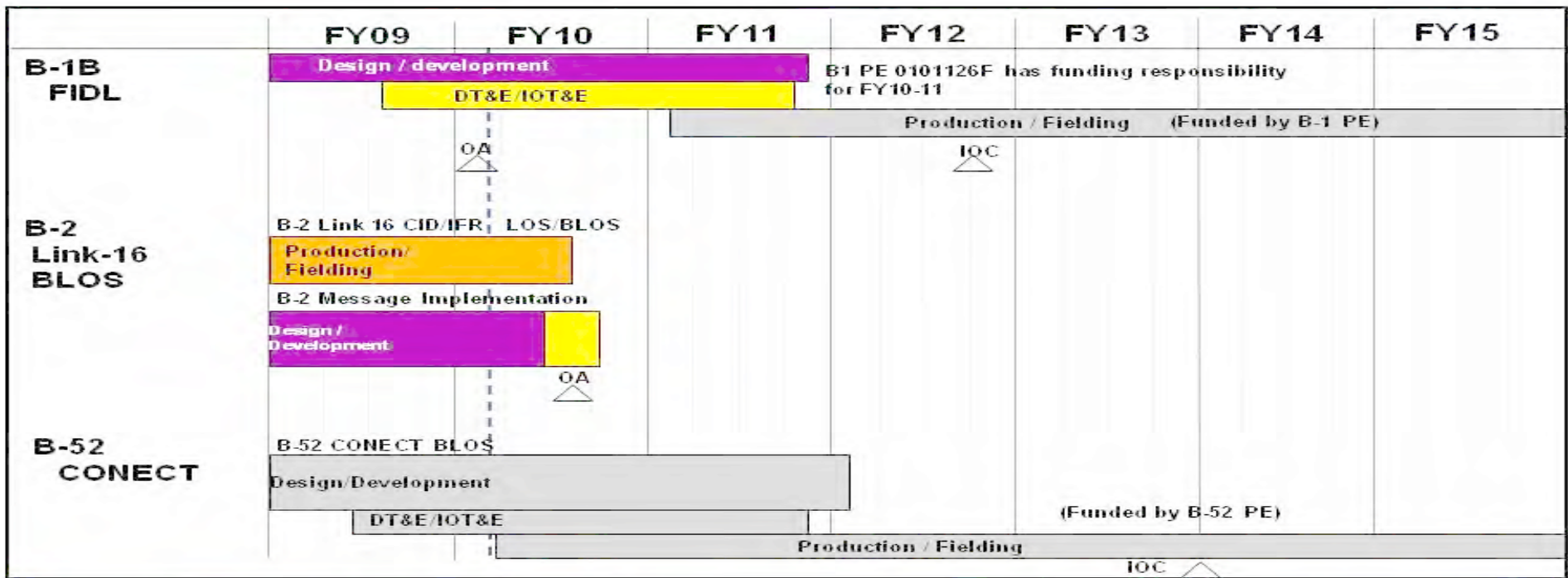
PROJECT

675041: Bomber Tactical Data Link



Bomber Tactical Data Link Schedule

(as of 08 Dec 09)



 Concept
 Design / Development
 Production / Fielding
 Integration / Test
 Sustainment
 Externally Funded

Integrity - Service - Excellence

UNCLASSIFIED

R-1 Line Item #156

Page 9 of 10

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207446F: <i>Bomber Tactical Data Link</i>	PROJECT 675041: <i>Bomber Tactical Data Link</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
B-1 Fully Integrated Data Link System Design & Development (SDD)*	1	2009	4	2011
B-1 Fully Integrated Data Link Flight Test (DT&E/IOTE)	3	2009	4	2011
B-1 Fully Integrated Data Link Production & Fielding	1	2011	4	2011
B-2 Message Implementation	1	2009	3	2010
B-2 Message Implementation Operational Assessment	3	2010	3	2010
B-52 Integrated Data Link SDD**	1	2009	4	2011
B-52 Integrated Data Link (DT&E/IOT&E)**	2	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207448F: <i>C2ISR Tactical Data Link</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	1.671	1.659	1.584	0.000	1.584	1.608	1.633	1.658	1.682	Continuing	Continuing
675045: <i>C2ISR Tactical Data Link</i>	1.671	1.659	1.584	0.000	1.584	1.608	1.633	1.658	1.682	Continuing	Continuing

A. Mission Description and Budget Item Justification

Tactical Data Links (TDL), as a subset of the broader Airborne Network are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs provide a jam-resistant; secure digital data transfer network capability with new and standardized waveforms and data formats allowing Line of Sight (LOS) and Beyond Line of Sight (BLOS) intra- and inter-flight communications. TDLs are used by all Service theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include, but are not limited to: Link 16, Link 11, Situational Awareness Data Link (SADL), Variable Message Format (VMF), Integrated Broadcast Service (IBS), Intra-Flight Data Link (IFDL), Multifunction Advanced Data Link (MADL), and Tactical Targeting Network Technology (TTNT).

This effort provides critical capability and enhancements to the Airborne Network by creating common development, integration and interoperability among ground and C2 platforms including, but not limited to Airborne Warning and Control System (AWACS), Joint Surveillance Target Attack Radar System (JSTARS), the Air and Space Operations Center (AOC), Global Hawk, Predator, Reaper, Rivet Joint, Combat Sent, and Cobra Ball. TDLs keep all C2ISR Platforms and data linked weapons current/interoperable in the Airborne Network to enable Global Strike (GS), Global Persistent Attack (GPA), Offensive and Defensive Counterair (OCA and DCA) and Suppression of Enemy Air Defenses (SEAD) missions. TDLs increase mission effectiveness, provide situational awareness, and provide positive identification of aircraft in the network, correlate on- and off-board sensor data sharing, target, and threat information, and provide the datalink to accomplish time critical targeting and other mission update functions. TDL efforts include incorporating changes and additions to the Link-16 message standard (MIL-STD-6016D) and applicable Interface Change Proposals (ICPs), assisting with AF and Joint interoperability certification testing with the Air Force Global Cyberspace Integration Center (GCIC) and Joint Interoperability Test Center (JITC); future development, integration, and verification of Operational Flight Program (OFF) upgrades due to TDL integration; support of data gathering processes; studying and incorporating data link technologies to ensure effectiveness and efficiency of the Global Strike and Global Persistent Attack CONOPS; and incorporating Interoperable Systems Management and Requirements Transformation (iSMART), a process which enables network centric interoperability assessments to be made more quickly and effectively.

Activities also include studies and analysis to support both current program planning and execution and future program planning to include the period of dual E-3 AWACS mission configuration ending in FY15.

UNCLASSIFIED

R-1 Line Item #157

Page 1 of 10

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207448F: <i>C2ISR Tactical Data Link</i>
--	--

C2ISR Tactical Data Link program is in Budget Activity 7, Operational System Development, since it supports integration of tactical data links into operational systems.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	1.719	1.659	0.000	0.000	0.000
Current President's Budget	1.671	1.659	1.584	0.000	1.584
Total Adjustments	-0.048	0.000	1.584	0.000	1.584
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.048	0.000	1.584	0.000	1.584

Change Summary Explanation

Shift of focus to AWACS Block 40/45 development while Block 30/35 approaches phase out.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207448F: <i>C2ISR Tactical Data Link</i>	PROJECT 675045: <i>C2ISR Tactical Data Link</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675045: <i>C2ISR Tactical Data Link</i>	1.671	1.659	1.584	0.000	1.584	1.608	1.633	1.658	1.682	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Tactical Data Links (TDL), as a subset of the broader Airborne Network are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs provide a jam-resistant; secure digital data transfer network capability with new and standardized waveforms and data formats allowing Line of Sight (LOS) and Beyond Line of Sight (BLOS) intra- and inter-flight communications. TDLs are used by all Service theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include, but are not limited to: Link 16, Link 11, Situational Awareness Data Link (SADL), Variable Message Format (VMF), Integrated Broadcast Service (IBS), Intra-Flight Data Link (IFDL), Multifunction Advanced Data Link (MADL), and Tactical Targeting Network Technology (TTNT).

This effort provides critical capability and enhancements to the Airborne Network by creating common development, integration and interoperability among ground and C2 platforms including, but not limited to Airborne Warning and Control System (AWACS), Joint Surveillance Target Attack Radar System (JSTARS), the Air and Space Operations Center (AOC), Global Hawk, Predator, Reaper, Rivet Joint, Combat Sent, and Cobra Ball. TDLs keep all C2ISR Platforms and data linked weapons current/interoperable in the Airborne Network to enable Global Strike (GS), Global Persistent Attack (GPA), Offensive and Defensive Counterair (OCA and DCA) and Suppression of Enemy Air Defenses (SEAD) missions. TDLs increase mission effectiveness, provide situational awareness, and provide positive identification of aircraft in the network, correlate on- and off-board sensor data sharing, target, and threat information, and provide the datalink to accomplish time critical targeting and other mission update functions. TDL efforts include incorporating changes and additions to the Link-16 message standard (MIL-STD-6016D) and applicable Interface Change Proposals (ICPs), assisting with AF and Joint interoperability certification testing with the Air Force Global Cyberspace Integration Center (GCIC) and Joint Interoperability Test Center (JITC); future development, integration, and verification of Operational Flight Program (OFF) upgrades due to TDL integration; support of data gathering processes; studying and incorporating data link technologies to ensure effectiveness and efficiency of the Global Strike and Global Persistent Attack CONOPS; and incorporating Interoperable Systems Management and Requirements Transformation (iSMART), a process which enables network centric interoperability assessments to be made more quickly and effectively.

Activities also include studies and analysis to support both current program planning and execution and future program planning to include the period of dual E-3 AWACS mission configuration ending in FY15.

UNCLASSIFIED

R-1 Line Item #157

Page 3 of 10

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207448F: <i>C2ISR Tactical Data Link</i>		PROJECT 675045: <i>C2ISR Tactical Data Link</i>		
C2ISR Tactical Data Link program is in Budget Activity 7, Operational System Development, since it supports integration of tactical data links into operational systems.						
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: C2ISR Data Link Integration and AWACS Block 30/35 Software Enhancements <i>FY 2009 Accomplishments:</i> In FY 2009: Improved AWACS Link 16 interoperability and compatibility by incorporating key changes to communications software baseline. Interface Change Proposal (ICP) TJ04-018Ch6 incorporated Height Above Ellipsoid (HAE) elevation reporting via Link 16 avoiding Mean Sea Level (MSL) conversion errors that could be +/- 60 feet. HAE elevation data is required by the Joint Direct Attack Munitions (JDAM) class of munitions. ICP TM05-040Ch5 added a new definition of Area Major Axis and Area Minor Axis in J3.5C3 Words, and Land Square/Circle Switch and Latitude/Longitude Additions will enable the US AWACS to process extended precision messages for Precision Guided Munitions (PGMs). The new values can support accuracies to 8 ft or less. <i>FY 2010 Plans:</i> In FY 2010: Global Area Reference System (GARS) Study: Provides an assessment to determine sufficiency of current computing resources necessary to incorporate the GARS Interface Change Proposal (GARS ICP TJ06-049Ch2). Deliverable includes a white paper discussing technical solutions, scope of effort and an assessment of technical, schedule, cost, and programmatic risks. <i>FY 2011 Base Plans:</i> In FY 2011: N/A <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.		1.671	0.200	0.000	0.000	0.000
MAJOR THRUST: C2ISR Data Link Integration and AWACS Block 40/45 Software Enhancements <i>FY 2009 Accomplishments:</i> In FY 2009: N/A		0.000	1.459	1.584	0.000	1.584

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207448F: <i>C2ISR Tactical Data Link</i>	PROJECT 675045: <i>C2ISR Tactical Data Link</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Improve AWACS Block 40/45 Link 16 interoperability and compatibility by incorporating key changes to communications software baseline implemented in Block 30/35 after the Block 40/45 Baseline was established. The first Block 40/45 ICP to be implemented will be TJ04-018Ch6, Height Above Ellipsoid (HAE) Adjustment Term, eliminating MSL to HAE conversion errors that could be +/- 60 feet. HAE elevation data is required by the JDAM class of munitions.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Improve AWACS Block 40/45 Link 16 interoperability and compatibility by incorporating key changes to communications software baseline implemented in Block 30/35 after the Block 40/45 Baseline was established. Block 40/45 will implement ICP TM99-071Ch8, Generic Unit Precise Participant Location Identification (PPLI) Message, allowing friendly non-Link 16 units to forward their self-reported position and ID onto Link 16 as PPLI data, significantly enhancing situational awareness.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	1.671	1.659	1.584	0.000	1.584

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0207434F: <i>Link 16 Sup & Sus, (RDT&E)</i>	278.961	65.619	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207445F: <i>Fighter TDL, (RDT&E)</i>	55.069	66.872	85.492	0.000	85.492	169.748	118.655	0.000	0.000	0.000	0.000
• PE 0207446F: <i>Bomber TDL, (RDT&E)</i>	21.603	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207448F: <i>C2ISR Tactical Data Link</i>	PROJECT 675045: <i>C2ISR Tactical Data Link</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0401839F: <i>Airlift TDL, (RDT&E)</i>	7.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0604281F: <i>TDN Enterprise, (RDT&E)</i>	0.000	87.444	102.941	0.000	102.941	67.790	40.507	43.037	34.930	0.000	0.000
• PE 0207434F (1): <i>Link 16 Sup & Sus, (APAF)</i>	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207445F (2): <i>Fighter TDL, (APAF)</i>	5.788	9.585	0.929	0.000	0.929	7.695	6.925	7.043	12.785	0.000	0.000
• PE 0207446F (3): <i>Bomber TDL, (APAF)</i>	0.000	0.000	0.000	0.000	0.000	0.339	0.337	0.368	0.972	0.000	0.000
• PE 0207448F: <i>C2ISR TDL, (APAF)</i>	0.000	0.000	0.000	0.000	0.000	0.959	0.912	0.927	1.729	0.000	0.000
• PE 0207434F (4): <i>Link 16 Sup & Sus, (O&M)</i>	131.597	0.309	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207445F (5): <i>Fighter TDL, (O&M)</i>	0.208	0.198	0.219	0.000	0.219	0.221	0.257	0.258	0.268	0.000	0.000
• PE 0401839F (6): <i>Airlift 3400, (O&M)</i>	1.574	8.175	7.857	0.000	7.857	3.629	1.634	1.666	2.944	0.000	0.000
• PE 0604281F (7): <i>TDN Enterprise, (O&M)</i>	0.000	33.727	31.382	0.000	31.382	19.165	17.303	20.026	21.534	0.000	0.000
• PE 0207434F (8): <i>Link 16 Sup & Sus, (OPAF)</i>	16.079	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0604281F (9): <i>TDN Enterprise, (OPAF)</i>	0.000	32.343	21.742	0.000	21.742	9.270	0.337	0.311	0.240	0.000	0.000

D. Acquisition Strategy

The 653rd Electronics Systems Group (ELSG) provides for common development, integration and interoperability across the entire Airborne Network and ensures that TDLs are procured and maintained as a joint, end-to-end, command and control system. Platform acquisition strategies vary by program, but the majority of development and integration is normally accomplished by the weapon system prime contractor.

UNCLASSIFIED

R-1 Line Item #157

Page 6 of 10

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207448F: <i>C2ISR Tactical Data Link</i>	PROJECT 675045: <i>C2ISR Tactical Data Link</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207448F: <i>C2ISR Tactical Data Link</i>	PROJECT 675045: <i>C2ISR Tactical Data Link</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AWACS	SS/Various	Boeing Seattle WA	1.354	1.271	Dec 2009	1.214	Nov 2010	0.000		1.214	Continuing	Continuing	Continuing
Subtotal			1.354	1.271		1.214		0.000		1.214			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office and Contractor Support	Various	Various Various	0.317	0.388	Jan 2010	0.370	Feb 2011	0.000		0.370	Continuing	Continuing	Continuing
Subtotal			0.317	0.388		0.370		0.000		0.370			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	1.671	1.659		1.584		0.000		1.584			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

R-1 Line Item #157

Page 8 of 10

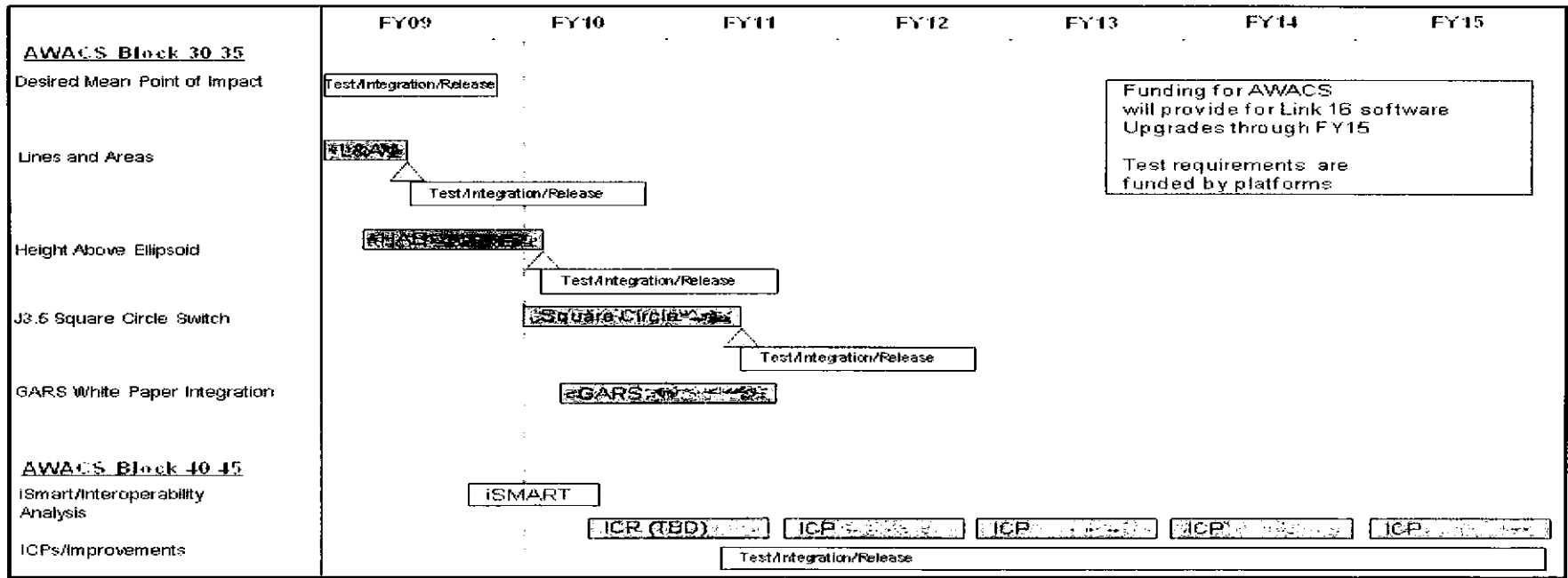
UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207448F: C2ISR Tactical Data Link	PROJECT 675045: C2ISR Tactical Data Link



C2ISR Tactical Data Link

(as of 08 Dec 09)



Funding for AWACS will provide for Link 16 software Upgrades through FY15
Test requirements are funded by platforms

- Concept activities
- Production/fielding
- Design / development
- Pre-Production
- Integration / test
- Key events

Integrity - Service - Excellence

UNCLASSIFIED

R-1 Line Item #157

Page 9 of 10

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207448F: <i>C2ISR Tactical Data Link</i>	PROJECT 675045: <i>C2ISR Tactical Data Link</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
AWACS 30/35 Desired Mean Point of Impact Test/Integration/Release	1	2009	4	2009
AWACS 30/35 Lines & Areas Design/Development	1	2009	2	2009
AWACS 30/35 Lines & Areas Test/Integration/Release	3	2009	4	2010
AWACS 30/35 Height Above Ellipsoid Design/Development	2	2009	2	2010
AWACS 30/35 Height Above Ellipsoid Test/Integration/Release	2	2010	3	2011
AWACS 30/35 J3.5 Square Circle Switch Design/Development	1	2010	2	2011
AWACS 30/35 J3.5 Square Circle Switch Test/Integration/Release	2	2011	4	2011
AWACS 30/35 Global Area Reference System White Paper Integration	2	2010	3	2011
AWACS Block 40/45 iSMART Database Updates	4	2009	3	2010
AWACS Block 40/45 ICPs/Improvements Design/Development	3	2010	4	2011
AWACS Block 40/45 ICPs/Improvements Test/Integration/Release	2	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	30.832	30.293	24.229	0.000	24.229	21.924	22.214	21.295	21.171	Continuing	Continuing
675078: <i>Horizontal Integration</i>	14.669	15.468	10.863	0.000	10.863	11.024	11.333	11.506	11.676	Continuing	Continuing
675140: <i>Joint Expeditionary Force Experiments</i>	16.163	14.825	13.366	0.000	13.366	10.900	10.881	9.789	9.495	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Command and Control Constellation (C2C) is the primary Air Force program for defining, developing, and assessing integrated effects of global, theater and tactical level Air Force air, space and cyber C2 capabilities in support of the joint warfighter. The Air Force faces a complex future where conflict will range across a broad spectrum of operations and lethality. The Air Force requires capabilities with the maximum possible flexibility to deal with the widest possible range of conflict. The black and white distinction between irregular war and conventional war is an outdated model. Near-peers will use irregular or asymmetric tactics that target traditional strengths. Irregular warfare brings non-conventional adversaries that requires non-conventional approaches for defeating them. The Air Force is working to establish a C2 Framework to be used as a unifying vision of command and control for each of the services core functions and core function master plans. C2 will support the C2 Framework by providing a venue for prototyping, experimentation and innovation to develop non-conventional solutions and enable an improved "sense-to-kill" cycle time. C2C innovations and experimentation provides strategic, operational, and tactical direction for Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) solutions to facilitate the integration of Global Effects that support Command and Control, Intelligence, Surveillance and Reconnaissance (C2ISR) planning and execution for air, space, and cyberspace. In-depth development and analyses of C2C operational, systems, and technical architectures are geared towards identifying capability gaps, identifying required "TO BE" information services, and evaluating Command and Control, Intelligence, Surveillance and Reconnaissance (C2ISR) program planned improvements. Through prototyping and experimentation, C2C will integrate rapidly developing technologies to promote common standards, data sharing and information services across Air Force and joint warfighting applications to support a network-centric, joint enterprise solution to address these findings. C2C innovations will develop consistent with the Joint Airborne Layer Network (JALN) Initial Capabilities Document.

Project 5078, Horizontal Integration (HI) conducts DOTMLPF analysis and assessments to guide cross-cutting net-centric, C2ISR sub-enterprise and cyberspace investment decisions that integrate USAF capabilities into joint and coalition operations. HI identifies, prioritizes, and develops horizontally integrated solution recommendations to ensure the latest technologies and information services are integrated into a cross cutting net centric C2 system that enables integrated Global Effects in all warfighter domains. The Fiscal Year 2010 strategy will be validated by HQ AF/A3 and AF/A5 to ensure that initiatives are harmonized with the most urgent warfighter needs described in the Air Force Capabilities Review and Risk Assessment and the Joint Forces Command Warfighter challenge program. Once

UNCLASSIFIED

R-1 Line Item #158

Page 1 of 29

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>
--	--

validated, HI funds are applied toward identifying the most critical warfighter capabilities and ensuring they are horizontally integrated into both Air Force and Joint C2ISR programs of record.

Project 5140, Joint Expeditionary Force Experiments (JEFX) has transitioned from a large bi-annual warfighting experiment to more agile, smaller and frequent innovated-focused experiments leading to pre-fielding operational assessments. Constructive, Live-fly and virtual force operationally representative warfighter environment are created to focus on critical C2ISR areas of interest that support the Joint warfighter. This includes C2ISR information that supports the air, space and cyberspace domains. JEFX provides a vehicle for experimentation with emergin operational concepts and attendant new technologies that fill operational capability gaps in Air Force capabilities to meet emerging real world threats. The JEFX strategy is validated by HQ AF/A3 and A5 ensuring initiatives are harmonized with the most urgent warfighter needs described in the Air Force Capabilites Review and Risk Assesement and the Joint Forces Command Warfighter Challenge Program. JEFX themes are based on emerging CONOPS and warfighter challenges. JEFX initiatives are important enablers of innovation and transformation and are designed to support the themes and demonstrate emerging Air Force Capabilities to deploy and employ decisive air, space and cyberspace power for the Joint Force Commander.

This program is in Budget Activity 7- Operational System Development because it provides a vehicle for developers, testers, and warfighters to experiment, analyze, and explore operational concepts and new technologies to enhance operational system developments and improve future capabilities.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	31.705	26.792	0.000	0.000	0.000
Current President's Budget	30.832	30.293	24.229	0.000	24.229
Total Adjustments	-0.873	3.501	24.229	0.000	24.229
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		3.501			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.873	0.000	24.229	0.000	24.229

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 675078: *Horizontal Integration*

FY 2009	FY 2010

UNCLASSIFIED

R-1 Line Item #158

Page 2 of 29

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>
--	--

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Congressional Add: *GAPS/AWS Horizontal Integration*

Congressional Add Subtotals for Project: 675078

Congressional Add Totals for all Projects

FY 2009	FY 2010
0.000	3.501
0.000	3.501
0.000	3.501

Change Summary Explanation

In FY 2010: the change between the President's previous and current budget is due to the GAPS/AWS Horizontal Integration Congressional Increase.
 In FY 2011: the change between the President's previous and current budget is due to reprogramming adjustments to meet higher Air Force priorities.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>	PROJECT 675078: <i>Horizontal Integration</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
<i>675078: Horizontal Integration</i>	14.669	15.468	10.863	0.000	10.863	11.024	11.333	11.506	11.676	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Project 5078, Horizontal Integration (HI), is established to develop a Global Effects integrated capability to support cross-cutting net-centric solutions across air, space and Cyberspace C2ISR Warfighter domain. HI activities include studies and analysis, technology development, risk reduction, prototyping, experimentation and transition. These activities are required to identify, design, develop, experiment and implement C2ISR solutions supporting warfighting integration and interoperability needs which are not the sole responsibility of a specific program of record. The nature of integrated and interoperable C2ISR warfighting capabilities span multiple platforms and domains; these capabilities are routinely overlooked by traditional programs dedicated to supporting the requirements of specific warfighting communities. The HI Project is uniquely designed to look across these platforms and domains, which enables the Air Force to respond to the needs across the seams of individual systems. These horizontal integration initiatives will be prototyped, assessed, appropriately captured in requirements documents and then transitioned to programs of record for production, fielding and sustainment.

Systems Engineering and Analysis is the 'glue' that holds C2C elements together, and closes the seams in the Command, Control, Communications Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) architectures. Capability analysis identifies areas where interoperability can be improved within the Air Force, among joint services, and among coalition partners. Once capability issues are identified, they are prioritized and pilot initiatives are developed to provide solutions to the warfighter challenges that resolve the capability gaps.

The HI Project also helps to competitively prototype integrated solutions against validated program requirements. The benefits of this activity are two-fold: the operational community is able to weigh the cost, risk, and performance trade-offs between enterprise solutions versus program centric solutions; and the activity supports the DoDI 5000.02 requirement for competitive prototyping for all ACAT programs. The synchronization of HI prototyping and program milestone requirements offers an effective environment for increasing interoperability while reducing the impact of this policy on multiple pre-milestone B programs.

Modeling and Simulation (M&S) Infrastructure and Experimentation leverage existing government/industry simulation sites that allow 'virtual' assessments of the C2 Constellation. This Infrastructure environment manages a continuous distributed operational environment that supports air, space, and cyberspace C2ISR and rapid acquisition, prototyping, development, integration, and fielding. C2ISR initiatives use this infrastructure to mature their development status prior to entry into JEFX for final operational assessment.

UNCLASSIFIED

R-1 Line Item #158

Page 4 of 29

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>	PROJECT 675078: <i>Horizontal Integration</i>				
<p>The HI prototype performances are assessed for operational utility; the most promising initiatives/technologies will be matured and transitioned into weapon system configuration control baselines. Requirements documents will be published and revised, and a requirements database and implementation plan identifying the most significant C2C net-centric integration issues will be updated to catalog the activities necessary to accomplish this integration.</p> <p>This program is in Budget Activity 7 - Operational System Development because it provides developers, testers and warfighters a way to experiment, analyze, and explore operational concepts and new technologies to enhance operational system developments and improve future capabilities leading to a horizontally integrated C2ISR Warfighter Sub-enterprise.</p>						
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Requirements/Capabilites Based Planning (CBP) <i>FY 2009 Accomplishments:</i> In FY 2009: Extended the architecture supporting a broader context for strategic planning for the airborne network (AN). Analysis was conducted on applying Non-Traditional Intelligence, Surveillance, and Reconnaissance (NTISR) to an Offensive Counterair (OCA) or Suppression of Enemy Air Defense (SEAD) mission with the result of an architecture being defined and a cost model developed. <i>FY 2010 Plans:</i> In FY 2010: N/A <i>FY 2011 Base Plans:</i> In FY 2011: Will develop and document integrated Command and Control (C2) requirements for integrated air and missile defense. Will analyze and document emerging Air Force (AF) C2 requirements. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.		0.367	0.000	3.741	0.000	3.741
MAJOR THRUST: Architecture Development and Systems Engineering		4.577	2.583	0.436	0.000	0.436

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>		PROJECT 675078: <i>Horizontal Integration</i>		
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2009 Accomplishments:</i> In FY 2009: Updated version 3.2 to the C2 Constellation Architecture. The update included an Enterprise view that is federated to a C2 Operational Node View. This enterprise view included a mapping of capabilities to operational activities, operational activities to the Joint Common System Function List and system functions to a samplet of Electronic Systems Center (ESC) C2 systems.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continued to participate in and support planning for the Joint Air Ground Integration Cell (JAGIC) functional analysis. Work with the Army, AF & USMC as well as ESC/XR and Joint Expeditionary Force Experiment (JEFX) to produce a plan that identifies scope of the analysis assumptions, functions to be addressed, scenarios to be analyzed, and measures to be assessed.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Efforts will continue in support of the Joint Air Ground Integration Cell (JAGIC) functional analysis. In addition, functional analysis and technical expertise will be provided in support of the Joint Forces Air Component Commander-Forward (JFACC-Forward) and Airspace Coordination Measure Request (ACMR).</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>						
<p>MAJOR THRUST: Analysis Integration and Systems Engineering</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Three initiatives were funded that aid in filling gaps in the C4ISR architecture. Dynamic ISR Management Service (DIMS) will provide a potential solution for an ISR management system. Tactical Automated Informations System (TAIS) and Advanced Field Artillery Tactical Data System (AFATDS) are both US Army programs of record that will directly interface with the Air Operations Center (AOC) via Theater Battle Management Core System (TBMSC) and its successor programs</p>		3.345	0.772	0.733	0.000	0.733

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>		PROJECT 675078: <i>Horizontal Integration</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: N/A</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>								
<p>MAJOR THRUST: Horizontal Integration Solutions Assessment</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Simple C2 effort was initiated. Simple C2 is an agile Application Development Toolkit that lets end-users build, maintain and share customized applications to display data from disparate sources with the emphasis of enabling the Combat Coder to build specialized solutions for end users. Development was completed and the system demonstrated to various organizations. Currently working with the AOC-Weapon System program office to determine how to transfer this effort into their program.</p> <p><i>FY 2010 Plans:</i> In FY 2010: In order to foster enterprise integration across C2ISR programs and support the DoDI 5000.02 requirement for competitive prototyping, initiatives were selected for execution in FY10. Three prototyping efforts have been selected for execution: continuation of the Unmanned Aircraft Systems (UAS) C2 efforts under the MAESTRO initiative; prototyping an Air Mission Information Service (AMIS) under the guidance of the AO COI that will support deliberate and immediate mission planning; and prototyping an improved ISR management/visualization tool based on SOA technology. Additional program increase of \$3.5M is intended to support development of Global Air Presentation System (GAPS) and Airborne Web Services (AWS) for C2C.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Initiatives will be selected for execution that will foster enterprise integration across C2ISR programs and support the DoDI 5000.02 requirement for competitive prototyping. A data call</p>				1.367	4.290	4.015	0.000	4.015

UNCLASSIFIED

R-1 Line Item #158

Page 9 of 29

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>		PROJECT 675078: <i>Horizontal Integration</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
will be issued in third quarter FY10 and the submission will be evaluated and selected initiatives will be funded for execution in FY11. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.								
Accomplishments/Planned Programs Subtotals				14.669	11.967	10.863	0.000	10.863
				FY 2009	FY 2010			
Congressional Add: GAPS/AWS Horizontal Integration <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: For the Global Awareness Presentation System (GAPS), continued development of a visualization system that provided fused situation awareness and strategic information to USTRATCOM commanders. For the Airborne Web Services (AWS), continued to migrate JSTARS and AWACS towards a NetCentric Warfare capability that provided web services the capability to exchange data between the aircraft and ground user.				0.000	3.501			
Congressional Adds Subtotals				0.000	3.501			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>	PROJECT 675078: <i>Horizontal Integration</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (2273): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

This project uses full and open competition for operational requirements document creation, systems engineering & architecture development, modeling & simulation and experimentation, joint interoperability/integration, and horizontal integration approaches.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

R-1 Line Item #158

Page 11 of 29

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>					PROJECT 675078: <i>Horizontal Integration</i>				

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Requirements/Capability Based Planning (CBP)/GAPS/AWS Horizontal Integration	FFRDC	MITRE Corp ESC, Hanscom AFB (HAFB), MA	0.367	3.501	Mar 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Requirements/Capability Based Planning (CBP)/GAPS/AWS Horizontal Integration (1)	C/CPAF	Spectrum AFRL Rome NY, Langley VA	0.000	0.000		2.743	Dec 2010	0.000		2.743	Continuing	Continuing	Continuing
Requirements/Capability Based Planning (CBP)/GAPS/AWS Horizontal Integration (2)	C/CPAF	AFRL Rome NY	0.000	0.000		0.860	Oct 2010	0.000		0.860	Continuing	Continuing	Continuing
Architecture Development and Systems Engineering/GAPS/AWS Horizontal Integration	FFRDC	MITRE CORP ESC HAFB MA	1.417	0.289	Nov 2009	0.298	Nov 2010	0.000		0.298	Continuing	Continuing	Continuing
Architecture Development and Systems Engineering/GAPS/AWS Horizontal Integration (1)	C/CPAF	Lockheed Martin ESC HAFB MA	0.182	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Architecture Development and Systems Engineering/GAPS/AWS Horizontal Integration (2)	FFRDC	MITRE Corp GCIC, Langley AFB, VA	1.705	1.705	Oct 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing
	C/CPAF		0.950	0.394	Oct 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>	PROJECT 675078: <i>Horizontal Integration</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Architecture Development and Systems Engineering/ GAPS/AWS Horizontal Integration (3)		Northrop Grumman & EDS GCIC, Langely AFB, VA											
Analysis, Integration, and SE/Capability Roadmaps	C/CPAF	Lockheed Martin ESC, HAFB, MA	0.907	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Analysis, Integration, and SE/Capability Roadmaps (1)	C/CPAF	Lockheed Martin ESC, HAFB, MA	0.173	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Analysis, Integration, and SE/Capability Roadmaps (2)	FFRDC	MITRE HAFB, MA	1.732	0.578	Nov 2009	0.595	Nov 2010	0.000		0.595	Continuing	Continuing	Continuing
Analysis, Integration, and SE/Capability Roadmaps (3)	Various/ Various	EDS GCIC, 300 Exp.Way, Hampton,Va	0.210	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Tech Analysis and Concept Development	Various/ Various	Teledyne Brown GCIC, 300 Exp Way, Hampton, VA: AFCYBER LAFB VA	1.312	2.747	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Tech Analysis and Concept Development (1)	Various/ Various	Northrup Grumman AFRL Rome NY	0.000	0.000		1.800	Nov 2010	0.000		1.800	Continuing	Continuing	Continuing
	C/FFP	L-3 Titan	1.393	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>				PROJECT 675078: <i>Horizontal Integration</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
M&S Infrastructure and Experimentation		AFCYBER, LAFB VA											
M&S Infrastructure and Experimentation (1)	C/FFP	AFCYBER LAFB VA	1.662	1.187	Nov 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing
Horizontal Integration Solution Assessment	Various/ Various	ESC HAFB, MA	1.042	2.362	Jun 2010	2.088	Nov 2010	0.000		2.088	Continuing	Continuing	Continuing
Horizontal Integration Solution Assessment (1)	FFRDC	Mitre HAFB, MA	0.000	1.735	Jan 2010	1.787	Nov 2010	0.000		1.787	Continuing	Continuing	Continuing
Subtotal			13.052	14.498		10.171		0.000		10.171			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support	C/FFP	Quantech PASS ESC, HAFB, MA	0.258	0.298	Nov 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.258	0.298		0.000		0.000		0.000			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>	PROJECT 675078: <i>Horizontal Integration</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering Analysis and Assessment	Various/ Various	GCIC 300 Exp.Way, Hampton,Va	1.186	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			1.186	0.000		0.000		0.000		0.000			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Support-1	C/FFP	Quantech PASS ESC, HAFB, MA	0.173	0.238	Nov 2009	0.245	Nov 2010	0.000		0.245	Continuing	Continuing	Continuing
Program Management Support-2	C/FFP	Jacobs ETASS ESC, HAFB, MA	0.000	0.434	Dec 2009	0.447	Dec 2010	0.000		0.447	Continuing	Continuing	Continuing
Subtotal			0.173	0.672		0.692		0.000		0.692			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>	PROJECT 675078: <i>Horizontal Integration</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.669	15.468	10.863	0.000	10.863			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

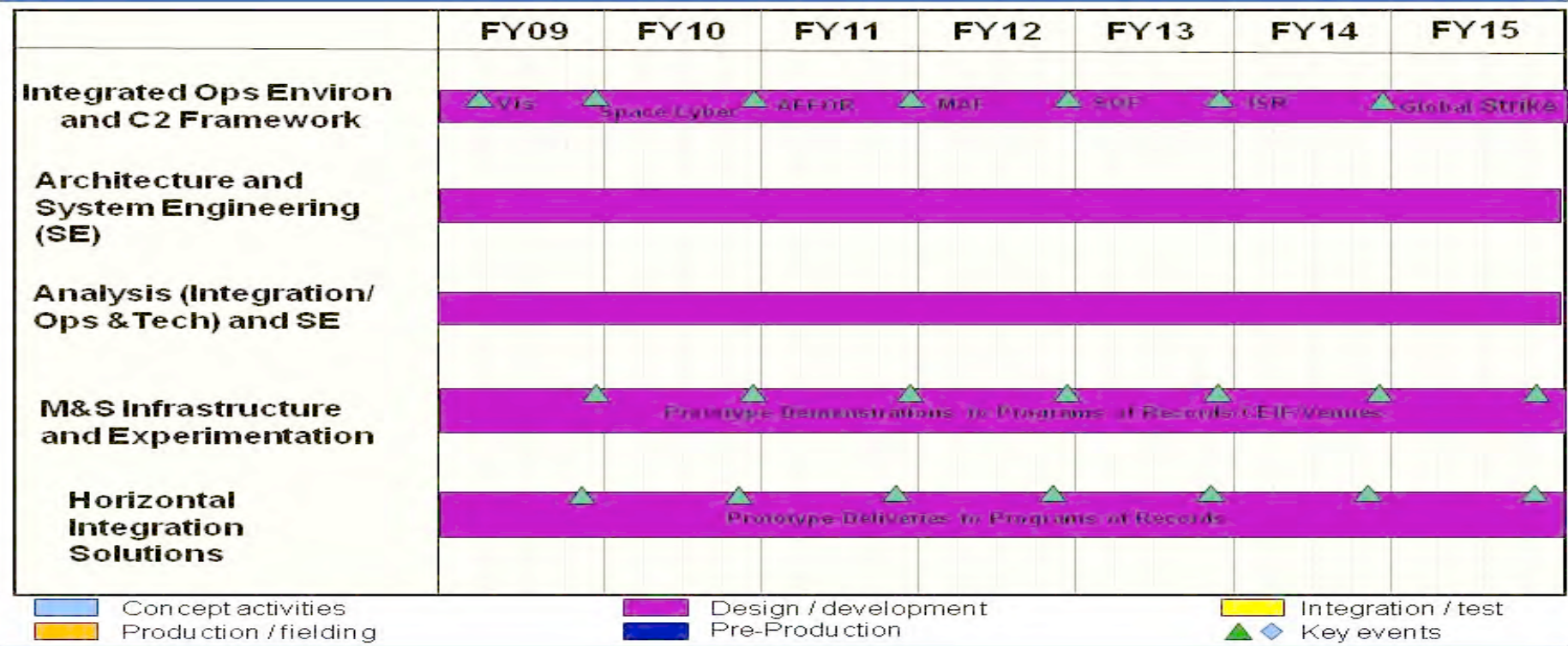
PE 0207449F: C2 Constellation

PROJECT

675078: Horizontal Integration



Horizontal Integration (HI) Schedule



PB11

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>	PROJECT 675078: <i>Horizontal Integration</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Integrated Ops Environment and C2 Framework	1	2009	4	2011
Architecture Development and Systems Engineering	1	2009	4	2011
Analysis (Integration/Ops/Tech) and Systems Engineering	1	2009	4	2011
M&S Infrastructure and Experimentation	1	2009	4	2011
Horizontal Integration Initiatives	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>				PROJECT 675140: <i>Joint Expeditionary Force Experiments</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675140: <i>Joint Expeditionary Force Experiments</i>	16.163	14.825	13.366	0.000	13.366	10.900	10.881	9.789	9.495	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Joint Expeditionary Force Experiments (JEFX) and supporting Limited Objective Experiments (LOE) are warfighter experiments that address emerging operational challenges and are part of the Air Force (AF) concept development and experimentation enterprise. JEFX/LOE explores significant capability gaps across the range of AF Concept of Operations (CONOPS) and address critical lessons learned from recent operations, findings from the Air Force Capabilities Review and Risk Assessments and the Warfighter Challenge program. They combine constructive, live-fly forces and virtual forces and simulations into an operationally representative warfighter environments. JEFX/LOE provides a multi-dimensional, multi-national, multi-service environment for an end-to-end process of experimentation, assessment, and transition of capabilities that will provide joint and coalition warfighters with solutions to critical warfighting gaps and lessons learned in recent and current operations. They demonstrate emerging Air Force capabilities demonstrate emerging Air Force capabilities to deploy and employ decisive aerospace power for the Joint Force Commander, and are important enablers of innovation and transformation. The integration of systems and processes is the major reason JEFX is an experiment and not simply a demonstration or exercise.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7 - Operational System Development because it provides horizontal integration, developers, testers, and warfighters to experiment, analyze, and explore operational concepts and new technologies to enhance operational system developments and improve capabilities of the air, space, and cyberspace forces.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Spiral develop systems architecture, systems engineering, and integration of initiatives into a cohesive system of systems process	3.294	3.250	2.928	0.000	2.928

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>		PROJECT 675140: <i>Joint Expeditionary Force Experiments</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2009 Accomplishments:</i> In FY 2009: Airborne Networking. Improved battlefield situational awareness information sharing; integrated AOC capability to exchange J-series messages with C2, airborne IP integration, combat, and NEW platforms; investigated non-traditional BDA.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Irregular Warfare. Involves 12 critical NAF sponsored initiatives aimed at improving C2 & ISR integration in support of Joint operations including UAV data encryption and improved B2/AWACS communications; tactical C2 and JAGIC integration with the Army; AF/Navy/Army/SOF airborne IP integration. SPIRIT ICE provides a cost effective, operationally configured environment to easily discover data link interoperability issues, improving B-2/AWACS combat readiness.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Day Without Space. Will continue experimentation efforts with focus on tactical and strategic architectures, communications, systems, and TTPs affected by loss or disruption of space signals due to atmospheric or intentional factors; evaluating effects and refining technologies, Tactics, Techniques, and Procedures aimed at improving AF contributions to the Joint Warfighters assuring mission assurance in a contested environment. Increasing focus on rapid spiral fielding in support of tactical operations; airborne communication integration.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>								
Accomplishments/Planned Programs Subtotals				16.163	14.825	13.366	0.000	13.366

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>	PROJECT 675140: <i>Joint Expeditionary Force Experiments</i>
--	--	--

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (2884): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

JEFX supports evolutionary acquisition of multiple programs by providing a venue to experiment new and emerging technologies to be integrated into other systems-of-record.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>	PROJECT 675140: <i>Joint Expeditionary Force Experiments</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Experimentation-1	FFRDC	MITRE ESC Hanscom AFB, MA	3.525	1.643	Nov 2009	1.573	Nov 2010	0.000		1.573	Continuing	Continuing	Continuing
Experimentation-2	C/CPFF	Sverdrup ESC Hanscom AFB	0.000	0.662	Jan 2010	0.662	Jan 2011	0.000		0.662	Continuing	Continuing	Continuing
Experimentation-3	C/FFP	Quantech ESC Hanscom AFB, MA	0.431	0.356	Jan 2010	0.356	Jan 2011	0.000		0.356	Continuing	Continuing	Continuing
Experimentation-4	C/CPAF	Lockheed Martin ESC Hanscom AFB, MA	0.000	0.625	Nov 2009	0.625	Nov 2010	0.000		0.625	Continuing	Continuing	Continuing
Experimentation-5	Various/ Various	ESC Hanscom AFB, MA	0.100	0.114	Oct 2009	0.114	Oct 2010	0.000		0.114	Continuing	Continuing	Continuing
Experimentation-6	C/CPFF	Spectrum AFRL Rome NY	5.802	5.577	Nov 2009	5.540	Nov 2010	0.000		5.540	Continuing	Continuing	Continuing
Experimentation-7	Various/ Various	505 CCW Hurlburt Field, FL	1.831	1.700	Nov 2009	1.700	Nov 2010	0.000		1.700	Continuing	Continuing	Continuing
Experimentation-8	MIPR	Various Various	4.474	4.148	Nov 2009	2.796	Nov 2010	0.000		2.796	Continuing	Continuing	Continuing
Subtotal			16.163	14.825		13.366		0.000		13.366			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>	PROJECT 675140: <i>Joint Expeditionary Force Experiments</i>
--	--	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.163	14.825	13.366	0.000	13.366			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

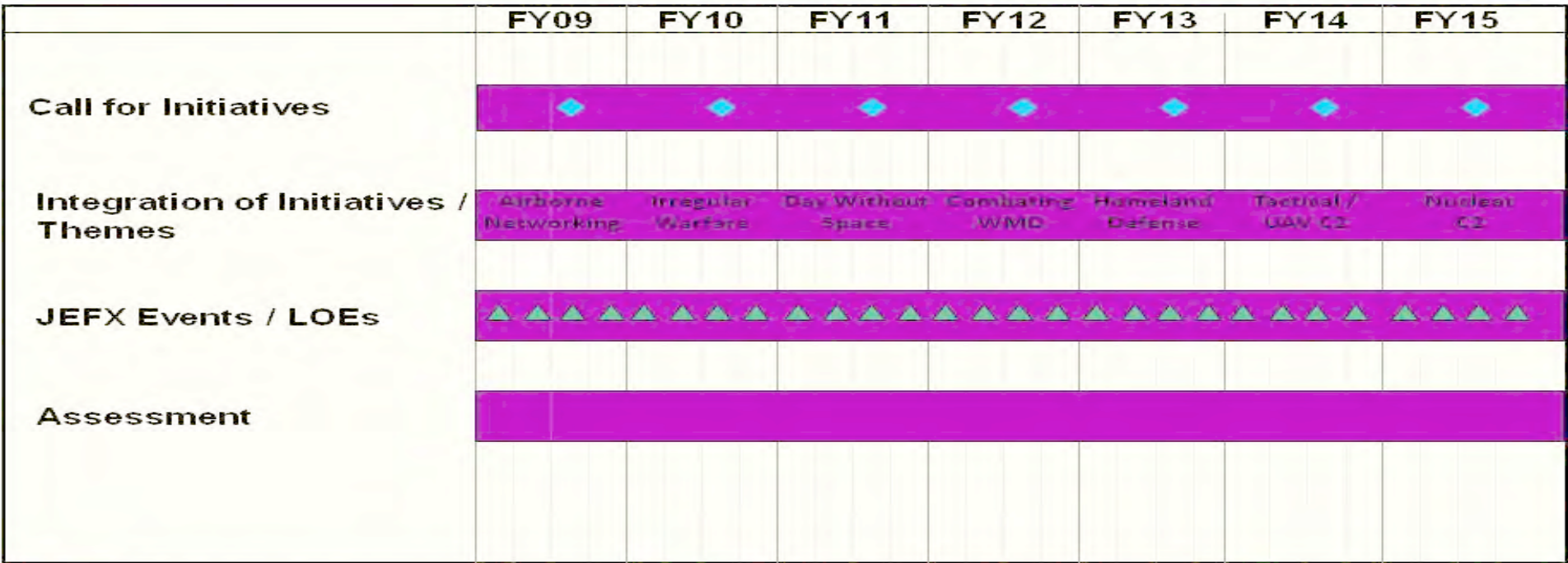
APPROPRIATION/BUDGET ACTIVITY
 3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0207449F: *C2 Constellation*

PROJECT
 675140: *Joint Expeditionary Force Experiments*



Joint Expeditionary Force Experiment (JEFX) Schedule



- Concept activities
- Design / development
- Integration / test
- Production / fielding
- Pre-Production
- Key events

PB11

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>C2 Constellation</i>	PROJECT 675140: <i>Joint Expeditionary Force Experiments</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Call for Initiatives	1	2009	4	2011
Integration of Initiatives/Themes	1	2009	4	2011
Limited Objective Experiment (LOE 1)	1	2009	1	2011
Limited Objective Experiment (LOE 2)	2	2009	2	2011
Limited Objective Experiment (LOE 3)	3	2009	3	2011
Limited Objective Experiment (LOE 4)	4	2009	4	2011
Assessment	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207581F: <i>JOINT STARS</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	97.625	185.616	168.917	0.000	168.917	72.228	32.273	32.385	32.876	Continuing	Continuing
670003: <i>JSTARS</i>	97.625	185.616	168.917	0.000	168.917	72.228	32.273	32.385	32.876	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Joint Surveillance Target Attack Radar System (Joint STARS) program produces the world's premier airborne ground surveillance platform, meeting joint combat capability requirements. The 707-based E-8C Joint STARS aircraft provides all-weather radar-derived surveillance and targeting information on moving and stationary ground targets, slowly moving rotary and fixed wing aircraft, and rotating antennas. Joint STARS provides target information for matching direct attack aircraft, standoff weapons, and ground-based attack assets against selected targets. It can be cued by other intelligence, surveillance, and reconnaissance (ISR) and target acquisition systems. This capability enables air and ground commanders to effectively make and execute battlefield decisions. It also helps achieve predictive battlespace awareness. Activities also include studies and analyses to support both current program planning and execution and future program planning.

This program element enhances the warfighter's ability to achieve the joint vision of combat operations. It develops advanced battle management aids and information fusion technologies to enable rapid decisions in tracking and killing time-critical targets. Concept exploration, program definition/risk reduction efforts, and studies support continuous improvements in Command & Control and ISR (C2ISR), Network Centric Operations capabilities, and interoperability with Joint Service, Allied, and Coalition systems. These efforts include, but are not limited to: Re-Engining; Radar Modernization; interoperability with manned and unmanned platforms; space data links; advanced Battle-Management Command and Control (BMC2) concepts; Electro Optical/Infrared (EO/IR) sensor activities; 8.33/25 kHz VHF Radio with Single Channel Ground and Airborne Radio System (SINCGARS) voice and data communication; ISR Constellation; Air Moving Target Indicator (AMTI); Ground Moving Target Indicator (GMTI); Advanced Radar Modes (ARM); Aided Target Recognition (ATR); Synthetic Aperture Radar (SAR)/Enhanced Synthetic Aperture Radar (ESAR); Network Centric Collaborative Targeting (NCCT); Beyond Line of Sight (BLOS) networking; Urgent Operational Needs (UONs); and Enhanced Land/Maritime Mode (ELMM). Additionally, Blue Force Tracking and other large airborne platform integration efforts include weapons guidance capabilities, Self Defense Suite (SDS), and radar and aircraft performance improvements. Joint Network Enabled Weapons (JNEW) efforts include participation in the Joint Surface Warfare (JSuW) Joint Capability Technology Demonstration (JCTD) and Engineering and Manufacturing Development (EMD) for Network Enabled Weapons (NEW) which includes, but is not limited to Joint Air to Surface Standoff Missile-Air Surface Warfare (JASSM-ASuW). All of these efforts rely on the test infrastructure provided by the Joint STARS Test Support (JETS) program and C2 Enterprise Integration Facility (CEIF). JETS includes a dedicated test aircraft, laboratories, and support facilities used by the Joint STARS Test Force (JTF) to conduct RDT&E activities. Training and support systems development efforts include, but are not limited to: Weapon Systems Trainer (WST); Navigator Training System (NTS); and Mission Crew Trainers to include a Mission Maintenance Trainer (MMT), Prime Mission Equipment-Maintenance Training Device (PME-MTD) and the Mission System Trainer (MST). Also included in this program element are programs to address Diminishing Manufacturing Sources (DMS), to include but not limited to Prime Mission Equipment (PME) DMS, Radar DMS, and Avionics DMS which includes, but is not limited to Aircraft

UNCLASSIFIED

R-1 Line Item #159

Page 1 of 12

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207581F: <i>JOINT STARS</i>
--	---

Information Program (AIP), Ground Proximity Warning System (GPWS), Communications, Navigation, Surveillance and Air Traffic Management (CNS/ATM) upgrades, Control and Display Unit (CDU)-800Y Replacement, Emergency Locator Transmitter (ELT), Flight Data Recorder (FDR), Mode 5 Identification Friend or Foe (IFF), Embedded GPS Inertial (EGI) with Selective Availability Anti-Spoofing Module (SAASM)/M-Code GPS, Digital Multi-Function Flight Display (Attitude Direction Indicator, Horizontal Situation Indicator and Attitude Heading Reference System) , a new Flight Management System (FMS), Flight Director, VOR/ILS/Marker Beacon multi-mode receiver (MMR), and digital engine instruments. A multi-phased Communications and Networking Upgrade (CNU) effort includes, but is not limited to Joint Tactical Radio System (JTRS), Integrated Broadcast Services (IBS), the Family of Advanced Beyond Line of Sight Terminals (FAB-T), wideband line of sight and beyond line of sight upgrades, Advanced Tactical Data Links integration, Airborne Networking, and Network Centric operation enhancements. The Joint STARS program will coordinate with and participate in projects developing international standards (including NATO standards) to ensure joint, allied, and coalition interoperability such as Joint Surface Warfare Joint Capability Technology Demonstration (JSuW JCTD) which provides Joint STARS with a prototype Precision Guided Munitions (PGMs) Guidance Capability and Joint STARS ASTOR Interoperability Program (JAIP).

The JSTARS Re-Engining program provides the E-8 aircraft additional range and time on station, improved fuel economy, time to climb, and reliability. It also adds the potential for additional power generation for future systems. Efforts include non-recurring engineering, flight test, MIL-STD qualification, and flight data analysis.

This program is in Budget Activity 7, Operational Systems Development, due to efforts supporting a post-Milestone C operational weapon system.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	81.025	140.670	0.000	0.000	0.000
Current President's Budget	97.625	185.616	168.917	0.000	168.917
Total Adjustments	16.600	44.946	168.917	0.000	168.917
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	-1.054			
• Congressional Adds		46.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	16.600	0.000	168.917	0.000	168.917

Change Summary Explanation

FY 2009 Funding Total includes \$16.6M increase for Re-Engining.

UNCLASSIFIED

R-1 Line Item #159

Page 2 of 12

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207581F: *JOINT STARS*

FY 2010 Funding Total includes \$46.0M increase for Re-Engining and a \$1.054M reduction for FFRDC
FY 2011 Funding Total includes \$68.8M increase for Re-Engining and a \$0.886M reduction for fact of life changes.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207581F: <i>JOINT STARS</i>	PROJECT 670003: <i>JSTARS</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
670003: <i>JSTARS</i>	97.625	185.616	168.917	0.000	168.917	72.228	32.273	32.385	32.876	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Joint Surveillance Target Attack Radar System (Joint STARS) program produces the world's premier airborne ground surveillance platform, meeting joint combat capability requirements. The 707-based E-8C Joint STARS aircraft provides radar-derived all-weather surveillance and targeting information on moving and stationary ground targets, slowly moving rotary and fixed wing aircraft, and rotating antennas. Joint STARS provides target information for matching direct attack aircraft, standoff weapons, and ground-based attack assets against selected targets, and can be cued by other intelligence, surveillance, and reconnaissance (ISR) and target acquisition systems. This capability enables air and ground commanders to effectively make and execute battle decisions.

This program element enhances the warfighter's ability to achieve the joint vision of combat operations. It develops advanced battle management aids and information fusion to enable rapid decisions in tracking and killing time-critical targets, and helps achieve predictive battlespace awareness. Concept exploration, program definition/risk reduction efforts, and studies support continuous improvements in Command/ Control and ISR (C2ISR) capabilities. These efforts include, but are not limited to, manned and unmanned platforms, space data links, advanced Battle-Management Command, Control and Communications (BMC3) concepts, ISR Constellation, Air Moving Target Indicator (AMTI), Ground Moving Target Indicator (GMTI), Mode 5/S and other large airborne platform integration efforts. The result is greater mission capability, higher mission reliability, and maximum weapon system availability.

This program is in Budget Activity 7, Operational Systems Development, due to efforts supporting a post-Milestone III operational weapon system.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Joint STARS Modernization <i>FY 2009 Accomplishments:</i> In FY2009: Spiral Development, Kill Chain and Integration Analysis, Interoperability, BLOS, PME/ DMS Phase I, JSRM, SINCGARS, JSuW Implementation, 8.33/25 kHz Radio, Senior Year Electro-	35.698	89.957	61.669	0.000	61.669

UNCLASSIFIED

R-1 Line Item #159

Page 4 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207581F: <i>JOINT STARS</i>		PROJECT 670003: <i>JSTARS</i>		
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>optical Reconnaissance System (SYERS) Study/Demonstration, CNU Phase I FAB-T Study, Joint STARS Radar Modernization (JSRM) RTR/WAS, Communications & Network Upgrade (CNU) Joint Tactical Radio System (JTRS), Enhanced Land/Maritime Mode (ELMM).</p> <p><i>FY 2010 Plans:</i> In FY2010: Spiral Development, Communications & Network Upgrade (CNU) Joint Tactical Radio System (JTRS), ELMM, PME/DMS, JSRM RTR/WAS, Avionics DMS, Communications & Network Upgrade (CNU) Joint Tactical Radio System (JTRS), JSuW, Fleet Viability Board Studies, SINGGARS, 8.33/25 kHz Radio, Quick Reaction Capabilities (QRC).</p> <p><i>FY 2011 Base Plans:</i> In FY2011: Spiral Development, SINGGARS, 8.33/25 kHz Radio, Phase II, CNU Phase I, Trainers, PME/DMS Phase II NRE, Avionics DMS (Spiral 1), QRC concept completion, JSuW.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>						
<p>MAJOR THRUST: Test and Infrastructure Effort</p> <p><i>FY 2009 Accomplishments:</i> In FY2009: Test and Infrastructure Effort including but not limited to Joint Test Force, JSTARS Extended Test Support contract, Information Assurance, range support, PL-2 security, support of T-3 test aircraft, test labs, etc.</p> <p><i>FY 2010 Plans:</i> In FY2010: Test and Infrastructure Effort including but not limited to Joint Test Force, JSTARS Extended Test Support contract, Information Assurance, range support, PL-2 security, support of T-3 test aircraft, test labs, etc.</p>		34.846	32.916	35.403	0.000	35.403

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207581F: <i>JOINT STARS</i>		PROJECT 670003: <i>JSTARS</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY2011: Test and Infrastructure Effort including but not limited to Joint Test Force, JSTARS Extended Test Support contract, Information Assurance, range support, PL-2 security, support of T-3 test aircraft, test labs, etc.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>								
<p>MAJOR THRUST: Re-Engining</p> <p><i>FY 2009 Accomplishments:</i> In FY2009: SORAP Complete, CFE/GFE - Retrofit Decision</p> <p><i>FY 2010 Plans:</i> In FY2010: Non-recurring engineering activity including FAA Certification, Flight Testing, Flight Performance Manuals, Pneumatic System Design and Development (Bleed Air), Maintenance Training</p> <p><i>FY 2011 Base Plans:</i> In FY2011: Non-recurring engineering activity including FAA Certification, Flight Testing, Flight Performance Manuals, Pneumatic System Design and Development (Bleed Air), Maintenance Training</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>				27.081	62.743	71.845	0.000	71.845
Accomplishments/Planned Programs Subtotals				97.625	185.616	168.917	0.000	168.917

UNCLASSIFIED

R-1 Line Item #159

Page 6 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207581F: <i>JOINT STARS</i>	PROJECT 670003: <i>JSTARS</i>
--	---	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207581F: <i>JSTARS, (APAF, Modifications)</i>	46.971	74.833	188.504	0.000	188.504	101.056	86.705	84.079	35.270	0.000	0.000
• PE 0207581F (1): <i>JSTARS, (APAF, Spares)</i>	8.934	20.836	6.697	0.000	6.697	17.379	3.532	1.512	1.540	0.000	0.000

D. Acquisition Strategy

Most major programs will be sole source to Northrop Grumman Corp. in Melbourne, Florida.
Trainer programs are sole source to Rockwell Collins in Sterling, Virginia.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0207581F: <i>JOINT STARS</i>					PROJECT 670003: <i>JSTARS</i>				

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CNS/ATM (GATM)/8.33/25 k Hz VHF Radio	Various/ Various	NGC Melb,FI	3.281	0.000		0.000		0.000		0.000	0.000	3.281	Continuing
Spiral Development	Various/ Various	NGC Melb,FI	2.394	8.418	Aug 2010	1.061	Nov 2010	0.000		1.061	0.000	11.873	Continuing
Communications & Network Upgrade (CNU) (Joint Tactical Radio System (JTRS))	Various/ Various	NGC Melb,FI	4.091	3.127	Nov 2009	0.785	Nov 2010	0.000		0.785	0.000	8.003	Continuing
ELMM/ARM	TBD/CPFF	NGC Melb,FI	5.131	2.287	Jan 2010	0.000		0.000		0.000	0.000	7.418	Continuing
PME DMS	TBD/CPIF	NGC Melb,FI	0.728	59.126	Mar 2010	49.409	Nov 2010	0.000		49.409	0.000	109.263	Continuing
SYERS Demonstration	TBD/FFP	HAFB MA	0.201	0.006	Jan 2010	0.000		0.000		0.000	0.000	0.207	Continuing
Joint STARS Radar Modernization (JSRM)	TBD/CPIF	NGC Melb,FI	19.872	0.000		0.000		0.000		0.000	0.000	19.872	0.000
Avionics DMS Baseline I/ Mode 5	TBD/TBD	NGC Melb,FI	0.000	16.993	Sep 2010	10.415	Nov 2010	0.000		10.415	0.000	27.408	0.000
Subtotal			35.698	89.957		61.670		0.000		61.670	0.000	187.325	

Remarks

Where Various Contract Method & Types take place, earliest date funds will be obligated is noted.

UNCLASSIFIED

R-1 Line Item #159

Page 8 of 12

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207581F: <i>JOINT STARS</i>				PROJECT 670003: <i>JSTARS</i>					

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SPO Ops Support	Various/ Various	HAFB MA	0.000	0.000		0.000		0.000		0.000	0.000	0.000	Continuing
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	

Remarks
Where Various Contract Method & Types take place, earliest date funds will be obligated is noted.

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
E-8C JSTARS Ext. Test Spt (JETS)	Various/ Various	NGC Melb,FI	28.301	27.188	Nov 2009	30.819	Nov 2010	0.000		30.819	0.000	86.308	Continuing
JTF Test Ops/Support	Various/ Various	JTF Melb,FI	6.545	5.728	Nov 2009	4.583	Nov 2010	0.000		4.583	0.000	16.856	Continuing
Subtotal			34.846	32.916		35.402		0.000		35.402	0.000	103.164	

Remarks
Where Various Contract Method & Types take place, earliest date funds will be obligated is noted.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0207581F: <i>JOINT STARS</i>					PROJECT 670003: <i>JSTARS</i>				

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total		Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
Re-Engining	Various/ Various	NGC Melb,FI	27.081	62.743	Jan 2010	71.845	Nov 2010	0.000		71.845	0.000	161.669	0.000	
Subtotal			27.081	62.743		71.845		0.000		71.845	0.000	161.669	0.000	

Remarks
Where Various Contract Method & Types take place, earliest date funds will be obligated is noted.

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	97.625	185.616	168.917	0.000	168.917	0.000	452.158	

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

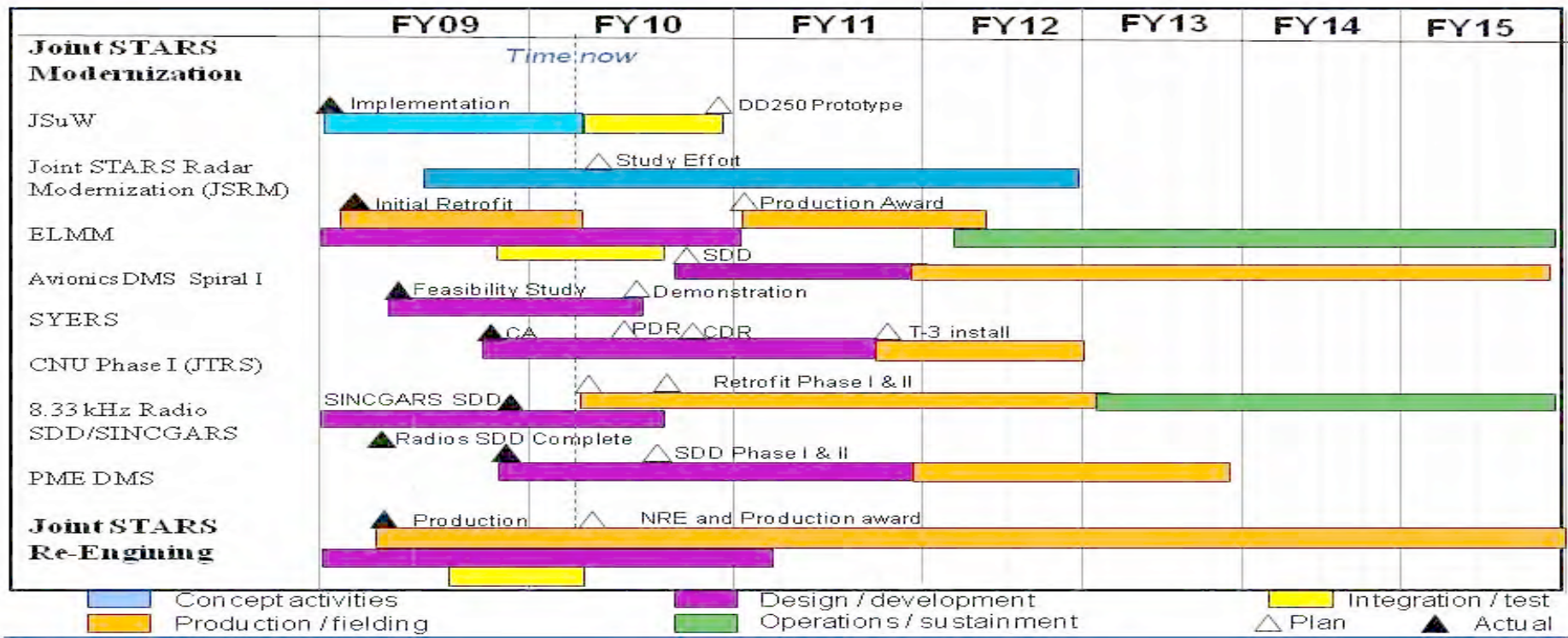
PE 0207581F: JOINT STARS

PROJECT

670003: JSTARS



Joint STARS Master Schedule



UNCLASSIFIED

R-1 Line Item #159

Page 11 of 12

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207581F: <i>JOINT STARS</i>	PROJECT 670003: <i>JSTARS</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Joint Surface Warfare (JSuW) Contract	1	2009	4	2010
Joint STARS Radar Modernization (JSRM) Contract	3	2009	4	2011
ELMM SDD Contract	1	2009	1	2011
ELMM Retrofit Contract	1	2009	2	2010
ELMM Production Contract	1	2011	4	2011
Avionics DMS EMD Phase I Start	4	2010	4	2011
SYERS Study/Demonstration Contract	4	2009	4	2009
CNU Phase I EMD Contract	4	2009	4	2011
CNU Production Contract	3	2011	4	2011
SINCGARS EMD Contract	2	2009	2	2010
8.33/25 kHz Radio Phase I Contract	3	2009	4	2011
8.33/25 kHz Radio Phase II Contract	2	2010	4	2011
PME Rasp Study Complete	2	2009	2	2009
PME DMS Phase I Contract	4	2009	2	2010
PME DMS Phase II Contract	2	2010	4	2011
Re-Engine Production Contract	2	2009	2	2010
Re-Engine EMD Contract	1	2009	1	2011
Re-Engine Integration and Test	3	2009	2	2010

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207590F: <i>Seek Eagle</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	21.355	22.071	19.263	0.000	19.263	18.661	19.239	19.532	19.820	Continuing	Continuing
674037: <i>SEEK EAGLE Certifications</i>	21.355	22.071	19.263	0.000	19.263	18.661	19.239	19.532	19.820	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Air Force operates a variety of combat aircraft that carry numerous and varied stores (munitions, missiles, fuel tanks, targeting pods, range pods, electronic countermeasures pods, etc.). Stores are carried in countless different loading combinations determined by operational and training scenarios, missions, tactics, and weapon development programs. Aircraft stores combinations change as operational plans and tactics change and as new stores are developed and fielded. Before operational, training or test use, the Air Force must evaluate these configurations for safe loading, carriage, and separation (jettison and normal release); as well as verify ballistics accuracy under the user-certified carriage and employment parameters. The Air Force SEEK EAGLE program completes certification recommendations and recommended flight clearances through any combination of engineering analysis, wind tunnel testing, modeling and simulation, and ground/flight test and evaluation. The program recommends about 1000 aircraft/store combinations for flight each year with analysis and testing, requiring from weeks to years depending on the complexity. Integrated solutions for combat aircrew weapon delivery planning problems are developed and provided to combat forces via Combat Weapons Delivery Software (CWDS). The program is also responsible for inserting new and emerging technologies into the SEEK EAGLE process as well as providing resources for the sustainment of a viable Air Force aircraft/store certification capability.

SEEK EAGLE funds are currently budgeted to support certification testing and analysis for new weapons programs (and all new variants) including, but not limited to: GBU-39 Small Diameter Bomb (SDB) I/II, GBU-54 Laser Joint Direct Attack Munitions (LJDAM), AGM-158 Joint Air-to-Surface Standoff Missile (JASSM), AIM-9X, AIM-120 (Advanced Medium Range Air-to-Air Missile, AMRAAM), ADM-160 Miniature Air-Launched Decoy (MALD), MALD-Jammer, BRU-57 (Smart Bomb Rack), GBU-51 low collateral damage warheads for Precision Guided Munitions (PGMs), Sniper Targeting Pod with video data link, LITENING Targeting Pod with video data link, Airborne Instrumentation System (AIS) pods, and many other inventory stores on inventory CAF and SOCOM aircraft. SEEK EAGLE funds are also used to assist the F-35 JPO with subject matter expertise in the System Development and Demonstration phase; developing a very limited organic store certifications capability to support F-35 in the Production, Sustainment, Follow-on Development phase. SEEK EAGLE funds will continue developing F-22 engineering models/data and provide follow-on technical support from Lockheed Martin. SEEK EAGLE funds are used to obtain non-inventory stores for post-integration certification requirements.

The RDT&E Budget Activity is 07, Operational System Development, because the program supports fielded systems.

UNCLASSIFIED

R-1 Line Item #160

Page 1 of 11

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207590F: <i>Seek Eagle</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	21.586	22.071	0.000	0.000	0.000
Current President's Budget	21.355	22.071	19.263	0.000	19.263
Total Adjustments	-0.231	0.000	19.263	0.000	19.263
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.231	0.000	19.263	0.000	19.263

Change Summary Explanation

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207590F: <i>Seek Eagle</i>	PROJECT 674037: <i>SEEK EAGLE Certifications</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674037: <i>SEEK EAGLE Certifications</i>	21.355	22.071	19.263	0.000	19.263	18.661	19.239	19.532	19.820	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Air Force operates a variety of combat aircraft that carry numerous and varied stores (munitions, missiles, fuel tanks, targeting pods, range pods, electronic countermeasures pods, etc.). Stores are carried in countless different loading combinations determined by operational and training scenarios, missions, tactics, and weapon development programs. Aircraft stores combinations change as operational plans and tactics change and as new stores are developed and fielded. Before operational, training or test use, the Air Force must evaluate these configurations for safe loading, carriage, and separation (jettison and normal release); as well as verify ballistics accuracy under the user-certified carriage and employment parameters. The Air Force SEEK EAGLE program completes certification recommendations and recommended flight clearances through any combination of engineering analysis, wind tunnel testing, modeling and simulation, and ground/flight test and evaluation. The program recommends about 1000 aircraft/store combinations for flight each year with analysis and testing, requiring from weeks to years depending on the complexity. Integrated solutions for combat aircrew weapon delivery planning problems are developed and provided to combat forces via Combat Weapons Delivery Software (CWDS). The program is also responsible for inserting new and emerging technologies into the SEEK EAGLE process as well as providing resources for the sustainment of a viable Air Force aircraft/store certification capability.

SEEK EAGLE funds are currently budgeted to support certification testing and analysis for new weapons programs (and all new variants) including, but not limited to: GBU-39 Small Diameter Bomb (SDB) I/II, GBU-54 Laser Joint Direct Attack Munitions (LJDAM), AGM-158 Joint Air-to-Surface Standoff Missile (JASSM), AIM-9X, AIM-120 (Advanced Medium Range Air-to-Air Missile, AMRAAM), ADM-160 Miniature Air-Launched Decoy (MALD), MALD-Jammer, BRU-57 (Smart Bomb Rack), GBU-51 low collateral damage warheads for Precision Guided Munitions (PGMs), Sniper Targeting Pod with video data link, LITENING Targeting Pod with video data link, Airborne Instrumentation System (AIS) pods, and many other inventory stores on inventory CAF and SOCOM aircraft. SEEK EAGLE funds are also used to assist the F-35 JPO with subject matter expertise in the System Development and Demonstration phase; developing a very limited organic store certifications capability to support F-35 in the Production, Sustainment, Follow-on Development phase. SEEK EAGLE funds will continue developing F-22 engineering models/data and provide follow-on technical support from Lockheed Martin. SEEK EAGLE funds are used to obtain non-inventory stores for post-integration certification requirements.

The RDT&E Budget Activity is 07, Operational System Development, because the program supports fielded systems.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

R-1 Line Item #160

Page 3 of 11

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207590F: <i>Seek Eagle</i>	PROJECT 674037: <i>SEEK EAGLE Certifications</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Continually provide compatibility flight recommendations as requested by ACC/A8, AAC, AFSOC and other agencies. Perform extensive F-16/SDB II ground and flight testing.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continually provide compatibility flight recommendations as requested by ACC/A8, AAC, AFSOC and other agencies.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	21.355	22.071	19.263	0.000	19.263

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (3850): <i>None</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The SEEK EAGLE program does not execute in accordance with established acquisition program milestones. For initial aircraft-weapons integration, the aircraft or weapon program office is responsible for budgeting and providing the test assets to AFSEO for the store certification requirements. For post integration certification requirements, AFSEO funds are used to obtain the non-inventory test assets.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207590F: <i>Seek Eagle</i>				PROJECT 674037: <i>SEEK EAGLE Certifications</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Organic F-22 Capabilities	C/CPFF	Lockheed Martin Marietta, GA	8.619	2.200		2.000		0.000		2.000	Continuing	Continuing	0.000
Enhance Existing and Develop Organic Electro EMI Capabilities	C/CPFF	Applied Research Baltimore, MD	0.260	0.250		0.300		0.000		0.300	Continuing	Continuing	0.000
Subtotal			8.879	2.450		2.300		0.000		2.300			0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mission Support	PO	TBD Eglin AFB, FL	21.510	3.507		3.507		0.000		3.507	Continuing	Continuing	0.000
Subtotal			21.510	3.507		3.507		0.000		3.507			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207590F: <i>Seek Eagle</i>	PROJECT 674037: <i>SEEK EAGLE Certifications</i>
--	--	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
46th Test Wing	PO	TBD Eglin AFB, FL	201.048	13.016		9.889		0.000		9.889	Continuing	Continuing	0.000
AEDC	PO	No text provided Arnold Engineering Dev Center, TN	20.741	1.344		2.247		0.000		2.247	Continuing	Continuing	0.000
AFFTC	Various	TBD Edward AFB, CA	0.900	0.400		0.320		0.000		0.320	Continuing	Continuing	0.000
Various	Various	Various Multiple other for T&E Support	92.012	1.354		1.000		0.000		1.000	Continuing	Continuing	0.000
Subtotal			314.701	16.114		13.456		0.000		13.456			0.000

Remarks

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		345.090	22.071		19.263		0.000	19.263			0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

R-1 Line Item #160

Page 9 of 11

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207590F: <i>Seek Eagle</i>	PROJECT 674037: <i>SEEK EAGLE Certifications</i>

The SEEK EAGLE program does not execute in accordance with established acquisition program milestones. Each aircraft/store configuration requested by the user goes through the SEEK EAGLE process by the designated user priority.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207590F: *Seek Eagle*

PROJECT

674037: *SEEK EAGLE Certifications*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
JDAM	1	2009	4	2011
JASSM	1	2009	4	2011
SDB	1	2009	4	2011
AIM-9X	1	2009	4	2011
AIM-120	1	2009	4	2011
WCMD	1	2009	4	2011
MALD	1	2009	4	2011
SNIPER VDL	1	2009	4	2011
LITENING GEN 4	1	2009	4	2011

UNCLASSIFIED

R-1 Line Item #160

Page 11 of 11

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	28.062	27.161	21.638	0.000	21.638	24.830	24.074	24.753	25.947	Continuing	Continuing
674567: <i>M&S Foundations</i>	5.856	6.185	5.976	0.000	5.976	6.266	6.363	6.459	6.554	Continuing	Continuing
674991: <i>Accelerated Acquisitions</i>	4.754	5.146	4.676	0.000	4.676	5.252	5.332	5.413	5.493	Continuing	Continuing
675135: <i>Warfighter Readiness</i>	17.452	15.830	10.986	0.000	10.986	13.312	12.379	12.881	13.900	Continuing	Continuing

A. Mission Description and Budget Item Justification

United States Air Force (USAF) Modeling & Simulation (M&S) Program Element (PE) is broken into four thrust areas: Modeling and Simulation Foundations, Accelerated Acquisition, New and Emerging Warfighting Capabilities, and Warfighter Readiness. It directly supports Air Force, Joint, Coalition composite training and rehearsal, concept development, and acquisition and testing through model and simulation development; as well as the integration of these across and within Live, Virtual, and Constructive (LVC) environments. This program focuses on support of Department of Defense (DoD) Training Transformation (T2), acquisition excellence initiatives, and foundational capabilities needed for interoperability, accessibility, reuse, and scalability. It allows the authoritative portrayal of new and emerging Air Force capabilities within Army, Navy, Marines, OSD, interagency, and coalition LVC environments; as well as reciprocating their capabilities within our Air Force LVC environments. LVC environments today are used as the most cost effective means to meet mission needs, the most practical means, and sometimes the only way.

In support of the DoD T2 initiative, USAF M&S program thrust areas develop and modernize models and simulations that are the constructive backbone of Air Force and Joint Training and Rehearsal. Once these models and simulations are developed, they are integrated across training LVC environments for use by Major and Combatant Commands. This development and integration is imperative to ensure that air, space, and cyberspace training and mission rehearsal activities are supported with realistic, interoperable, and readily available tools, data, and services. These, in turn, enable joint, coalition, and interagency training required to prepare forces for combat by generating the air and space picture for the Air and Space Operations Center (AOC), Joint Force Air Component Commander (JFACC), and Joint Force Commander in combat exercises; training over 30,000 personnel per year in exercises (e.g., Ulchi Freedom Guardian, Red & Blue Flags, Unified Endeavor, etc). These programs also provide the current foundational environment that enables warfighters to interact with high-fidelity tactical cockpit simulators, like 5th Gen and beyond, which replicate High Demand/Low Density platforms that are often unavailable for training due to real-world operations; while simultaneously linking it to warfighters using their current command and control systems 1,000 miles away and the constructive simulations being run from key operational wargaming and simulation centers worldwide. USAF M&S is integral to inter-agency Homeland Defense exercises chartered to train combat units tasked to protect the Homeland, including the National Capital Region (exercise Amalgam Arrow); generates equipment and manpower efficiencies by using simulations which reduce fuel consumption, aircraft wear and tear, and manpower costs.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>
--	--

In support of the DoD drive to improve the effectiveness and efficiency of its enterprise-wide acquisition business processes, the USAF M&S PE develops and supports enhancements to models, simulations, tools, and the LVC infrastructure to provide for system-of-systems M&S capabilities across the lifecycle, reduce developmental costs, and minimize risks. These capabilities support the acquisition process from concept development through test and evaluation.

This program is in Budget Activity 7 - Operational System Development because it provides RDT&E funding for major USAF Modeling and Simulation efforts.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	28.866	27.245	0.000	0.000	0.000
Current President's Budget	28.062	27.161	21.638	0.000	21.638
Total Adjustments	-0.804	-0.084	21.638	0.000	21.638
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.804	-0.084	21.638	0.000	21.638

Change Summary Explanation

The change between the FY 2011 President's previous and current budget is due to a reprogramming adjustments to meet higher Air Force priorities.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674567: <i>M&S Foundations</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674567: <i>M&S Foundations</i>	5.856	6.185	5.976	0.000	5.976	6.266	6.363	6.459	6.554	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Modeling and Simulation Foundations (MSF) focuses on integrating foundational capabilities needed to improve the usefulness, productivity, scalability and efficiency of Modeling and Simulation (M&S) capabilities derived from the Warfighter Readiness (WR) thrust, the Accelerated Acquisitions (AA) thrust, and the New and Emerging Warfighting Capabilities (NEWC) thrust. MSF are the: standards, policies, procedures, architectures, and tools that enable the rapid and efficient composition of distributed environments to support both the warfighter needs and the US Air Force's (USAF) functional communities of: acquisition, training, planning, analysis, testing, training, education, and experimentation requirements. The efforts supporting the M&S Foundations thrust include both concept exploration and development. Activities also include studies and analysis to support both current program planning and execution and future program planning. This also funds the USAF in its capacity as the Department of Defense (DoD) Modeling and Simulation Executive Agent (MSEA) for the Aerospace Natural Environment.

MSF's objective is to establish a USAF Live-Virtual-Constructive-Integrated Architecture (LVC-IA) that provides a persistent network of constructive computer simulations, man-in-the-loop virtual simulators, and live forces/resources in an interoperable environment that supports USAF organizations and the functional communities. This objective will be achieved by MSF providing tools, standards and interfaces to be used by model developers and users to ensure efficiencies and model reuse. MSF provides the capability to rapidly and efficiently create realistic and accurate synthetic operational battlespaces to support the full spectrum of activities associated with concept development to acquisition and testing through composite training and mission rehearsal. This is done by providing appropriate authoritative data and component representations. With the capability generated via MSF, users will readily access available repositories of reusable, validated, and integrated synthetic components. Synthetic components include representations of operational battlespace entities (such as friendly and enemy assets) and representations of the natural environment that include the terrain, atmospheric and space weather effects; and energy and signal propagation effects. The rapid composition is based on a durable common architecture framework, policies, and common standards. MSF capability also supports: efficient, cost-effective verification, validation, and accreditation activity across all of the M&S functional and organizational communities.

As the DoD Air and Space Natural Environment Modeling and Simulation Executive Agent (ASNE MSEA), the Air Force coordinates all aspects of DoD M&S related to representations of the air and space natural environment. The tools developed through this include the Environmental Scenario Generator, the Environmental Data Cube Support System, and the Space Weather Analysis. ASNE MSEA collaborates with other national partners to provide the USAF and DoD access to authoritative natural environment scenarios necessary for robust "What-if" mission planning and rehearsal and for realistic training, analysis, and acquisition. ASNE MSEA leads the development and execution of the DoD Integrated Natural Environment Authoritative Representation Process (INEARP) Concept of Operations.

UNCLASSIFIED

R-1 Line Item #161

Page 3 of 25

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674567: <i>M&S Foundations</i>
--	--	--

This program is in Budget Activity 7 - Operational System Development because it provides RDT&E funding for major USAF Modeling and Simulation efforts.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: M&S Foundations (MSF) Concept exploration/model development/model transition (LVC-IA, M&S Workforce)</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Continued to certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE). Continued development of the Scenario Generation System, Cross Domain Solutions for USAFE and information operations modeling and simulation capabilities.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continue to certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE). Continue development of the Scenario Generation System.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Will continue to certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE). Will continue development of the Scenario Generation System. Begin the implementation and RDT&E of a standardized Integrated Architecture for the Live-Virtual-Constructive enterprise.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>	4.881	5.190	4.985	0.000	4.985
<p>MAJOR THRUST: Provide DoD M&S community with tools to search Air & Space Natural Environment (ASNE) scenarios; measure effects on weapon systems and subsystems and distribute tailored reusable dat...</p>	0.975	0.995	0.991	0.000	0.991

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674567: <i>M&S Foundations</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2009 Accomplishments:</i> In FY 2009: Continued to certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE). Continued development of the Air and Space Natural Environment (ASNE) capabilities.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continue to certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE). Continue development of the Air and Space Natural Environment (ASNE) capabilities.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Will continue to certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE). Will continue development of the Air and Space Natural Environment (ASNE) capabilities. Begin the implementation and RDT&E of a standardized Integrated Architecture for the Live-Virtual-Constructive enterprise.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	5.856	6.185	5.976	0.000	5.976

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (4221): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

OAS, Kirtland AFB, NM manages the acquisition and model's incremental development process for all M&S Foundation activities. All major contracts will be awarded after full and open competition.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674567: <i>M&S Foundations</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674567: <i>M&S Foundations</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Concept Refinement, Technology, services, and tools support	Various/ Various	Various Various	4.881	5.190	Oct 2009	4.985	Oct 2010	0.000		4.985	Continuing	Continuing	Continuing
ASNE (Services, Tools, and Environmental support)	Various/ Various	Various Various	0.975	0.995	Oct 2009	0.991	Oct 2010	0.000		0.991	Continuing	Continuing	Continuing
Subtotal			5.856	6.185		5.976		0.000		5.976			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.856	6.185	5.976	0.000	5.976			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207601F: *USAF Modeling and Simulation*

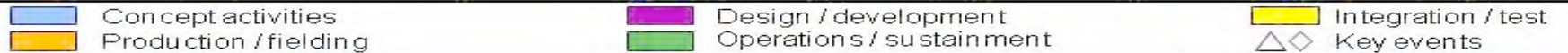
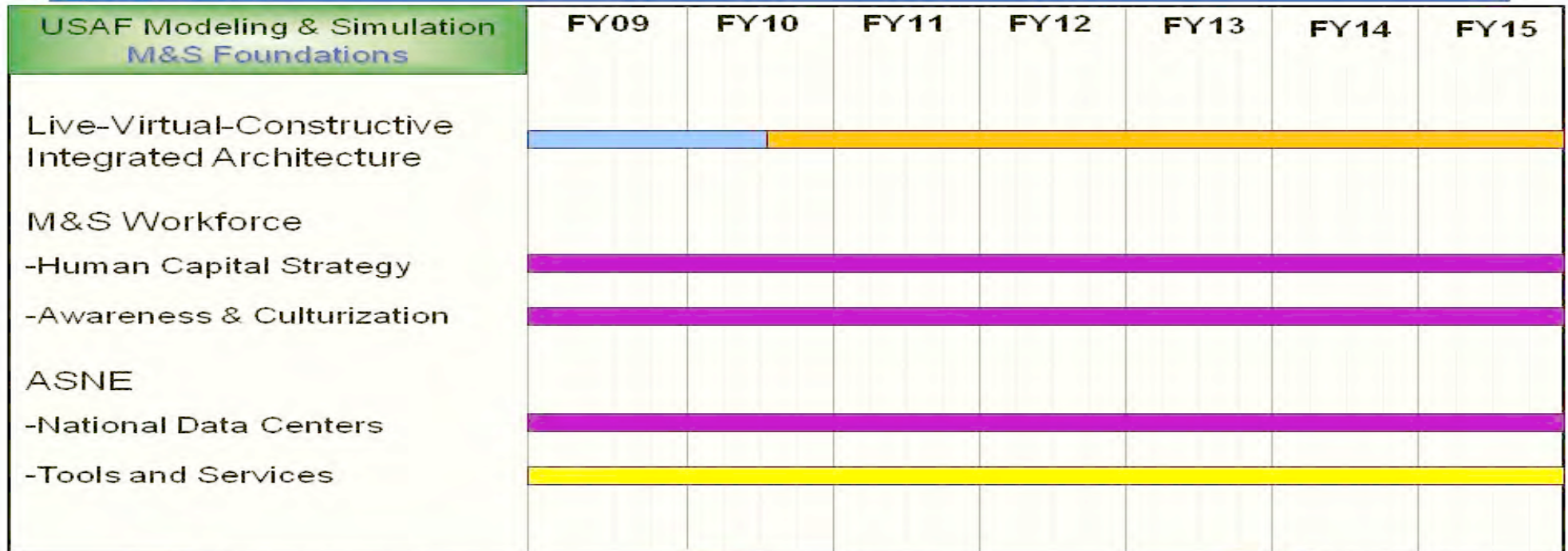
PROJECT

674567: *M&S Foundations*



PE 27601F – USAF Modeling & Simulation M&S Foundations (Project 4567) Schedule

U.S. AIR FORCE



Integrity - Service - Excellence

UNCLASSIFIED

R-1 Line Item #161

Page 8 of 25

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674567: <i>M&S Foundations</i>
--	--	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Live-Virtual-Constructive Integrated Architecture	1	2009	4	2011
M&S Workforce (Human Capital Strategy/Awareness & Culturization)	1	2009	4	2011
ASNE (National Data Centers/Tools and Services)	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674991: <i>Accelerated Acquisitions</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674991: <i>Accelerated Acquisitions</i>	4.754	5.146	4.676	0.000	4.676	5.252	5.332	5.413	5.493	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Accelerated Acquisition (AA) focuses on fostering M&S tools, data, and infrastructure to enable high confidence acquisition of capabilities to support the joint warfighter. This includes Live-Virtual-Constructive (LVC) infrastructure, tools and processes supporting LVC events, and models, tools, data, simulations/stimulation to support requirements definition, systems engineering and test activities. Activities also include M&S support for studies and analysis to support both current program planning and execution and future program planning. These efforts will enable more efficient delivery of effective capabilities to the warfighter while reducing the time and resources required for design, development, test and evaluation, maintainability and sustainment.

A key objective is to improve interoperability of weapon systems and platforms through continuing, rigorous interoperability evaluation in a representative Joint Mission Environment. Additionally, AA activities seek to reduce risk associated with acquisition programs by influencing models, simulations, tools, data and infrastructure linking combat system engineering sites to facilitate concept exploration, development and assessment of systems in a net-centric mission context.

This provides the capability to improve both Service and Joint system performance in a system-of-systems environment. Connectivity established by the infrastructure builds upon existing Service and Joint combat system engineering and test sites, such as C4I hardware in the loop and computer-program-in-the-loop engineering sites (including design activities, software support activities, test & evaluation facilities and training commands). Development includes concept of operations, business rules, and procedures to enable acquisition managers to effectively use LVC capabilities.

These efforts enable accurately represented Command, Control, Communications, Computer, and Intelligence (C4I) networks for capability requirement definition, development, and testing activities to evaluate those systems for interoperability and integration into a joint environment. This will address interoperability issues by providing a means for discovering issues early on.

This project is in Budget Activity 7 - Operational System Development because it enhances operational system developments.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674991: <i>Accelerated Acquisitions</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments. This includes: capability builds for infrared, digital radio, airborne network data-link, integrated air defense representation; advanced reconfigurable fighter, tactical data-links and electronic warfare; processes to support use case and scenario tractability to the analytic agenda; collaborative assessment process refinement; and definition and refinement of model code language and architecture.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Will continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.).</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	4.754	5.146	4.676	0.000	4.676

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (4443): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

SAF/XC provides oversight of the Accelerated Acquisition project. Various Air Force activities incrementally develop, verify, and validate models, tools, data and simulations/simulation environments. All major contracts will be awarded after full and open competition.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674991: <i>Accelerated Acquisitions</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674991: <i>Accelerated Acquisitions</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Architecture & Links	Various/ Various	Various Various	0.150	0.147	Nov 2009	0.155	Nov 2010	0.000		0.155	Continuing	Continuing	Continuing
Event Coordination	Various/ Various	Various Various	0.225	0.221	Nov 2009	0.225	Nov 2010	0.000		0.225	Continuing	Continuing	Continuing
Model, Tool, Data, Simulation Development & Verification	Various/ Various	Various Various	3.591	4.003	Nov 2009	3.505	Nov 2010	0.000		3.505	Continuing	Continuing	Continuing
Joint Service Integration	Various/ Various	Various Various	0.788	0.775	Nov 2009	0.791	Nov 2010	0.000		0.791	Continuing	Continuing	Continuing
Subtotal			4.754	5.146		4.676		0.000		4.676			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.754	5.146	4.676	0.000	4.676			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

R-1 Line Item #161

Page 16 of 25

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207601F: *USAF Modeling and Simulation*

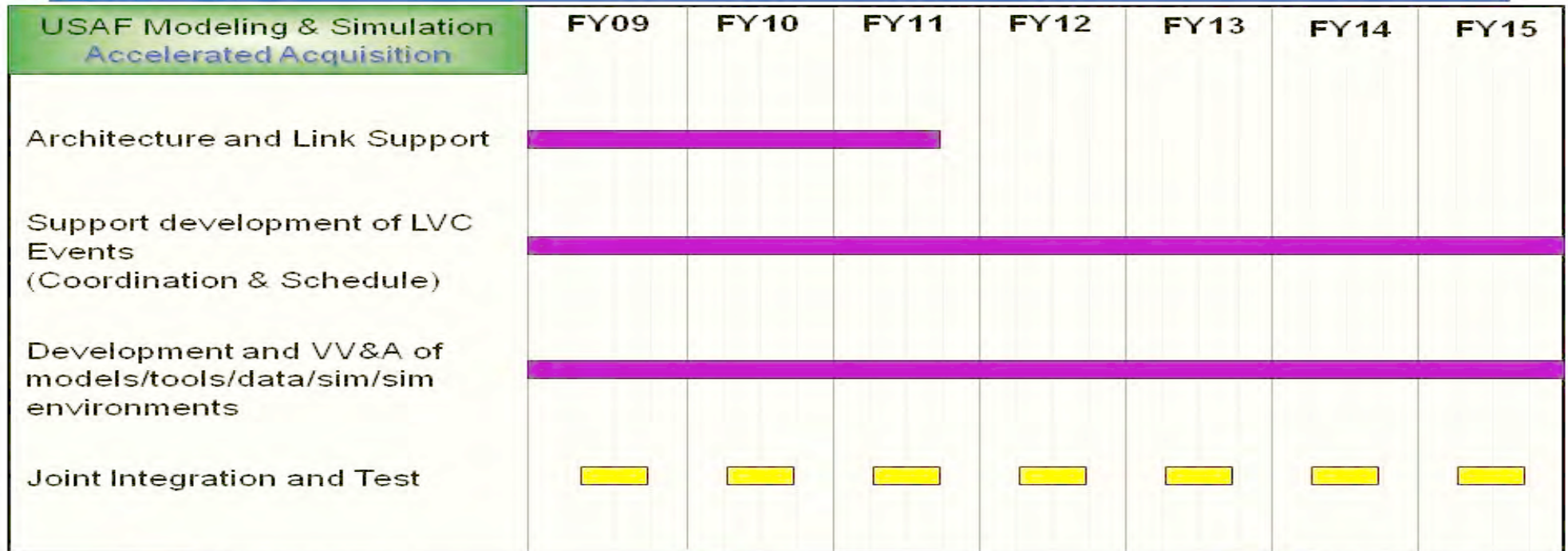
PROJECT

674991: *Accelerated Acquisitions*



PE 27601F – USAF Modeling & Simulation Accelerated Acquisition (Project 4991) Schedule

U.S. AIR FORCE



- | | | |
|-----------------------|--------------------------|--------------------|
| Concept activities | Design / development | Integration / test |
| Production / fielding | Operations / sustainment | Key events |

Integrity - Service - Excellence

UNCLASSIFIED

R-1 Line Item #161

Page 17 of 25

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674991: <i>Accelerated Acquisitions</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Architecture & Link Support	1	2009	3	2011
Event development of LVC Events	1	2009	4	2011
Development and VV&A of models, tools, data, simulation/stimulation environments	1	2009	4	2011
Joint Integration & Test	2	2009	3	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 675135: <i>Warfighter Readiness</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675135: <i>Warfighter Readiness</i>	17.452	15.830	10.986	0.000	10.986	13.312	12.379	12.881	13.900	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Modeling and Simulation support to our Warfighter's Readiness is a United States Air Force (USAF) corporate imperative to ensure air, space, cyberspace training, and mission rehearsal activities are supported with realistic, interoperable, and readily available, tools, data, services and environments. Warfighter Readiness supports Department of Defense (DoD) Training Transformation (T2) and Joint National Training Capability (JNTC) along with the USAF priorities and core functions. It includes several complimentary programs, initiatives and areas for investment:

Warfighter and Joint Training Integration supports the Chief of Staff of the Air Force (CSAF) directed Live-Virtual-Constructive (LVC) Integration efforts and is a critical piece to the USAF's implementation of the Strategic Plan for Transforming DoD Training. The goal of LVC training and mission rehearsal is to prepare our warfighters for the full range of military operations and maintain the combat readiness levels required by the Combatant Commands (COCOMs). This can only be accomplished by training and rehearsing in realistic operational environments. These environments include live training ranges and virtual simulators enhanced with constructive entities. Specific training and mission rehearsal events can include some or all of these simultaneously; making the ability to integrate LVC capabilities a necessity.

The Air, Space, and Cyberspace Constructive Environment (ASCCE) is the USAF's authoritative federation of constructive training models and tools realistically representing the tactical and operational capabilities the USAF brings to the Joint fight. It includes:

- 1) The Air Force Modeling and Simulation Training Toolkit (AFMSTT), which provides the authoritative representation of Air Force and Joint theater-level air and space power and is used to train Air and Space Operations Center (AOC) personnel and COCOM battle staffs. The primary model in the AFMSTT is the Air Warfare Simulation (AWSIM).
- 2) The Information Operations Suite (IOS), which provides the authoritative representation of Air Force information operations. IOS is comprised of a suite of models that support training and mission rehearsal for the Air Force, Joint Task Force commanders, and COCOM battle staffs during Joint and Service exercises and experimentations.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 675135: <i>Warfighter Readiness</i>
--	--	---

Other capabilities, such as the Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) provide for Intelligence, Surveillance, and Reconnaissance (ISR) training and exercise support by using virtual simulators and constructive models for command and staff level training. These capabilities provide commanders, staffs, and operators with common training systems for the employment, tasking, exploitation and dissemination of imagery.

The Joint Training Transformation Initiative (JTTI) is a CSAF and Chief of Staff of the Army initiative to improve air, space, and cyberspace power fidelity to the Battle Command Training Program (BCTP), a US Army training event for senior commanders and their staffs, as well as improving ground component fidelity to AF operational-level exercises.

This program is in Budget Activity 7 - Operational System Development because it provides RDT&E funding for major USAF Modeling and Simulation efforts.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: AFMSTT Modernization/IOS (Air Warfare Simulation (AWSIM)) <i>FY 2009 Accomplishments:</i> In FY 2009: Continued to maintain and improve the Air, Space, and Cyberspace Constructive Environment (ASCCE) and integrated with other Service models in support of major Service, Joint, and COCOM exercises, experiments, and mission rehearsals. Continued the development of USNORTHCOM/NORAD, and NORTHAF Distributed Mission Operations (DMO) capabilities. Additionally, continued development of Space DMO and Next Generation Threat Systems. <i>FY 2010 Plans:</i> In FY 2010: Continue to maintain, improve, certify, and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE) and integrated with other Service models in support of major Service, Joint, and COCOM exercises, experiments, and mission rehearsals. Continue development of USNORTHCOM/NORAD, and NORTHAF Distributed Mission Operations (DMO) capabilities. <i>FY 2011 Base Plans:</i> In FY 2011: Will continue to maintain, improve, certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE) and integrated with other Service models in support of major Service, Joint, and COCOM exercises, experiments, and mission rehearsals.	11.041	9.101	9.486	0.000	9.486

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 675135: <i>Warfighter Readiness</i>

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (4638): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Electronic Systems Center (ESC) at Hanscom AFB, MA manages the Warfighter Readiness project. ESC incrementally develops, verifies and validates models, tools, data and simulations/simulation environments. All major contracts are awarded after full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>				PROJECT 675135: <i>Warfighter Readiness</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AFMSTT Modernization/ IOS (Air Warfare Simulation (AWSIM))	Various/ Various	ESC Hanscom AFB, MA	11.041	9.101	Dec 2009	9.486	Dec 2010	0.000		9.486	Continuing	Continuing	Continuing
DMOI/Warfighter & Joint Training Integration/JTTI	Various/ Various	ESC Hanscom AFB, MA	6.411	6.729	Dec 2009	1.500	Dec 2010	0.000		1.500	Continuing	Continuing	Continuing
Subtotal			17.452	15.830		10.986		0.000		10.986			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	17.452	15.830	10.986	0.000	10.986			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207601F: *USAF Modeling and Simulation*

PROJECT

675135: *Warfighter Readiness*



**PE 27601F – USAF Modeling & Simulation
 Warfighter Readiness (Project 5135)
 Schedule**

U.S. AIR FORCE

USAF Modeling & Simulation Warfighter Readiness	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Warfighter/Joint Training Integration	[Concept activities bar]						
IOS	[Design / development bar]						
JTTI	[Design / development bar]						
ASCCE (AFMSTT)	[Integration / test]	[Integration / test]	[Integration / test]	[Integration / test]	[Integration / test]	[Integration / test]	[Integration / test]

- [Light Blue] Concept activities
- [Purple] Design / development
- [Yellow] Integration / test
- [Orange] Production / fielding
- [Green] Operations / sustainment
- [Triangle/Diamond] Key events

Integrity - Service - Excellence

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207601F: *USAF Modeling and Simulation*

PROJECT

675135: *Warfighter Readiness*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Warfighter/Joint Training Integration	1	2009	4	2011
IOS	1	2009	4	2011
JTTI	1	2009	4	2011
ASCCE (AFMSTT)	1	2009	4	2011

UNCLASSIFIED

R-1 Line Item #161

Page 25 of 25

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207605F: <i>Wargaming and Simulation Centers</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	3.752	7.018	6.020	0.000	6.020	5.897	5.767	5.842	5.928	Continuing	Continuing
672888: <i>Distributed Mission Operations Center (DMOC)</i>	3.752	7.018	6.020	0.000	6.020	5.897	5.767	5.842	5.928	Continuing	Continuing

A. Mission Description and Budget Item Justification

The United States Air Force (USAF) Distributed Mission Operations Center (DMOC) is an Air Combat Command, USAF Warfare Center, 505th Command and Control Wing (505th CCW) organization. It provides joint interoperability training and testing to geographically separated Live, Virtual, and Constructive (LVC) assets--real-world weapon systems, operator-in-the-loop (OITL), and computer-driven simulations. Responsibilities include: development and integration of Distributed Mission Operations (DMO) training and test events, networks, scenarios, and databases in support of service, joint, and coalition warfighters. Activities also include studies and analysis to support both current program planning and execution and future program planning. DMOC is the lead integrator for AF DMO and virtual contributions to the Joint National Training Capability (JNTC).

Additionally, DMOC is the lead agency for Virtual Flag (VF) exercises and the DMO Multi-Level Security (MLS) / Cross-Domain Solution (CDS) testbed.

This program is categorized as Budget Activity (BA) 7 because it provides for development of technology in support of Distributed Mission Operations.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207605F: <i>Wargaming and Simulation Centers</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	3.860	7.018	0.000	0.000	0.000
Current President's Budget	3.752	7.018	6.020	0.000	6.020
Total Adjustments	-0.108	0.000	6.020	0.000	6.020
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.108	0.000	6.020	0.000	6.020

Change Summary Explanation

- a. The FY 2010 budget of \$7.018M is a restoration in funding from a one-time FY09 reduction to pay for a higher Air Force priority (corporate Information Technology (IT) structure in another PE supporting Modeling and Simulation (M&S)). Historical R&D figures prior to FY09 were ~\$6.5M.
- b. The change between the FY 2011 President's previous and current budget is due to a reprogramming action to meet higher Air Force priorities.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207605F: <i>Wargaming and Simulation Centers</i>	PROJECT 672888: <i>Distributed Mission Operations Center (DMOC)</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
672888: <i>Distributed Mission Operations Center (DMOC)</i>	3.752	7.018	6.020	0.000	6.020	5.897	5.767	5.842	5.928	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Air Force's (AF) Distributed Mission Operations Center (DMOC), formerly known as the Theater Aerospace Command and Control Simulation Facility (TACCSF), develops and maintains a persistent tactical-level Joint Synthetic Battlespace-AF (JSB-AF) for training, mission rehearsal, testing and evaluation, range integration, experimentation and decision support for the Combat Aerospace Forces (CAF).

The DMOC is responsible for integrating DMO events, scenarios, and databases. In partnership with Electronic Systems Command (ESC), DMOC develops or acquires technologies that permit the effective integration of, and scheduling for, resources that comprise the JSB-AF. These include, but are not limited to, high-fidelity aircraft simulators and sensors, realistic threat replications, detailed weapons and weather models, and data/voice connectivity to distributed resources. DMOC develops and archives realistic theater level scenarios, and makes them available to all Department of Defense (DoD) organizations. DMOC is the lead agent for developing Air Combat Command (ACC) inter-team Distributed Mission Training (DMT) into the over-arching inter-team DMO exercises or mission rehearsals. DMOC hosts a cadre of white force controllers trained in both friendly and adversary tactics, and makes their services available to other organizations. DMOC links the tactical-level JSB-AF to operational-level and strategic-level simulations to explore and exercise the full spectrum of conflict. DMOC makes its JSB-AF available to other commands, services, and nations seeking to improve programs or processes through the use of synthetic means.

These programs are in Budget Activity 7 - Operations System Development, because they continue the development and upgrades of the Air Force's premier warfighter-in-the-loop simulation facility.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue to maintain core structure to support users conducting RDT&E, mission rehearsal, and concepts of operation development	2.593	4.528	3.848	0.000	3.848

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207605F: <i>Wargaming and Simulation Centers</i>		PROJECT 672888: <i>Distributed Mission Operations Center (DMOC)</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>								
<p>MAJOR THRUST: Program Management Office (PMO) support</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Provided PMO support in the development of NGTS capabilities to facilitate LVC interoperability between NGTS, XCITE, and live range assets. Developed ISR/BDA capabilities to enhance VF realism.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Provide PMO support in the development of NGTS core architecture to improve system performance and create sustainable baseline.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Will provide PMO support in the development of Red and Blue Air simulations and integrate ISR and CAS simulators.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>				0.459	0.532	0.527	0.000	0.527
Accomplishments/Planned Programs Subtotals				3.752	7.018	6.020	0.000	6.020

UNCLASSIFIED

R-1 Line Item #162

Page 6 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207605F: <i>Wargaming and Simulation Centers</i>	PROJECT 672888: <i>Distributed Mission Operations Center (DMOC)</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (4906): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The Distributed Mission Operations Center supports AF DMO and the Joint National Training Capability (JNTC) by awarding full and open contracts that manage the acquisition, development, testing, and integration of DMO standards, training, model and simulation, multi-level security testbed, and exercises on Air Force and Joint DMO networks.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207605F: <i>Wargaming and Simulation Centers</i>	PROJECT 672888: <i>Distributed Mission Operations Center (DMOC)</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mission Rehearsals/ Concept of Operations (Brief/Debrief and Mission Replay tools, Rapid Scenario Generation, Next Generation Threat System (NGTS) Dev, DMO "Flag" events)	C/CPFF	Lockheed Martin 705 Combat Training Squadron (CTS), Kirtland AF...	2.593	4.528	Oct 2009	3.100	Oct 2010	0.000		3.100	Continuing	Continuing	Continuing
Verify, Validate, and Accredit Core Systems (Common Battlespace Architecture, DMO Standards, MLS/CDS)	C/CPFF	Lockheed Martin 705 CTS, Kirtland AFB, NM	0.000	0.694	Oct 2009	1.215	Oct 2010	0.000		1.215	Continuing	Continuing	Continuing
Communications Connectivity (DMO Architecture, Joint National Training Capability (JNTC) Warfighter Capability, LVC and Information Operations (IO) Range Integration)	C/CPFF	Lockheed Martin 705 CTS, Kirtland AFB, NM	0.200	0.408	Oct 2009	0.428	Oct 2010	0.000		0.428	Continuing	Continuing	Continuing
Subtotal			2.793	5.630		4.743		0.000		4.743			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207605F: <i>Wargaming and Simulation Centers</i>				PROJECT 672888: <i>Distributed Mission Operations Center (DMOC)</i>					

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Technical support for systems engineering and exercise operations	C/CPAF	Scientific Research 705 CTS, Kirtland AFB, NM	0.500	0.428	Apr 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Technical support for systems engineering and exercise operations (1)	C/CPFF	L-3 Communications Government Services 705 CTS, Kirtland AFB, NM	0.000	0.428	Apr 2010	0.750	Apr 2011	0.000		0.750	Continuing	Continuing	Continuing
Subtotal			0.500	0.856		0.750		0.000		0.750			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Office Support	C/TBD	705 CTS Kirtland AFB, NM	0.459	0.532	Oct 2009	0.527	Oct 2010	0.000		0.527	Continuing	Continuing	Continuing
Subtotal			0.459	0.532		0.527		0.000		0.527			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207605F: <i>Wargaming and Simulation Centers</i>	PROJECT 672888: <i>Distributed Mission Operations Center (DMOC)</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.752	7.018	6.020	0.000	6.020			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207605F: *Wargaming and Simulation Centers*

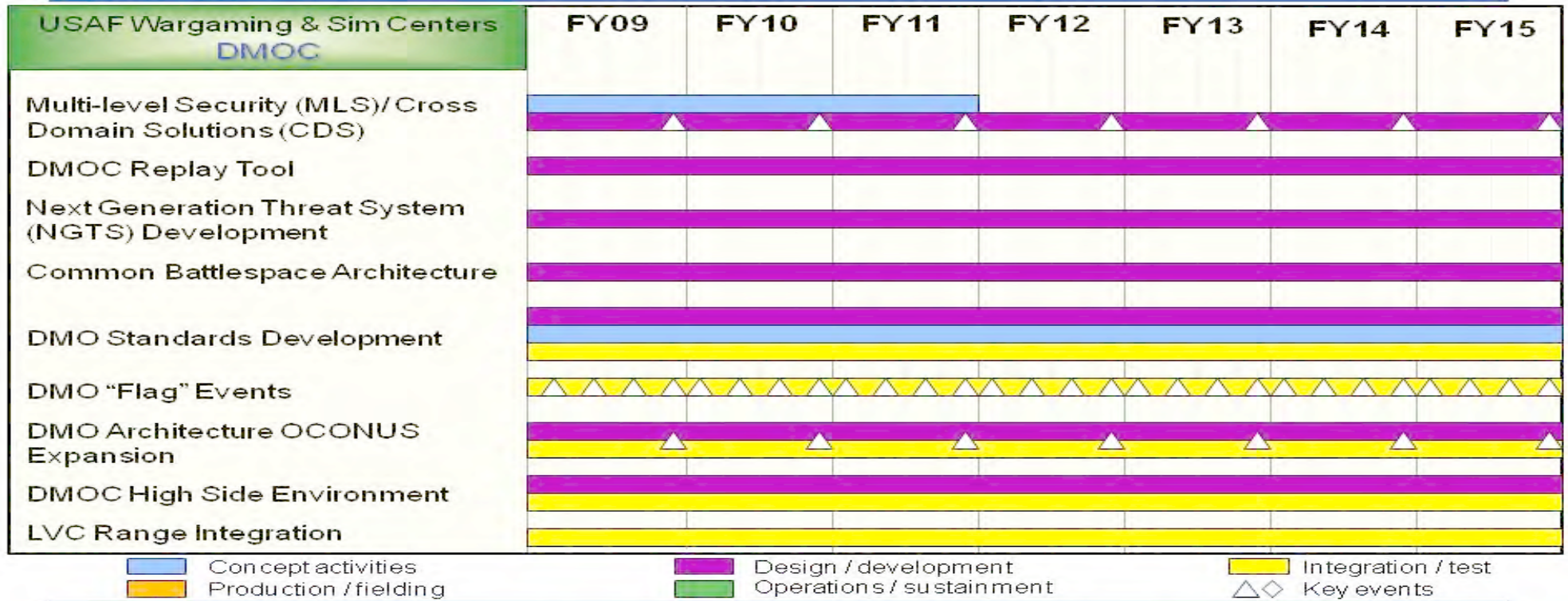
PROJECT

672888: *Distributed Mission Operations Center (DMOC)*



PE 27605 – Wargaming & Sim Centers Distributed Mission Operations Center(672888) Schedule

U.S. AIR FORCE



Integrity - Service - Excellence

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207605F: <i>Wargaming and Simulation Centers</i>	PROJECT 672888: <i>Distributed Mission Operations Center (DMOC)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Cross-Domain Solutions (CDS)/Multi-Level Security (MLS)	1	2009	4	2011
DMOC Replay Tool	1	2009	4	2011
Next Generation Threat System Dev	1	2009	4	2011
Common Battlespace Architecture	1	2009	4	2011
DMO Standards Development	1	2009	4	2011
DMO "Flag" Events	1	2009	4	2011
DMO Architecture OCONUS Expansion	1	2009	4	2011
DMOC High Side Environment	1	2009	4	2011
LVC Range Integration	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207697F: <i>Distributed Training and Exercises</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	6.918	6.740	2.863	0.000	2.863	4.757	4.437	4.057	4.091	Continuing	Continuing
675190: <i>JFCOM Wargaming</i>	6.918	6.740	2.863	0.000	2.863	4.757	4.437	4.057	4.091	0.000	0.000

A. Mission Description and Budget Item Justification

In September 03 the AF/CV directed the establishment of an 11-person AF Liaison Office (LNO) at USJFCOM with representatives from across the AF to increase participation in joint transformation activities including joint concept development and experimentation and joint Doctrine, Organization, Training, Material, Leadership & Education, Personnel & Facilities (DOTMLPF) recommendations. Air Force A5XS ensures accurate representation of air and space capabilities in joint activities, through modeling and simulation and wargaming activities.

This program is categorized in Budget Activity (BA) 7 because it supports the development efforts of operational systems.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	7.137	6.856	0.000	0.000	0.000
Current President's Budget	6.918	6.740	2.863	0.000	2.863
Total Adjustments	-0.219	-0.116	2.863	0.000	2.863
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.219	-0.116	2.863	0.000	2.863

Change Summary Explanation

FY11 funding decrease due to higher Air Force priorities.

UNCLASSIFIED

R-1 Line Item #163

Page 1 of 8

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207697F: <i>Distributed Training and Exercises</i>	PROJECT 675190: <i>JFCOM Wargaming</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675190: <i>JFCOM Wargaming</i>	6.918	6.740	2.863	0.000	2.863	4.757	4.437	4.057	4.091	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

In September 03 the AF/CV directed the establishment of an 11-person AF Liaison Office (LNO) at USJFCOM with representatives from across the AF to increase participation in joint transformation activities including joint concept development and experimentation and joint Doctrine, Organization, Training, Material, Leadership & Education, Personnel & Facilities (DOTMLPF) recommendations. Air Force A5XS ensures accurate representation of air and space capabilities in joint activities, through modeling and simulation and wargaming activities.

This program is categorized in Budget Activity (BA) 7 because it supports the development efforts of operational systems.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Develops air and space wargaming specific functionality in existing simulation and analysis tools (e.g., JWARS, THUNDER/STORM) <i>FY 2009 Accomplishments:</i> In FY 2009: Develops air and space wargaming specific functionality in existing simulation and analysis tools (e.g., JWARS, THUNDER/STORM) <i>FY 2010 Plans:</i> In FY 2010: Develops air and space wargaming specific functionality in existing simulation and analysis tools (e.g., JWARS, THUNDER/STORM)	1.710	1.500	1.400	0.000	1.400

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207697F: <i>Distributed Training and Exercises</i>	PROJECT 675190: <i>JFCOM Wargaming</i>
--	--	--

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (5313): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

All contracts will be awarded based on full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207697F: <i>Distributed Training and Exercises</i>	PROJECT 675190: <i>JFCOM Wargaming</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Various	TBD/TBD	TBD TBD	6.918	6.740	Nov 2010	2.863	Nov 2011	0.000		2.863	Continuing	Continuing	Continuing
Subtotal			6.918	6.740		2.863		0.000		2.863			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	6.918	6.740	2.863	0.000	2.863			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207697F: *Distributed Training and Exercises*

PROJECT

675190: *JFCOM Wargaming*

AF Liaison Office (LNO) to USJFCOM

FY08

FY09

FY10

FY11

	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Receipt of Funds	▲															
Adapt models for wargaming	▲															
Determine integration req					▲											
Integrate AF and joint models									▲							
Perform CRRA Analysis	▲								▲							
ID models to fill shortfalls					▲											
Replace platforms									▲							

UNCLASSIFIED

R-1 Line Item #163

Page 7 of 8

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207697F: <i>Distributed Training and Exercises</i>	PROJECT 675190: <i>JFCOM Wargaming</i>
--	--	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Adapt STORM/THUNDER and JWARS for wargaming	1	2009	4	2011
Determine other model integration/adaptation requirements	2	2009	3	2011
Perform CRRRA analysis biannually, integratin wargaming/CRAA processes.	1	2010	4	2011
Joint Concept Development and Implementation	3	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	94.589	81.577	79.111	4.443	83.554	74.172	76.036	82.732	96.123	Continuing	Continuing
673858: <i>Mission Planning Systems (MPS)</i>	92.638	79.903	37.273	0.000	37.273	33.451	34.341	36.311	38.984	Continuing	Continuing
675302: <i>Mobility Air Forces (MAF) Planning Systems</i>	1.951	1.674	1.667	4.443	6.110	2.563	4.571	9.331	14.138	Continuing	Continuing
675380: <i>Combat Air Forces (CAF) Planning Systems</i>	0.000	0.000	40.171	0.000	40.171	38.158	37.124	37.090	43.001	Continuing	Continuing

Note
 In FY 2011, Project 673858, Mission Planning Systems, efforts were transferred to PE 0208006F, Mission Planning Systems, Project 675302, Mobility Air Forces Planning Systems (previously titled Precision Aerial Delivery System) and Project 675380, Combat Air Forces Planning Systems, in order to more accurately group and reflect the products being developed within the program.

FY 2011 funding totals include \$4.443 for Overseas Contingency Operations (OCO)

A. Mission Description and Budget Item Justification

Mission planning involves the creation of a flight plan based on threats, targets, terrain, weather, aircraft performance capability, and configuration. It is an essential task that must be completed prior to any fixed or rotary wing aircraft sortie. The planner must have the ability to plan weapon, cargo, passenger, and/or fuel delivery, calculate fuel requirements, and assess the route based on known enemy threat location and type. Mission planners must be able to optimize and de-conflict flight routes with other aircraft; review, print, and brief the mission plan; and download pertinent flight information to on-board aircraft avionics.

The Mission Planning Systems (MPS) program is a collaborative program with the Army and Navy to leverage technical solutions and business practices for all Department of Defense (DoD) platforms. It provides automated mission-planning tools and support for fixed and rotary wing aircraft and guided munitions. It will replace two closed architecture legacy mission planning systems (Unix-based MPS (Unix-MPS) and the PC-based Portable Flight Planning Software (PFPS)), with a single multi-service open architecture system more commonly referred to as the Joint Mission Planning System (JMPS). MPS will compress the mission planning cycle by providing an improved integrated planning environment, reducing the time required to respond to changing situations and urgent needs such as striking time sensitive/critical targets and conducting combat search and rescue. The MPS development program will migrate a variety of Air Force aircraft, weapons, and airdrop payload systems from legacy mission planners to MPS. These systems include the A-10, B-1B, C-5, C-17, C-130, E-3, E-8, F-15, F-16, F-22A, KC-10, KC-135,

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>
--	--

RC-135, HH-60, and their associated weapons (e.g. Small Diameter Bomb (SDB), Joint Direct Attack Munitions (JDAM), Joint Air-to-Surface Standoff Munitions (JASSM), etc...) and airdrop payloads. In addition, basic MPS products have the potential to support all DoD fixed-wing and rotary-wing aircraft and will be shared with other AF programs as well as the Army and Navy. MPS will deliver significant benefits to command and control performance by enhancing information superiority for the warfighter and by providing unique capabilities in support of both precision engagement and dominant maneuver.

Additionally, elements of Mission Planning Systems will be utilized to continue the development of a Joint Precision Airdrop System (JPADS) in conjunction with the Army. The JPADS System of Systems (SoS) capability provides a planning and execution capability for DoD airdrop requirements. It is the primary airdrop mission planning and execution system when the mission profile or surface-to-air threat assessment warrants a high-altitude and/or standoff precision delivery. JPADS enables high-altitude, precise airdrop delivery to forward ground forces, mitigating surface-to-air threats, reducing risk of Improvised Explosive Device (IED) & insurgent attack on ground convoys. JPADS allows the warfighter to consider weather, terrain, aircraft capabilities, threat, etc...to accurately deliver payload.

REASON OCO FUNDS ARE REQUIRED: Joint Precision Airdrop System (JPADS) prototype hardware and software was rapidly fielded for Operation Enduring Freedom (OEF). The prototype software for the weather component now needs to be re-factored to integrate into the AF C-130 and C-17 mission planning environment and provide extensibility and maintainability to meet increased ground force demands for airdrop missions in OEF. Airdrop requirements in OEF doubled in 2008 and are expected to continue at this pace (for the foreseeable future). Weather data modeling and calculations in JPADS software are at the very essence of the AF capability to expand airdrop and provide improved delivery accuracy in support of increased numbers of ground forces in OEF. OEF uniquely requires the AF to provide greater airdrop delivery accuracy because of the rough, varied high-altitude terrain and associated small drop zones. The key to improving airdrop accuracy is better weather data collection and processing in the computed air release point calculation in JPADS software.

The Mission Planning Systems program is in Budget Activity 7 because it provides for development of technologies and capabilities to support and ultimately replace the currently fielded PFPS and Unix-MPS systems.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	97.296	91.995	0.000	0.000	0.000
Current President's Budget	94.589	81.577	79.111	4.443	83.554
Total Adjustments	-2.707	-10.418	79.111	4.443	83.554
• Congressional General Reductions		-10.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-2.707	-0.418	79.111	4.443	83.554

Change Summary Explanation

FY 2010 congressional reduction for MPS Increment IV delays on Tanker, Airlift, and Special Mission (TASM) development

UNCLASSIFIED

R-1 Line Item #164

Page 3 of 25

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>				PROJECT 673858: <i>Mission Planning Systems (MPS)</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
673858: <i>Mission Planning Systems (MPS)</i>	92.638	79.903	37.273	0.000	37.273	33.451	34.341	36.311	38.984	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Mission planning involves the creation of a flight plan based on threats, targets, terrain, weather, aircraft performance capability and configuration. It is an essential task that must be completed prior to any fixed or rotary wing aircraft sortie. The planner must have the ability to plan weapon, cargo, passenger, and/or fuel delivery, calculate fuel requirement and assess the route based on known enemy threat location and type. Mission planners must be able to optimize and de-conflict flight routes with other aircraft; review, print and brief the plan; and download pertinent flight information to on-board aircraft avionics.

This project provides for the continuous improvement of mission planning software capabilities that cut across all platforms and systems. It includes all FY10 and prior development activities for migrating selected CAF and MAF platforms to MPS. It also allows for the investigation of new technologies and products that have the potential for improving mission planning systems. This includes the continuous upgrading of the MPS framework. The framework is the underlying baseline for all mission planning systems. It will require continuous upgrades to: 1) reduce timelines for route planning; 2) transmit near real-time intelligence data to the platforms; 3) increase the accuracy of the mapping products; 4) provide a Windows-based, COTS-based, user friendly product; and 5) retain compatibility with platform changes to avionics and operational flight programs. Development and modernization activities within this project are as follows:

- a. MPS Increment III - completes all FY10 and prior year development activities to migrate selected CAF and MAF platforms to the MPS Increment III planning systems capability. This includes the initial migration of all designated Increment III platforms.
- b. MPS Increment IV - continues all FY10 and prior year development activities to migrate selected CAF and MAF platforms to the MPS Increment IV planning systems capability. This includes the initial migration of all designated Increment IV platforms. FY2011 and outyear development activities for Increment IV will be completed as part of respective projects for CAF and MAF planning systems.
- c. Modernization - continues the modernization of overarching technologies (including the framework) to support development of MPEs for various CAF and MAF platforms.
- d. Integration, Test and Certification - continues all MPS-related integration, test, and certification activities for all CAF and MAF platforms.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>	PROJECT 673858: <i>Mission Planning Systems (MPS)</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A						
<p>MAJOR THRUST: Continues Test, Training, and Certification (TT&C) activities to evaluate and ensure the operational performance of all newly developed and modernized MPS software and hardware.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Conduct and support formal Government testing for MPS Increment III, MPS Increment IV, and MPS modernization efforts.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continue formal Government testing of software and other development efforts for MPS Increment III, MPS Increment IV, and MPS modernization.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continue formal Government testing of software and other development efforts for MPS Increment IV and MPS modernization.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>		7.682	8.777	9.412	0.000	9.412
<p>MAJOR THRUST: Continues all program management office technical and administrative activities and operations necessary to support development and fielding of all MPS capabilities.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Provide program management support for MPS Increment III, MPS Increment IV and , MPS modernization efforts.</p>		13.647	13.693	10.404	0.000	10.404

UNCLASSIFIED

R-1 Line Item #164

Page 7 of 25

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>	PROJECT 673858: <i>Mission Planning Systems (MPS)</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Provide program management support for MPS Increment III, MPS Increment IV and , MPS modernization efforts.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Provide program management support for MPS Increment IV and MPS modernization efforts.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>					
Accomplishments/Planned Programs Subtotals	92.638	79.903	37.273	0.000	37.273

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (5694): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Mission Planning Systems utilizes an evolutionary acquisition approach to develop and deliver an interoperable, network-centric, mission planning system tailored for numerous Air Force platforms using competition and multiple contract vehicles.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>				PROJECT 673858: <i>Mission Planning Systems (MPS)</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mission Planning Enterprise Contract	C/Variou	Various Various	48.589	18.961	Nov 2009	1.826	Nov 2010	0.000		1.826	0.000	69.376	Continuing
Mission Planning Enterprise Contract II	C/Variou	Various Various	0.427	16.290	Apr 2010	1.332	Nov 2010	0.000		1.332	Continuing	Continuing	0.000
Systems Engineering and Integration	C/Variou	Various Various	13.618	14.051	Nov 2009	14.300	Nov 2010	0.000		14.300	Continuing	Continuing	Continuing
MPS Modernization	C/Variou	Various Various	8.675	8.131	Nov 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			71.309	57.433		17.458		0.000		17.458			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Software Engineering Institute (SEI)	TM	SEI Pittsburgh, PA	0.300	0.300	Nov 2009	0.300	Nov 2010	0.000		0.300	Continuing	Continuing	Continuing
Tecolote	TM	Tecolote Inc Bedford, MA	0.742	0.560	Nov 2009	0.577	Nov 2010	0.000		0.577	Continuing	Continuing	Continuing
Subtotal			1.042	0.860		0.877		0.000		0.877			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>	PROJECT 673858: <i>Mission Planning Systems (MPS)</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
46TW	PO	46TW Eglin AFB, FL	6.463	7.543	Nov 2009	8.140	Nov 2010	0.000		8.140	Continuing	Continuing	Continuing
JITC	TBD/TBD	JITC Indian Head, MO	0.080	0.061	Jan 2010	0.064	Jan 2011	0.000		0.064	Continuing	Continuing	Continuing
Type I Training	TBD/TBD	Ogden Air Logistics Center Hill AFB, UT	1.139	1.173	Nov 2009	1.208	Nov 2010	0.000		1.208	Continuing	Continuing	Continuing
Subtotal			7.682	8.777		9.412		0.000		9.412			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
FFRDC Support	FFRDC	Mitre Corp Bedford, MA	5.147	4.924	Nov 2009	4.870	Nov 2010	0.000		4.870	Continuing	Continuing	Continuing
Program Office Support	Various/ Various	Various Various	7.458	7.909	Nov 2009	4.656	Nov 2010	0.000		4.656	Continuing	Continuing	Continuing
Subtotal			12.605	12.833		9.526		0.000		9.526			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>	PROJECT 673858: <i>Mission Planning Systems (MPS)</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	92.638	79.903	37.273	0.000	37.273			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0208006F: Mission Planning Systems

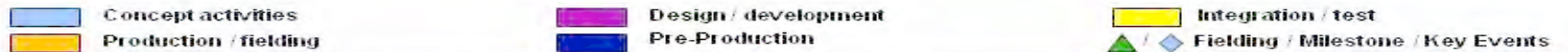
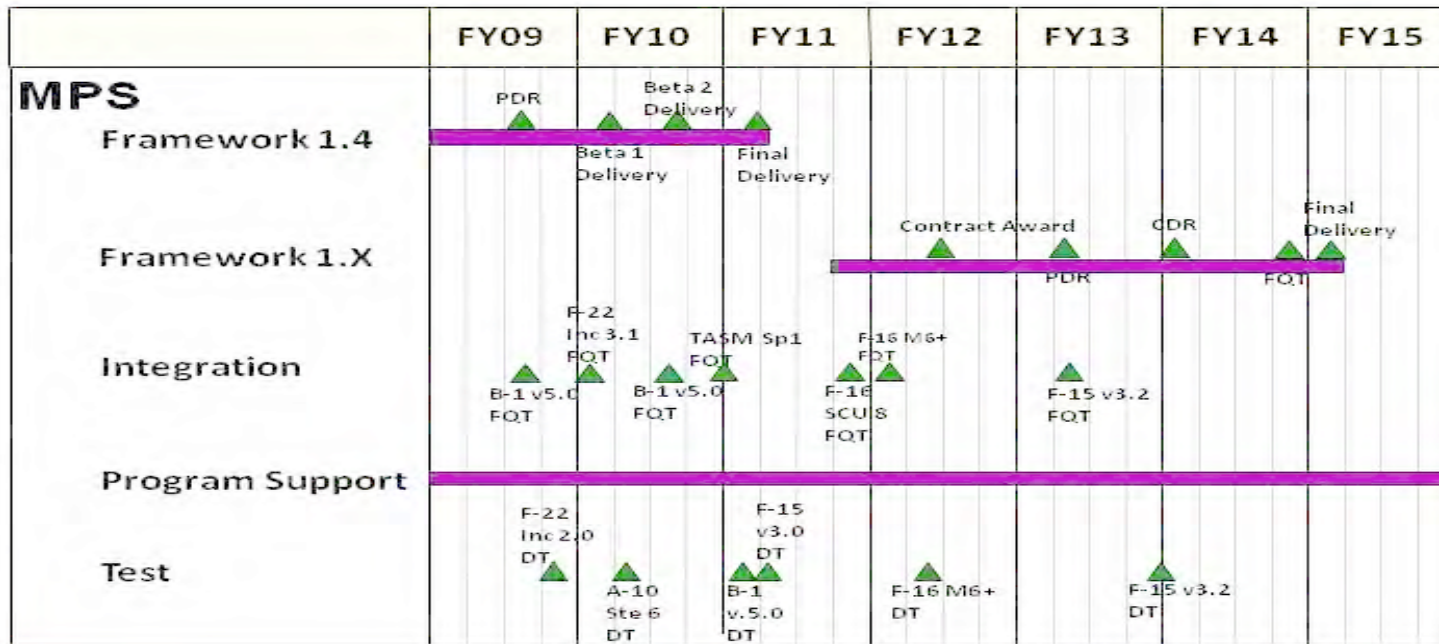
PROJECT

673858: Mission Planning Systems (MPS)

As of: 28 Dec 2009 1400



Mission Planning Systems Schedule



Integrity - Service - Excellence

UNCLASSIFIED

R-1 Line Item #164

Page 12 of 25

Volume 3 - 684

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>	PROJECT 673858: <i>Mission Planning Systems (MPS)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Framework 1.4 Preliminary Design Review (PDR)	3	2009	3	2009
Framework 1.4 Beta 1 Software Release	1	2010	1	2010
Framework 1.4 Beta 2 Software Release	3	2010	3	2010
Framework 1.4 Final Software Delivery	1	2011	1	2011
Intergration/F-22 Inc 3.1 Final Qualification Test	1	2010	1	2010
Intergration/B-1 Rel 5.0 Final Qualification Test	3	2010	3	2010
Intergration/TASM Spl 1 Final Qualification Test	4	2010	4	2010
Intergration/F-16 SCU 8 Final Qualification Test	4	2011	4	2011
Intergration/F-22 Inc 2.0 Development Test & Evaluation	4	2009	4	2009
Test/A-10 Suite 6 Developmental Test & Evaluation	2	2010	2	2010
Test/B-1 5.0 Developmental Test & Evaluation	1	2011	1	2011
Test/F-15 v 3.0 Developmental Test & Evaluation	2	2011	2	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>	PROJECT 675302: <i>Mobility Air Forces (MAF) Planning Systems</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675302: <i>Mobility Air Forces (MAF) Planning Systems</i>	1.951	1.674	1.667	4.443	6.110	2.563	4.571	9.331	14.138	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

FY11 funding totals include \$4.443M for Overseas Contingency Operations.

A. Mission Description and Budget Item Justification

Mission planning involves the creation of a flight plan based on threats, targets, terrain, weather, aircraft performance capability and configuration. It is an essential task that must be completed prior to any fixed or rotary wing aircraft sortie. The planner must have the ability to plan weapon, cargo, passenger, and/or fuel delivery, calculate fuel requirement and assess the route based on known enemy threat location and type. Mission planners must be able to optimize and de-conflict flight routes with other aircraft; review, print and brief the plan; and download pertinent flight information to on-board aircraft avionics.

This project develops mission planning systems and related components for Mobility Air Forces (MAF) platforms. It completes (and then stops) development of a Mission Planning Environment (MPE) for a limited number of platforms that comprise the Tanker, Airlift and Special Mission (TASM) suite of aircraft (more commonly known as TASM Spiral 1). It will also modernize the mission planning software required for MAF mission planning, including versions required to keep pace with software and hardware upgrades to Spiral 1 aircraft (e.g. E-3, E-8) and common components such as Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) and Air Refueling. The initial development and modernization efforts are as follows:

Additionally, this project continues the development of a Joint Precision Airdrop System (JPADS) in conjunction with the Army. The JPADS System of Systems (SoS) capability provides a planning and execution capability for DoD airdrop requirements. It is the primary airdrop mission planning and execution system when the mission profile or surface-to-air threat assessment warrants a high-altitude and/or standoff precision delivery. JPADS enables high-altitude, precise airdrop delivery to forward ground forces, mitigating surface-to-air threats, reducing risk of Improvised Explosive Device (IED), and insurgent attack on ground convoys. JPADS allows the warfighter to consider weather, terrain, aircraft capabilities, threat, etc... to accurately deliver payload. The initial development and modernization efforts are as follows:

a. MPS Increment IV - completes development of an MPE for the migration of a limited number of TASM aircraft [e.g. E-3, E-8, RC-135, HC-130]. It also upgrades several Common Components capabilities (e.g. weather) that support more than one platform.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>	PROJECT 675302: <i>Mobility Air Forces (MAF) Planning Systems</i>
--	--	---

b. MAF MPE Modernization - modifies MAF Mission Planning Environments (MPEs) developed and deployed during previous mission planning increments. The modernization activities will provide new and improved mission planning capabilities for individual MPEs as required to meet evolving Operational Flight Program (OFP) requirements, such as avionics upgrades, communication systems, etc... for various MAF platforms. The modernization effort will also complete a variety of studies and analyses to evaluate emerging Information Technology (IT) infrastructure technologies in support of future system upgrades.

c. Joint Precision Airdrop System (JPADS) - continues development of software required to provide a precision airdrop capability for AF and other services (i.e. the Army).

RATIONAL FOR OVERSEAS CONTINGENCY OPERATIONS (OCO) FUNDING: In FY11 OCO funds are required to refactor prototype software for the Joint Precision Airdrop System (JPADS) weather component. JPADS prototype hardware and software was rapidly fielded to provide an immediate capability for OEF. The prototype weather software now needs to be re-factored to integrate into the AF C-130 and C-17 mission planning environment and provide extensibility and maintainability to meet increased ground force demands for airdrop missions in OEF. Airdrop requirements in OEF doubled in 2008 and are expected to nearly double again in 2009 and weather data modeling and weather calculations in JPADS software are at the very essence of the AF capability to expand airdrop and provide improved delivery accuracy in support of increased numbers of ground forces in OEF. OEF uniquely requires the AF to provide greater airdrop delivery accuracy because of the rough, varied high-altitude terrain and associated small drop zones and the key to improving accuracy is better weather data collection and processing in the computed air release point calculation in JPADS software.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue development of a Joint Precision Airdrop System (JPADS) capability for precise, high altitude delivery of material to forward ground forces. <i>FY 2009 Accomplishments:</i> In FY 2009: Continued development, integration and testing of JPADS phase 1 software. Also conducted preliminary requirements analysis to support development of JPADS Phase 2 (Portable Flight Planning Software Consolidated Airdrop Tool) and JPADS Phase 3 (Weather Refactoring) software.	1.951	1.674	1.667	4.443	6.110

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>	PROJECT 675302: <i>Mobility Air Forces (MAF) Planning Systems</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Complete development, integration and testing of JPADS Phase 2 software. Completed requirements analysis of JPADS Phase 3 software and initiate preliminary studies and analyses for JPADS Phase 4 (MPS Consolidated Airdrop Tool).</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continue development of JPADS Phase 3 and Phase 4 software</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 (OCO): Complete re-factoring of JPADS prototype weather software.</p>					
Accomplishments/Planned Programs Subtotals	1.951	1.674	1.667	4.443	6.110

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0208006F: <i>Mission Planning Systems, (OPAF)</i>	16.533	16.589	11.680	0.000	11.680	9.889	8.503	8.542	9.694	0.000	0.000

D. Acquisition Strategy

MPS MAF Planning Systems utilizes an evolutionary acquisition approach to develop and deliver common, interoperable, net-centric systems for preflight mission planning and precision and non-precision airdrops using a variety of contract vehicles.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>				PROJECT 675302: <i>Mobility Air Forces (MAF) Planning Systems</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mission Planning Enterprise Contract	C/Variou	Various Various	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Mission Planning Enterprise Contract II	C/Variou	Various Various	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
JPADS Software Development Contract	TM	Tyrbin Ft Walton Beach, FL	1.951	1.674	Nov 2009	1.667	Nov 2010	4.443	Nov 2010	6.110	Continuing	Continuing	0.000
Subtotal			1.951	1.674		1.667		4.443		6.110			

Remarks

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		1.951	1.674		1.667		4.443	6.110			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0208006F: *Mission Planning Systems*

PROJECT

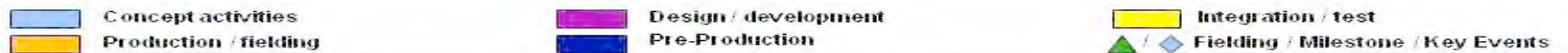
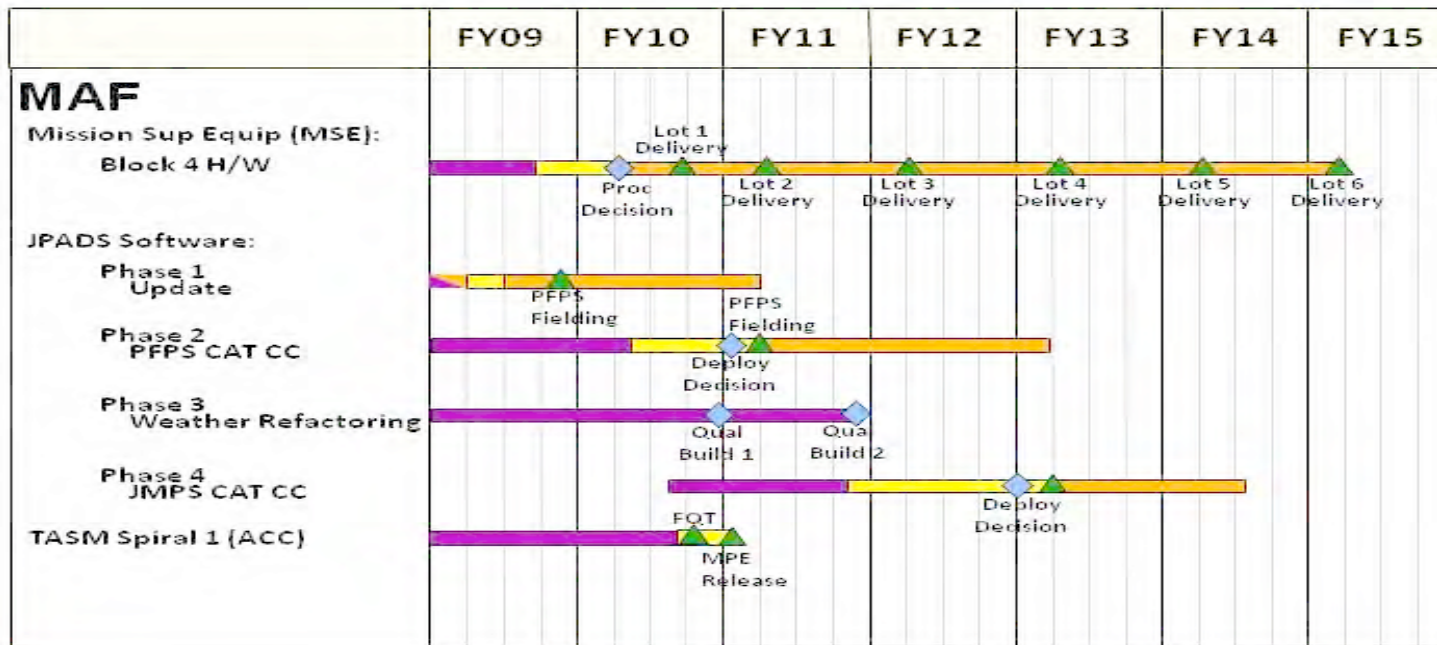
675302: *Mobility Air Forces (MAF) Planning Systems*



As of: 28 Dec 2009 1400



Mobility Air Forces (MAF) Planning Systems



Integrity - Service - Excellence

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>	PROJECT 675302: <i>Mobility Air Forces (MAF) Planning Systems</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
JPADS Mission Support Equipment (MSE) Blk 4 Design & Development	1	2009	3	2009
JPADS Mission Support Equipment (MSE) Blk 4 Testing	3	2009	1	2010
MPS Phase 1/Initial Interface with PFPS Fielding	4	2009	4	2009
JPADS Mission Support Equipment (MSE) Blk 4 Procurement Decision	2	2010	2	2010
MPS Phase 2 Consolidated Air Drop Tool for PFPS Fielding	4	2010	4	2010
MPS Phase 3 Weather Capability Refactoring Qual Build I	4	2010	4	2010
MPS Phase 3 Weather Capability Refactoring Qual Build II	4	2011	4	2011
TASM Spiral 1 FQT	4	2010	4	2010

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>				PROJECT 675380: <i>Combat Air Forces (CAF) Planning Systems</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675380: <i>Combat Air Forces (CAF) Planning Systems</i>	0.000	0.000	40.171	0.000	40.171	38.158	37.124	37.090	43.001	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Mission planning involves the creation of a flight plan based on threats, targets, terrain, weather, aircraft performance capability and configuration. It is an essential task that must be completed prior to any fixed or rotary wing aircraft sortie. The planner must have the ability to plan weapon, cargo, passenger, and/or fuel delivery, calculate fuel requirement and assess the route based on known enemy threat location and type. Mission planners must be able to optimize and de-conflict flight routes with other aircraft; review, print and brief the plan; and download pertinent flight information to on-board aircraft avionics.

This project focuses on developing mission planning systems for the Combat Air Forces (CAF), including the initial transition of the HH-60 aircraft from the legacy PFPS to MPS. It will also modernize the Mission Planning Systems (MPS) software required for CAF mission planning, including versions required to keep pace with upgrades to the A-10, B-1B, F-15, F-16, F-22A and HH-60 aircraft as well as common components such as the Precision Guided Munitions Planning System (PGMPS) and the Joint Air-to-Surface Standoff Missile (JASSM). Mission Planning CAF increments and modernization efforts are as follows:

- a. MPS Increment III - continues the initial migration of additional aircraft platforms (A-10, B-1B, F-16, F-22 and RC-135) and weapons (e.g. JASSM) to MPS. It also upgrades the framework and develops new common components (e.g. Weather, Electronic Warfare, Airdrop, and Precision Guided Munitions) and unique platform capabilities for selected aircraft and weapons.
- b. MPS Increment IV - continues the MPS migration effort by migrating the HH-60. It also upgrades several Common Components. In addition, Increment IV updates platforms that previously transitioned to MPS (e.g. F-15, F-16, A-10, B-1B, and F-22A) to provide capabilities IAW the Increment IV Capability Development Document (CDD).
- c. CAF MPE Modernization - Will modernize CAF Mission Planning Environments (MPEs) that were developed and deployed in Increments II-IV. The modernization activities will provide new and improved mission planning capabilities for individual MPEs as required to meet evolving Operational Flight Program (OFP) requirements (such as new weapons, avionics upgrades, communication systems, etc...) for the various affected platforms. The modernization effort will also complete a variety of studies and analyses to evaluate emerging Information Technology (IT) infrastructure technologies in support of future system upgrades.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>	PROJECT 675380: <i>Combat Air Forces (CAF) Planning Systems</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: Continues development of MPS Increment IV Mission Planning Environments (MPE) for CAF platforms (e.g. F-15, F-16, F-22, B-1B)</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: N/A [prior year development efforts are in project 673858]</p> <p><i>FY 2010 Plans:</i> In FY 2010: N/A [prior year development efforts are in project 673858]</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continues development, integration and test of a Mission Planning Environment to support the initial transition of the HH-60 aircraft from the legacy mission planning capability to MPS. Additionally, will initiate development of MPE upgrades for the A-10 and F-22A aircraft</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 (OCO): N/A</p>		0.000	0.000	8.802	0.000	8.802
<p>MAJOR THRUST: Continues the modernization of CAF MPEs to plan the use of capabilities being developed in the Operational Flight Programs (OFPs) of multiple CAF platforms.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: N/A [prior year development efforts are in project 673858]</p> <p><i>FY 2010 Plans:</i> In FY2010: N/A [prior year development efforts are in project 673858]</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continues the modernization of previously fielded mission planning software environments for the B-1B, F-15, F-16, and F-22A.</p>		0.000	0.000	31.369	0.000	31.369

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>	PROJECT 675380: <i>Combat Air Forces (CAF) Planning Systems</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> In FY 2011 (OCO): N/A					
Accomplishments/Planned Programs Subtotals	0.000	0.000	40.171	0.000	40.171

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0208006F: <i>Mission Planning Systems, (OPAF)</i>	14.405	11.424	9.426	0.000	9.426	9.145	8.858	9.075	10.305	0.000	0.000

D. Acquisition Strategy

MPS Combat Air Forces (CAF) Planning Systems utilizes an evolutionary acquisition approach to develop and deliver an interoperable, network-centric, mission planning system tailored for numerous Air Force platforms using competition and multiple contract vehicles.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>				PROJECT 675380: <i>Combat Air Forces (CAF) Planning Systems</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mission Planning Enterprise Contract II	C/Various	Various Various	0.000	0.000		30.785	Nov 2010	0.000		30.785	Continuing	Continuing	Continuing
MPS Modernization	C/Various	Various Various	0.000	0.000		9.386	Nov 2010	0.000		9.386	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		40.171		0.000		40.171			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		40.171		0.000		40.171			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0208006F: Mission Planning Systems

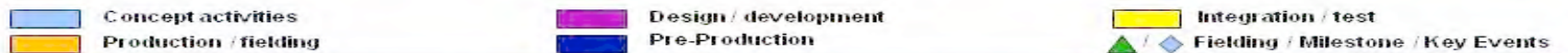
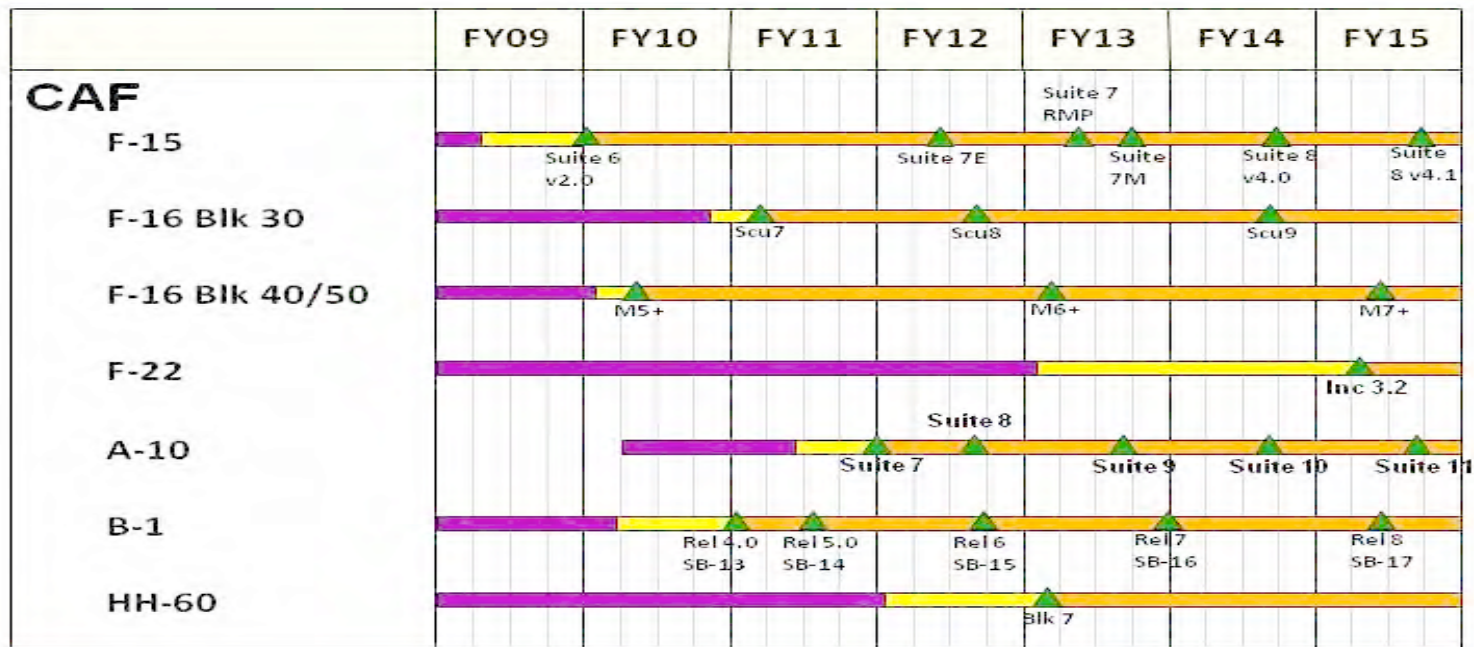
PROJECT

675380: Combat Air Forces (CAF) Planning Systems

As of: 28 Dec 2009 1400



Combat Air Forces (CAF) Planning Systems



Integrity - Service - Excellence

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>	PROJECT 675380: <i>Combat Air Forces (CAF) Planning Systems</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
F-15 Suite 6 Fielding	4	2009	4	2009
F-16 Blk 40/45 Fielding	2	2010	2	2010
F-16 Blk 30 Fielding	1	2011	1	2011
B-1 SB-13 & SB-14 Fielding	1	2011	3	2011
A-10 Suite 7 Fielding	4	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208021F: <i>Information Warfare Support</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	11.780	13.779	2.294	0.000	2.294	2.330	2.365	2.401	2.436	Continuing	Continuing
670374: <i>Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt</i>	11.780	13.779	2.294	0.000	2.294	2.330	2.365	2.401	2.436	Continuing	Continuing

Note

In FY 2011, Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt efforts transferred to PE 0310400F, Space Superiority Intelligence for proper execution in AFSPC.

A. Mission Description and Budget Item Justification

This Program Element funds research and development of information operations (IO) and intelligence capabilities required to execute counterspace and information operations in support of combatant commanders. Programs that are supported include the Information Warfare Planning Capability (IWPC), and Counterspace Intelligence Support.

IWPC is a full-spectrum, offensive and defensive, planning capability. IWPC is an Air and Space Operations Center (AOC) weapon system component which will enable operators to develop strategic courses of action for the Joint Forces Air Component Commander (JFACC); create Air Operations Directives (AODs) and Joint Air Operations Plans (JAOPs); and nominate IO "targets" for inclusion into the Master Air Attack Plan and the Joint Integrated Prioritized Target List (JIPTL). This project funds the development and upgrades, testing and evaluation, and installation and training of an evolving suite of interoperable planning and decision support capabilities comprised of software, hardware, and communications products. This project will identify and implement an open, scalable system architecture that will accommodate growth as the virtual world grows and cyber operations change. The project builds functional software modules that are designed to be interoperable with C2 systems such as the Theater Battle Management Core System (TBMCS) and other AOC tools.

The Counterspace effort provides intelligence support for key find, fix, track, target, engage, and assess (F2T2EA) requirements supporting counterspace activities and also performs developmental intelligence collection to support new capability acquisition and development. This project funds transportable intelligence collection and analysis capabilities that are modular (plug-and-play), and can keep pace with technological advances and emerging threats; intelligence support systems supporting Space Situational Awareness activities that provide the requisite current and predictive knowledge of space events and threat conditions; and, intelligence support to Space Protection Programs by providing architectural survivability analysis of critical mission assets for mission assurance. It also supports phased threat system Analysis and Studies (A&S), test support, lab equipment, and Material Acquisition and Exploitation (MAE) for new system development and vulnerability/

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208021F: <i>Information Warfare Support</i>
--	---

susceptibility assessments to support tactics, techniques and procedures (TTP) development, and future threat technology studies necessary for mission area success, the achievement of space superiority, and to preserve the US space advantage across all domains.

This PE funds development and continued research to identify existing military and commercial efforts which can satisfy unfulfilled operational requirements for IO planning and integration. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development, because it studies, develops, and fields IO tools.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	11.780	12.482	0.000	0.000	0.000
Current President's Budget	11.780	13.779	2.294	0.000	2.294
Total Adjustments	0.000	1.297	2.294	0.000	2.294
• Congressional General Reductions		-0.303			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	1.600			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	2.294	0.000	2.294

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 670374: *Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt*

Congressional Add: *In FY 2009: N/A*

Congressional Add Subtotals for Project: 670374

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	0.000	1.600
	0.000	1.600
	0.000	1.600

Change Summary Explanation

Beginning in FY11, RDT&E in support of Intel Support to Counterspace is moved to PE 0301400F. The FY10 increase is due to \$1.6M congressional add.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208021F: <i>Information Warfare Support</i>	PROJECT 670374: <i>Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
670374: <i>Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt</i>	11.780	13.779	2.294	0.000	2.294	2.330	2.365	2.401	2.436	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2011, Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt efforts transferred to PE 0301400F, Space Superiority Intelligence for proper execution in AFSPC.

A. Mission Description and Budget Item Justification

The Information Warfare Planning Capability (IWPC) is a full-spectrum, offensive and defensive, planning capability. IWPC is an Air and Space Operations Center (AOC) weapon system component which will enable operators to develop strategic courses of action for the Joint Forces Air Component Commander (JFACC); create Air Operations Directives (AOPs) and Joint Air Operator Plans (JAOPs); and, nominate IO "targets" for inclusion into the Master Air Attack Plan and the Joint Integrated Prioritized Target List (JIPTL).

This project funds the development of an evolving suite of interoperable planning and decision support capabilities comprised of software, hardware, and communications products. This project will identify and implement an open, scalable system architecture that will accommodate growth as the virtual world grows and cyber operations change. The project builds functional software modules that are designed to be interoperable with baseline C2 systems such as the Theater Battle Management Control System (TBMCS) and other AOC tools. IWPC will participate in the Joint Expeditionary Force Experiment (JEFX) as part of the overall IWPC software development and integration effort into the AOC.

The Counterspace effort provides intelligence support for key find, fix, track, target, engage, and assess (F2T2EA) requirements supporting counterspace activities and also performs developmental intelligence collection to support new capability acquisition and development. This project funds transportable intelligence collection and analysis capabilities that are modular (plug-and-play), and can keep pace with technological advances and emerging threats. It also supports phased threat system analysis and studies (A&S), test support, lab equipment, and Material Acquisition and Exploitation (MAE) for system development and vulnerability/susceptibility assessments to support tactics, techniques and procedures (TTP) development, and future threat technology studies necessary for mission area success and achievement of space superiority.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208021F: <i>Information Warfare Support</i>	PROJECT 670374: <i>Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt</i>
--	---	--

This project is in Budget Activity 7, Operational System Development, because it studies, develops, and demonstrates IO prototypes. It identifies existing military and commercial research and development efforts which can satisfy unfulfilled operational requirements for an IO planning and integration tool.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: IWPC Installation/Training/Upgrades <i>FY 2009 Accomplishments:</i> In FY 2009: This effort allowed the program office to maintain the IWPC program to meet continued warfighter requirements. This project funded the upgrades, installation, and training of the IWPC suite of planning and decision support tools. Software and hardware updates are necessary to keep up with existing technology and maintain interoperability with external programs. These funds also include required testing and contract support. <i>FY 2010 Plans:</i> In FY 2010: This funding continues the maintaining of the IWPC program to meet continued warfighter requirements. This project funds the upgrades, installation, and training of the IWPC suite of planning and decision support tools. Software and hardware updates are necessary to keep up with existing technology and maintain interoperability with external programs. These funds also include required testing and contract support. <i>FY 2011 Base Plans:</i> In FY 2011: This funding continues the maintaining of the IWPC program to meet continued warfighter requirements. This project funds the upgrades, installation, and training of the IWPC suite of planning and decision support tools. Software and hardware updates are necessary to keep up with existing technology and maintain interoperability with external programs. These funds also include required testing and contract support. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.	2.317	2.190	2.294	0.000	2.294

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208021F: <i>Information Warfare Support</i>	PROJECT 670374: <i>Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
<i>FY 2010 Plans:</i> In FY 2011: N/A		
Congressional Adds Subtotals	0.000	1.600

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0208021F: <i>Information Warfare Support, (OPAF)</i>	7.691	6.498	9.143	0.000	9.143	8.688	9.325	9.290	9.595	0.000	0.000
• PE 0208021F (1): <i>Information Warfare Support, (O&M)</i>	72.943	66.868	66.187	0.000	66.187	66.336	71.352	72.062	75.399	0.000	0.000

D. Acquisition Strategy

IWPC fielding will continue throughout FY10. Future upgrades will be delivered as maintenance releases with minor increases in capability.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208021F: <i>Information Warfare Support</i>	PROJECT 670374: <i>Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
IWPC Prime Contract	SS/FFP	General Dynamics San Antonio, TX	1.614	1.327	Oct 2009	1.415	Oct 2010	0.000		1.415	Continuing	Continuing	Continuing
Counterspace and R&D Intelligence Support	Various	Various Lackland AFB, TX	2.271	2.526	Nov 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing
Architecture Upgrade Support to SSA,SSP & Counterspace	Various	Various Lackland AFB, TX	1.611	1.573	Nov 2009	0.000		0.000		0.000	Continuing	Continuing	0.000
Data Analysis and Product Development for R&D	Various	Various Lackland AFB, TX	5.094	5.434	Nov 2009	0.000		0.000		0.000	Continuing	Continuing	0.000
Deployment Support for Testing and Data Collection	Various	Various Lackland AFB, TX	0.487	0.456	Nov 2009	0.000		0.000		0.000	Continuing	Continuing	0.000
Subtotal			11.077	11.316		1.415		0.000		1.415			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208021F: <i>Information Warfare Support</i>	PROJECT 670374: <i>Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt</i>
--	---	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
IWPC 46 Det 2 Test Support	TM	46th TS Eglin AFB, FL	0.130	0.222	Apr 2010	0.226	Apr 2011	0.000		0.226	Continuing	Continuing	Continuing
IWPC 605th Test Support	TM	605th Eglin AFB, FL	0.064	0.222	May 2010	0.226	May 2011	0.000		0.226	0.000	0.512	0.000
Subtotal			0.194	0.444		0.452		0.000		0.452			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Acquisition Support	TM	Various San Antonio, TX	0.187	0.220	Nov 2009	0.225	Nov 2010	0.000		0.225	Continuing	Continuing	0.000
Engineering Support	FFRDC	MITRE San Antonio, TX	0.229	0.147	Oct 2009	0.150	Oct 2010	0.000		0.150	Continuing	Continuing	0.000
Operating Costs	TBD/TBD	OL-AA 950 ELSG San Antonio, TX	0.093	0.052	Oct 2009	0.052	Oct 2010	0.000		0.052	Continuing	Continuing	0.000
Congressional Add	TBD/TBD	TBD TBD	0.000	1.600	Feb 2010	0.000		0.000		0.000	Continuing	Continuing	0.000
Subtotal			0.509	2.019		0.427		0.000		0.427			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208021F: <i>Information Warfare Support</i>	PROJECT 670374: <i>Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt</i>
--	---	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	11.780	13.779	2.294	0.000	2.294			

Remarks
 Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

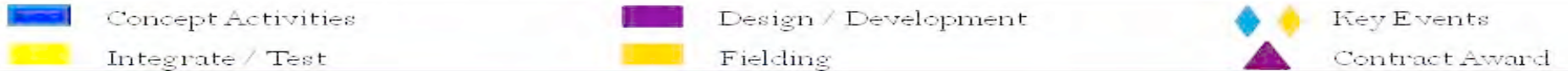
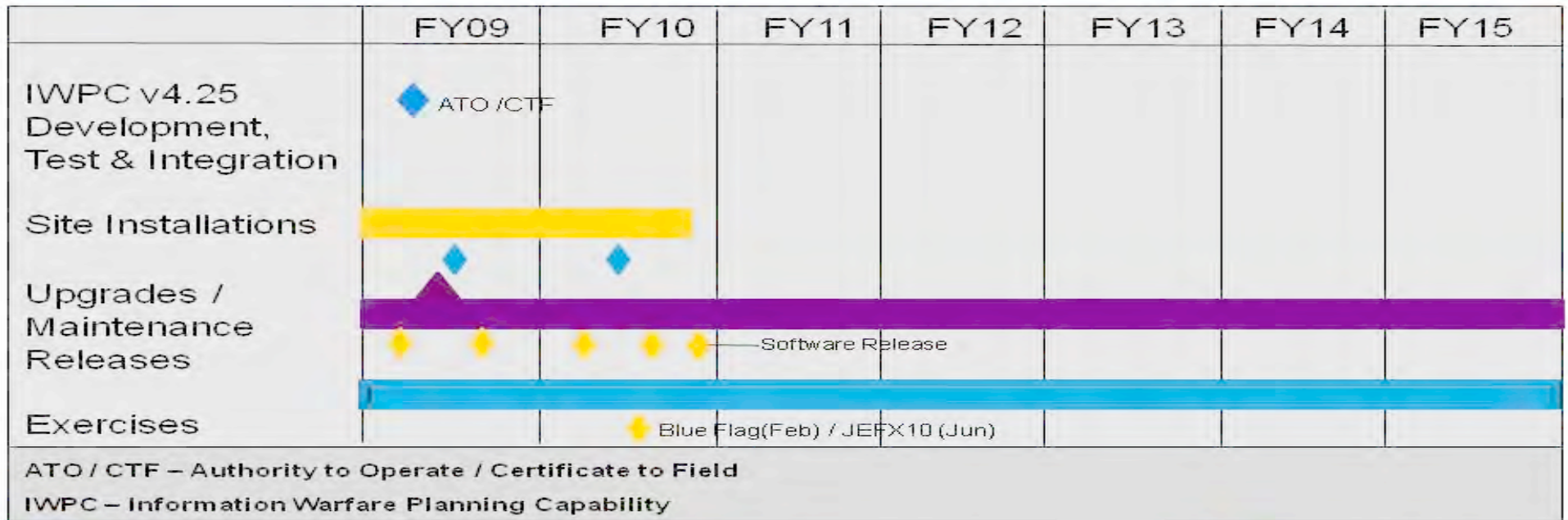
PE 0208021F: *Information Warfare Support*

PROJECT

670374: *Electronic Combat Spt, C3 Protection/
 Multi-Mission, Technology and Spt*



IWPC Schedule



PB11 R-Docs

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

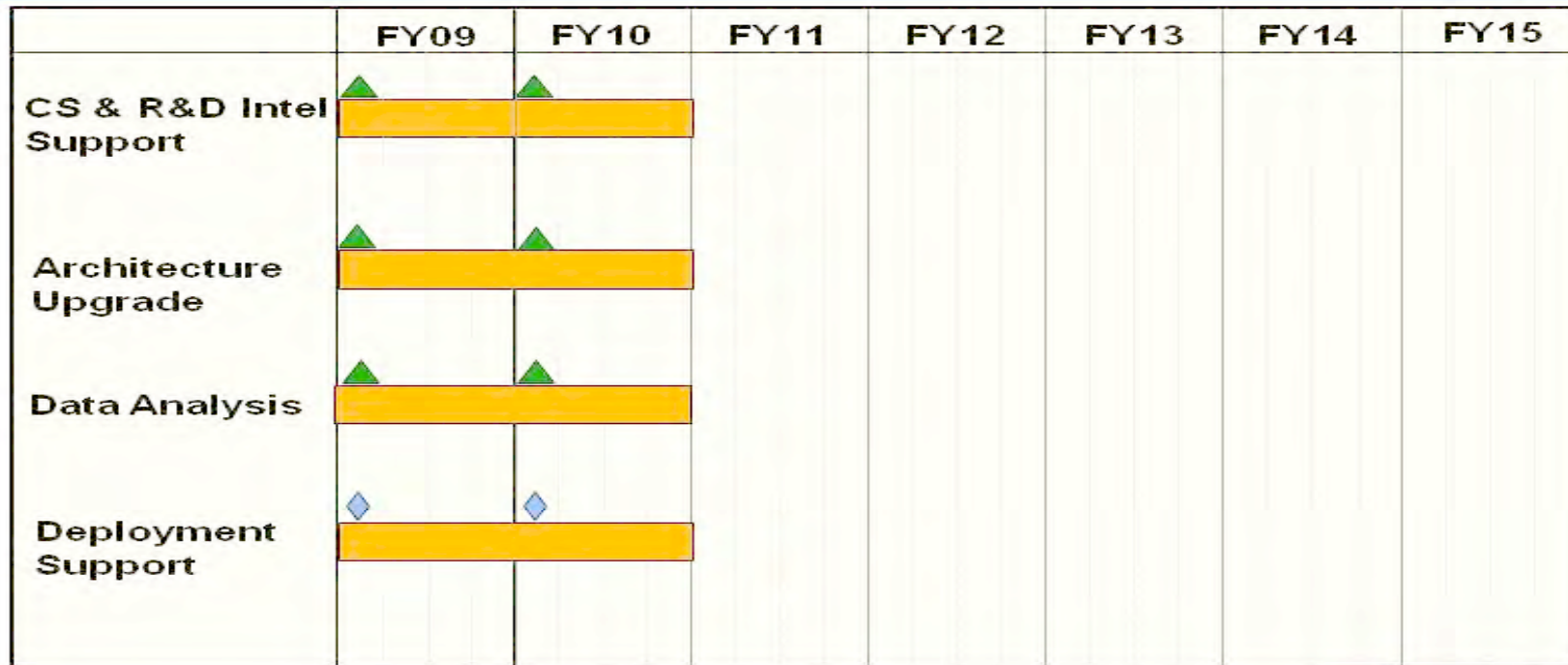
PE 0208021F: *Information Warfare Support*

PROJECT

670374: *Electronic Combat Spt, C3 Protection/
Multi-Mission, Technology and Spt*



CS Intelligence Program Schedule



Intelligence Support

Key Events
 Contract Award

PB11 R-Docs

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208021F: <i>Information Warfare Support</i>	PROJECT 670374: <i>Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
IWPC Development, Test & Integration	1	2009	1	2009
IWPC Fielding/Site Installation	1	2009	4	2010
IWPC Upgrades/Maintenance Releases	1	2009	4	2011
Exercises	1	2009	4	2011
Counterspace and R&D Intelligence Support	1	2009	4	2010
Architecture Upgrade Supporting SSA, SSP, & Counterspace	1	2009	4	2010
Data Analysis and Product Development for R&D	1	2009	4	2010
Deployment Support for Testing and Data Collection	1	2009	4	2010

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208059F: <i>CYBER Command</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	1.117	0.000	1.117	0.704	0.518	0.517	0.408	Continuing	Continuing
676002: <i>CYBER SYSTEMS MODERNIZATION</i>	0.000	0.000	1.117	0.000	1.117	0.704	0.518	0.517	0.408	0.000	0.000

A. Mission Description and Budget Item Justification

Funding was inadvertently placed in PE 0208059F and should be moved to PE 0307141F.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	1.117	0.000	1.117
Total Adjustments	0.000	0.000	1.117	0.000	1.117
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	1.117	0.000	1.117

Change Summary Explanation

FY11: The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

R-1 Line Item #166

Page 1 of 6

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208059F: <i>CYBER Command</i>	PROJECT 676002: <i>CYBER SYSTEMS MODERNIZATION</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
676002: <i>CYBER SYSTEMS MODERNIZATION</i>	0.000	0.000	1.117	0.000	1.117	0.704	0.518	0.517	0.408	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Funding was inadvertently placed in PE 0208059F and should be moved to PE 0307141F.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: CYBER System Modernization <i>FY 2009 Accomplishments:</i> In FY09: N/A <i>FY 2010 Plans:</i> In FY10: N/A <i>FY 2011 Base Plans:</i> In FY11: Initiate CYBER System Modernization <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.	0.000	0.000	1.117	0.000	1.117
Accomplishments/Planned Programs Subtotals	0.000	0.000	1.117	0.000	1.117

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208059F: <i>CYBER Command</i>	PROJECT 676002: <i>CYBER SYSTEMS MODERNIZATION</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (7077): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

N/A

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0208059F: <i>CYBER Command</i>				PROJECT 676002: <i>CYBER SYSTEMS MODERNIZATION</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CYBER Systems Modernization	TBD/TBD	TBD TBD	0.000	0.000		1.117		0.000		1.117	0.000	1.117	0.000
Subtotal			0.000	0.000		1.117		0.000		1.117	0.000	1.117	0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	0.000	0.000		1.117	0.000	1.117	0.000	1.117

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0208059F: *CYBER Command*


PROJECT


676002: *CYBER SYSTEMS MODERNIZATION*




CYBER COMMAND ACTIVITIES

	FY09	FY10	FY11	FY12	FY13	FY14	FY15
<p>SCHEDULE NOT DETERMINED AT THIS TIME</p>							

 Concept activities

 Integrate / test

 Key events

PB11 R-Docs

UNCLASSIFIED

R-1 Line Item #166

Page 5 of 6

Volume 3 - 715

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208059F: <i>CYBER Command</i>	PROJECT 676002: <i>CYBER SYSTEMS MODERNIZATION</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
CYBER Systems Modernization	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0301400F: <i>SPACE SUPERIORITY INTELLIGENCE</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	10.006	0.000	10.006	11.906	12.070	12.238	12.416	Continuing	Continuing
67A051: <i>Space Superiority - Advanced Intelligence Systems</i>	0.000	0.000	10.006	0.000	10.006	11.906	12.070	12.238	12.416	Continuing	Continuing

Note

In FY 2011, Project Number 670374, Electronic Combat Spt, C3 Protection/Multi-Mission Technology and Spt, funding and content were transferred from PE 0208021F, Information Warfare Support.

A. Mission Description and Budget Item Justification

Provides Electronic Support (ES) for key find, fix, track, target, engage and assess (F2T2EA) requirements supporting Space Superiority activities. Additionally funding provided for developmental intelligence collection to support new capability acquisition and development. This project funds transportable intelligence collection and analysis capabilities that are modular (plug-and-play), and can keep pace with technological advances and emerging threats. It provides intelligence support systems for Space Situational Awareness activities that provide the requisite current and predictive knowledge of space events and threat conditions and intelligence support to Space Protection Programs by providing architectural survivability analysis of critical mission assets for mission assurance. It also supports phased threat system analysis and studies (A&S), test support, lab equipment, and Material Acquisition and Exploitation (MAE) for system development and vulnerability/susceptibility assessments to support tactics, techniques and procedures (TTP) development and future threat technology studies necessary for mission area success and achievement of space superiority, and to preserve the US space advantage across all domains.

This program is in Budget Activity 7, Operational System Development, because it studies, develops, and fields IO tools.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0301400F: <i>SPACE SUPERIORITY INTELLIGENCE</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	10.006	0.000	10.006
Total Adjustments	0.000	0.000	10.006	0.000	10.006
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	10.006	0.000	10.006

Change Summary Explanation

Funding and content transferred from PE 0208021F, Information Warfare Support effective in FY2011.
 FY 2011: The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0301400F: <i>SPACE SUPERIORITY INTELLIGENCE</i>				PROJECT 67A051: <i>Space Superiority - Advanced Intelligence Systems</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost	
67A051: <i>Space Superiority - Advanced Intelligence Systems</i>	0.000	0.000	10.006	0.000	10.006	11.906	12.070	12.238	12.416	Continuing	Continuing	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0			
Note In FY 2011, Project Number 67A051, Space Superiority - Advanced Intelligence Systems content and funding were transferred from PE 0208021F, Information Warfare Support, in order to focus specific attention on the Space Superiority Intelligence requirements.												
A. Mission Description and Budget Item Justification Provides Electronic Support (ES) for key find, fix, track, target, engage and assess (F2T2EA) requirements supporting Space Superiority activities. Additionally funding provided for developmental intelligence collection to support new capability acquisition and development. This project funds transportable intelligence collection and analysis capabilities that are modular (plug-and-play), and can keep pace with technological advances and emerging threats. It provides intelligence support systems for Space Situational Awareness activities that provide the requisite current and predictive knowledge of space events and threat conditions and intelligence support to Space Protection Programs by providing architectural survivability analysis of critical mission assets for mission assurance. It also supports phased threat system analysis and studies (A&S), test support, lab equipment, and Material Acquisition and Exploitation (MAE) for system development and vulnerability/susceptibility assessments to support tactics, techniques and procedures (TTP) development and future threat technology studies necessary for mission area success and achievement of space superiority, and to preserve the US space advantage across all domains. This program is in Budget Activity 7, Operational System Development, because it studies, develops, and fields IO tools.												
B. Accomplishments/Planned Program (\$ in Millions)												
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total		
MAJOR THRUST: Developing transportable intelligence collection and analysis capabilities that are modular (plug-and-play), and can keep pace with technological advances and emerging threats. <i>FY 2009 Accomplishments:</i> In FY 2009: Not applicable.						0.000	0.000	10.006	0.000	10.006		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0301400F: <i>SPACE SUPERIORITY INTELLIGENCE</i>	PROJECT 67A051: <i>Space Superiority - Advanced Intelligence Systems</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2010 Plans:</i> In FY 2010: Not applicable					
<i>FY 2011 Base Plans:</i> In Fy 2011: Space Superiority and R&D intelligence support; architecture upgrade support to SSA, SPP & Space Superiority; data analysis and product Development for R&D deployment; support for testing and data collection.					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	10.006	0.000	10.006

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0280021F: <i>RDT&E, AF</i>	9.463	9.989	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0301400F: <i>OMAF</i>	13.025	20.015	34.141	0.000	34.141	34.966	32.382	33.499	34.685	0.000	0.000

D. Acquisition Strategy

All contracts funded in this program will be awarded using competitive procedures to the maximum extent possible.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0301400F: <i>SPACE SUPERIORITY INTELLIGENCE</i>	PROJECT 67A051: <i>Space Superiority - Advanced Intelligence Systems</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Space Superiority and R&D intelligence support	TBD/TBD	TBD TBD	0.000	0.000		2.505	Nov 2010	0.000		2.505	Continuing	Continuing	Continuing
Architecture upgrade support to SSA, SPP, and Space Superiority	TBD/TBD	TBD TBD	0.000	0.000		1.601	Nov 2010	0.000		1.601	Continuing	Continuing	Continuing
Data analysis and product development for R&D	TBD/TBD	TBD TBD	0.000	0.000		5.400	Nov 2010	0.000		5.400	Continuing	Continuing	Continuing
Deployment support for testing and data collection	TBD/TBD	TBD TBD	0.000	0.000		0.500	Nov 2010	0.000		0.500	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		10.006		0.000		10.006			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		10.006		0.000		10.006			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

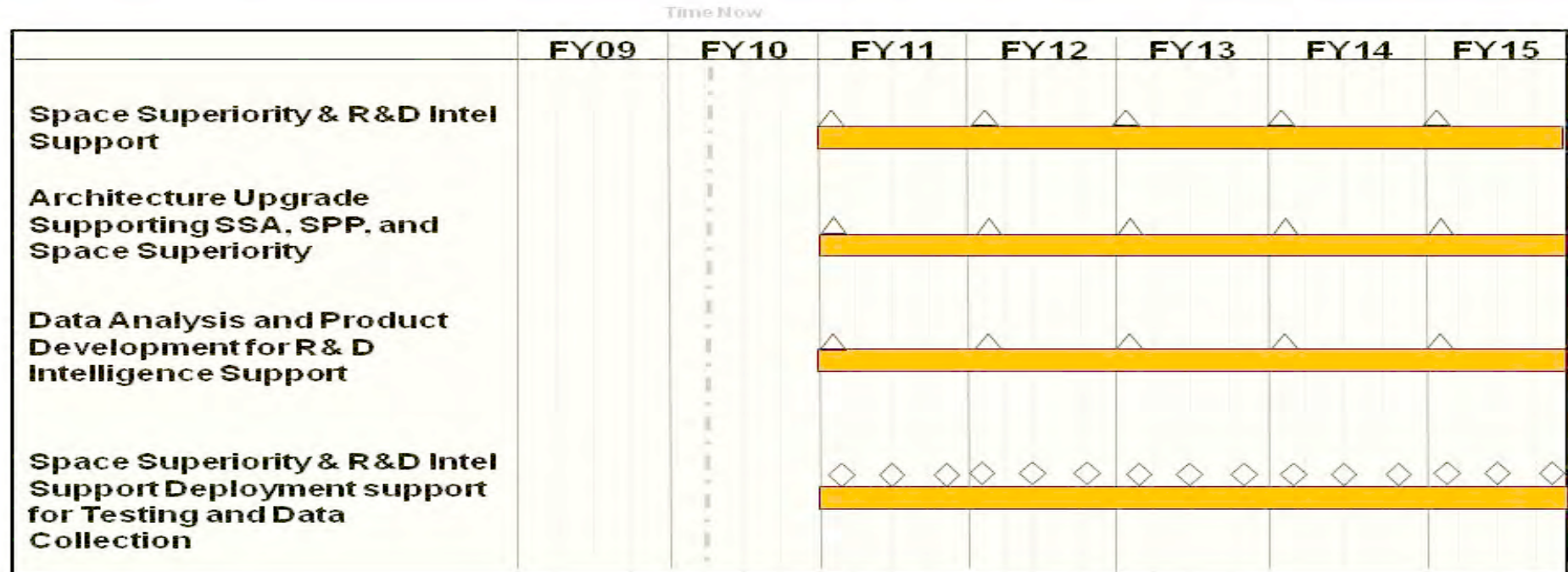
PE 0301400F: *SPACE SUPERIORITY INTELLIGENCE*

PROJECT

67A051: *Space Superiority - Advanced Intelligence Systems*



Space Superiority Intelligence Program Schedule



◇ Key Event
 △ Contract Award

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0301400F: <i>SPACE SUPERIORITY INTELLIGENCE</i>	PROJECT 67A051: <i>Space Superiority - Advanced Intelligence Systems</i>
--	--	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Space Superiority R&D intel support	1	2011	4	2011
Architecture upgrade supporting SSA, SPP, and Space Superiority	1	2011	4	2011
Data analysis and product development for R&D intelligence Support	1	2011	4	2011
Deployment support for testing and data collection	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.158	26.107	12.532	0.000	12.532	5.762	1.719	9.234	5.978	Continuing	Continuing
674777: <i>E-4B Aircraft Modernization</i>	0.158	17.259	12.532	0.000	12.532	5.762	1.719	9.234	5.978	0.000	210.293
675301: <i>Next Generation NAOC</i>	0.000	8.848	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification

E-4B NAOC fleet satisfies the military need for an airborne operations center with communications capabilities that permit military and civilian leadership to monitor and control military and civil national assets during all phases of nuclear and non-nuclear conflict or natural disaster. The E-4B NAOC fleet also satisfies the military requirement to provide a highly survivable node of the National Military Command System (NMCS). Developmental modifications include, but are not limited to, upgrades and enhancements to aircraft structures, propulsion system, fuel system, environmental control system, electrical generation and distribution systems, flight safety and navigation systems (with their associated communications equipment), and the related aircraft operations center facilities, equipment, and communications necessary for the E-4B fleet to execute its mission. Additionally, funds may be utilized to explore modifications, upgrades, and future systems required to meet mission requirements.

Developmental modifications and studies/projects currently underway or planned for accomplishment under this program include:

- The Air Force requested RDT&E funds in FY10 to continue analysis for a replacement fleet based on the recommendations of the E-4B NAOC Aircraft Replacement AoA. Funds will be utilized to develop a Technology Development Strategy, Test and Evaluation Strategy, Systems Engineering Plan, Lifecycle Management Plan, Initial Capabilities Document, and other required documents leading up to a Milestone A decision. A number of risk reduction studies, such as a sustainability study and antenna/communications technology study, will also be accomplished.

- Electromagnetic Pulse (EMP) testing will be conducted in FY10 and FY11 to validate the E-4B fleet compliance with updated EMP protection Mil Standards. FY10-11 RDT&E funds will be used to fully test each aircraft. The E-4B fleet will begin an annual EMP testing program with O&M funds once a baseline has been established for each aircraft.

- The Secure Data Crypto modification replaces various E-4B cryptographic systems currently scheduled to be decertified by the National Security Agency (NSA). This modification ensures the continued transmission and receipt of critical strategic force orders. Funds for this modification will be used to design an engineering

UNCLASSIFIED

R-1 Line Item #174

Page 1 of 19

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>	
<p>solution, develop compatible software, procure new secure data devices, and integrate NSA approved and Internet Protocol Version 6 (IPv6) compliant secure data cryptographic devices and associated peripherals on the aircraft.</p> <ul style="list-style-type: none">- The Super High Frequency (SHF) Multiplexor (MUX) project integrates a more capable and logisitically supportable MUX to replace the obsolete and temporary solution used today. The current SHF MUX is prone to intermittent disconnects and poor performance. A new device will allow the E-4B to better meet requirements of transmitting combined secure and non-secure digital data streams via satellite. This effort will install and test a new SHF MUX into the E-4B.- The CNS/ATM modification upgrades the air traffic communications systems to improve Navigation and Instrument Approach capabilities. These ongoing modifications are required to comply with both U.S. and international air traffic management requirements and maintain world-wide (anytime/anywhere) availability. This modification will add Automatic Dependent Surveillance - Broadcast (ADS-B) Out capability, replace the obsolete Flight Management Computer (FMC), and upgrade or install required systems to meet domestic and foreign CNS/ATM requirements. This is expected to be an on-going program to meet evolving CNS/ATM requirements.- Secure, Survivable Communication modifications will upgrade and replace existing systems required to meet existing National Security Presidential Directive (NSPD)-28 and NSPD-51/Homeland Security Presidential Directive (HSPD)-20 requirements and to ensure continued connectivity and interoperability as satellite and communications infrastructure evolves. Expected modifications requiring RDT&E include, but are not limited to, installation of Family of Beyond-Line-of-Site Terminals (FAB-T), Presidential National Voice Conferencing (PNVC), modification of the current Super High Frequency (SHF) system to meet immediate needs, and eventual replacement of the SHF System. FAB-T Command Post Terminals will replace the MILSTAR Terminal and provide access to protected wideband Advanced Extremely High Frequency (AEHF) satellite networks. PNVC replaces Survivable Emergency Conferencing Network (SECN), which will not be supported once the AEHF satellite network is in place. Modification of the current SHF system is required in the near-term to replace the most critically obsolete components to ensure that the system remains operable and logistically supportable until a replacement system is fielded. A replacement to the SHF system is required as secure, survivable communications capability transitions from the Defense Satellite Communications System (DSCS). <p>The E-4B program is categorized as a Budget Activity 7 - Operational System Development, because it develops modifications for a fielded system.</p>		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	4.058	26.107	0.000	0.000	0.000
Current President's Budget	0.158	26.107	12.532	0.000	12.532
Total Adjustments	-3.900	0.000	12.532	0.000	12.532
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-3.900	0.000	12.532	0.000	12.532

Change Summary Explanation

FY09 RDT&E (\$3.9M) was removed upon Congressional approval of Reprogramming Action FY09-04 PA, Nuclear Surety. \$26M in FY10 for EMP Test execution, SHF MUX Upgrade development, CNS/ATM development, and for Next Generation NAOC analysis. \$7M added to FY11 for Secure, Survivable Communications development since last year's budget submission. Reduced level of effort for EMP Test execution, SHF MUX Upgrade development, and CNS/ATM development in FY11 compared to FY10, and no funds requested for Next Gen funding in FY11.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>	PROJECT 674777: <i>E-4B Aircraft Modernization</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674777: <i>E-4B Aircraft Modernization</i>	0.158	17.259	12.532	0.000	12.532	5.762	1.719	9.234	5.978	0.000	210.293
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

E-4B NAOC fleet satisfies the military need for an airborne operations center with communications capabilities that permit military and civilian leadership to monitor and control military and civil national assets during all phases of nuclear and non-nuclear conflict or natural disaster. The E-4B NAOC fleet also satisfies the military requirement to provide a highly survivable node of the National Military Command System (NMCS). Developmental modifications include, but are not limited to, upgrades and enhancements to aircraft structures, propulsion system, fuel system, environmental control system, electrical generation and distribution systems, flight safety and navigation systems (with their associated communications equipment), and the related aircraft operations center facilities, equipment, and communications necessary for the E-4B fleet to execute its mission. Additionally, funds may be utilized to explore modifications, upgrades, and future systems required to meet mission requirements.

Developmental modifications and studies/projects currently underway or planned for accomplishment under this program include:

- Electromagnetic Pulse (EMP) testing will be conducted in FY10 and FY11 to validate the E-4B fleet compliance with updated EMP protection Mil Standards. FY10-11 RDT&E funds will be used to fully test each aircraft. The E-4B fleet will begin an annual EMP testing program with O&M funds once a baseline has been established for each aircraft.
- The Secure Data Crypto modification replaces various E-4B cryptographic systems currently scheduled to be decertified by the National Security Agency (NSA). This modification ensures the continued transmission and receipt of critical strategic force orders. Funds for this modification will be used to design an engineering solution, develop compatible software, procure new secure data devices, and integrate NSA approved and Internet Protocol Version 6 (IPv6) compliant secure data cryptographic devices and associated peripherals on the aircraft.
- The Super High Frequency (SHF) Multiplexor (MUX) project integrates a more capable and logistically supportable MUX to replace the obsolete and temporary solution used today. The current SHF MUX is prone to intermittent disconnects and poor performance. A new device will allow the E-4B to better meet requirements of transmitting combined secure and non-secure digital data streams via satellite. This effort will install and test a new SHF MUX into the E-4B.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>	PROJECT 674777: <i>E-4B Aircraft Modernization</i>
--	--	--

- The CNS/ATM modification upgrades the air traffic communications systems to improve Navigation and Instrument Approach capabilities. These ongoing modifications are required to comply with both U.S. and international air traffic management requirements and maintain world-wide (anytime/anywhere) availability. This modification will add Automatic Dependent Surveillance - Broadcast (ADS-B) Out capability, replace the obsolete Flight Management Computer (FMC), and upgrade or install required systems to meet domestic and foreign CNS/ATM requirements. This is expected to be an on-going program to meet evolving CNS/ATM requirements.

- Secure, Survivable Communication modifications will upgrade and replace existing systems required to meet existing National Security Presidential Directive (NSPD)-28 and NSPD-51/Homeland Security Presidential Directive (HSPD)-20 requirements and to ensure continued connectivity and interoperability as satellite and communications infrastructure evolves. Expected modifications requiring RDT&E include, but are not limited to, installation of Family of Beyond-Line-of-Site Terminals (FAB-T), Presidential National Voice Conferencing (PNVC), modification of the current Super High Frequency (SHF) system to meet immediate needs, and eventual replacement of the SHF System. FAB-T Command Post Terminals will replace the MILSTAR Terminal and provide access to protected wideband Advanced Extremely High Frequency (AEHF) satellite networks. PNVC replaces Survivable Emergency Conferencing Network (SECN), which will not be supported once the AEHF satellite network is in place. Modification of the current SHF system is required in the near-term to replace the most critically obsolete components to ensure that the system remains operable and logistically supportable until a replacement system is fielded. A replacement to the SHF system is required as secure, survivable communications capability transitions from the Defense Satellite Communications System (DSCS).

The E-4B program is categorized as a Budget Activity 7 - Operational System Development, because it develops modifications for a fielded system.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Complete EMP Testing to validate compliance with applicable EMP hardness Mil Standards <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Complete initial EMP Test at Patuxent River Naval Air Station	0.000	6.000	2.000	0.000	2.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>	PROJECT 674777: <i>E-4B Aircraft Modernization</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> In FY 2011: Prototype CNS/ATM installation kit delivery <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.						
MAJOR THRUST: Develop, install, and test a prototype installation kit to replace the most critically obsolete components of the current SHF System <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: N/A <i>FY 2011 Base Plans:</i> In FY 2011: Develop, install, and test a prototype installation kit to replace the most critically obsolete components of the current SHF System <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.		0.000	0.000	7.000	0.000	7.000
MAJOR THRUST: SPO support (A&AS) and travel <i>FY 2009 Accomplishments:</i> In FY 2009: SPO support (A&AS) and travel <i>FY 2010 Plans:</i> In FY 2010: SPO support (A&AS) and travel		0.158	0.800	0.500	0.000	0.500

UNCLASSIFIED

R-1 Line Item #174

Page 7 of 19

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>	PROJECT 674777: <i>E-4B Aircraft Modernization</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> In FY 2011: SPO support (A&AS) and travel					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	0.158	17.259	12.532	0.000	12.532

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0302015F: <i>E-4B NAOC, (APAF)</i>	0.000	0.000	8.867	0.000	8.867	11.478	15.712	3.137	3.220	0.000	0.000

D. Acquisition Strategy

Implementation of modifications will be contracted under the sole source Product Support Integration (PSI) with Boeing - Wichita. Patuxent River NAS will be providing EMP test support and execution.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>				PROJECT 674777: <i>E-4B Aircraft Modernization</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SHF MUX Upgrade Development and Integration	SS/CPIF	Boeing, Wichita Development & Modification Center Wichita, KS	0.000	0.954	Mar 2010	0.285		0.000		0.285	0.000	1.239	Continuing
CNS/ATM Development and Integration	SS/CPIF	Boeing, Wichita Development & Modification Center Wichita, KS	0.000	9.505	Mar 2010	2.747		0.000		2.747	Continuing	Continuing	Continuing
Secure Survivable Communication	SS/CPIF	Boeing, Wichita Development & Modification Center Wichita, KS	0.000	0.000		7.000	Mar 2011	0.000		7.000	0.000	7.000	Continuing
Subtotal			0.000	10.459		10.032		0.000		10.032			

Remarks

Contracting Method and Type may be altered at time of contract.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>				PROJECT 674777: <i>E-4B Aircraft Modernization</i>					

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
EMP Test Support - Boeing	SS/CPIF	Boeing, Wichita Development & Modification Center Wichita, KS	0.000	4.000	Jun 2010	1.333	Mar 2011	0.000		1.333	0.000	5.333	Continuing
EMP Test Support - NAVAIR	MIPR	Naval Air Warfare Center Patuxent River NAS, MD	0.000	2.000	Jun 2010	0.667	Mar 2011	0.000		0.667	0.000	2.667	Continuing
Subtotal			0.000	6.000		2.000		0.000		2.000	0.000	8.000	

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
E-4B Program Office contractor support	TM	Chickasaw Nation Industries, Inc. Oklahoma City, OK	0.000	0.250	Mar 2010	0.250	Mar 2011	0.000		0.250	Continuing	Continuing	Continuing
E-4B Program Office Govt TDY/PMA	TBD/TBD	TBD TBD	0.158	0.550		0.250		0.000		0.250	Continuing	Continuing	Continuing
Subtotal			0.158	0.800		0.500		0.000		0.500			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>	PROJECT 674777: <i>E-4B Aircraft Modernization</i>
--	--	--

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.158	17.259	12.532	0.000	12.532			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

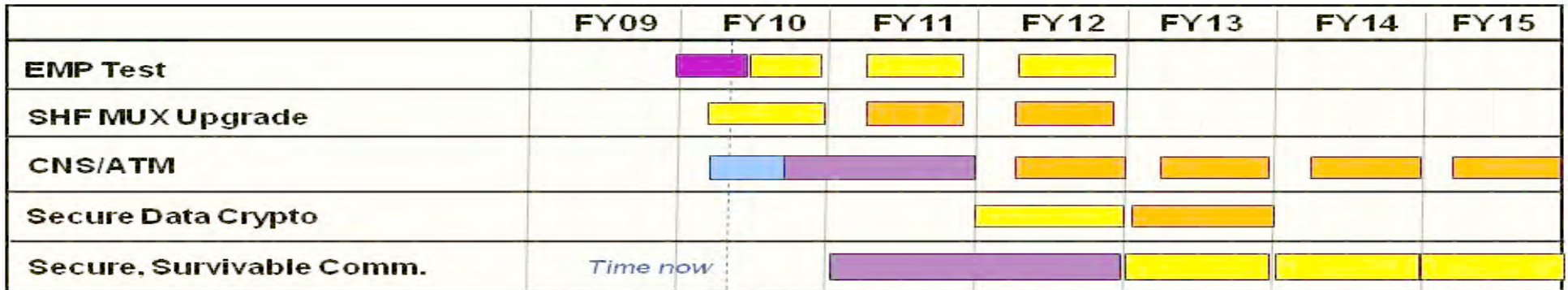
R-1 ITEM NOMENCLATURE



PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*



PROJECT



674777: *E-4B Aircraft Modernization*

E-4B NAOC Modification Schedule



 Concept activities
 Production / fielding

 Design / development
 Operations / sustainment

 Integration / test
 Key events

PB10 R-Docs

1

UNCLASSIFIED

R-1 Line Item #174
Page 12 of 19

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>	PROJECT 674777: <i>E-4B Aircraft Modernization</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
EMP Testing	1	2010	4	2010
EMP Testing (1)	2	2011	4	2011
SHF MUX Upgrade	1	2010	4	2010
SHF MUX Upgrade (2)	2	2011	4	2011
CNS/ATM	1	2010	4	2011
Secure Data Crypto	1	2010	4	2011
Secure, Survivable Communications	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>	PROJECT 675301: <i>Next Generation NAOC</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675301: <i>Next Generation NAOC</i>	0.000	8.848	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

E-4B NAOC fleet satisfies the military need for an airborne operations center with communications capabilities that permit military and civilian leadership to monitor and control military and civil national assets during all phases of nuclear and non-nuclear conflict or natural disaster. The E-4B NAOC fleet also satisfies the military requirement to provide a highly survivable node of the National Military Command System (NMCS). E-4B NAOC lifecycle costs, particularly O&M costs, will increase substantially as the fleet ages and the Air Force assumes more sustainment support costs as the world-wide number of Boeing 747-200 class aircraft continues to diminish.

Based on the recommendations of the E-4B NAOC Aircraft Replacement Analysis of Alternatives (AoA) and the Executive Support study, both completed in late 2009, the Air Force requested RDT&E funds in FY10 to continue analysis of supportability and affordability of sustaining the current E-4B fleet as well as to explore options for a replacement fleet. Funds will be utilized to develop a Technology Development Strategy, Test and Evaluation Strategy, Systems Engineering Plan, Lifecycle Management Plan, Initial Capabilities Document, and other required documents leading up to a Milestone A decision. A number of risk reduction studies, such as a sustainability study and antenna/communications technology study, will also be accomplished.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Develop documentation leading to a Milestone A decision as well as execute a number of risk reduction studies, such as a sustainability study and antenna/communications technology study. <i>FY 2009 Accomplishments:</i> In FY 2009: N/A	0.000	8.848	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>	PROJECT 675301: <i>Next Generation NAOC</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Develop documentation leading to a Milestone A decision as well as execute a number of risk reduction studies, such as a sustainability study and antenna/communications technology study.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Finalization of Milestone A documents and completion of risk reduction studies</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	0.000	8.848	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (7915): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Air Force Electronic Systems Center (ESC) will be the NAOC Replacement contracting authority for the \$8.8M FY10 RDT&E, AF. ESC will lead risk reduction and technology exploration studies leading up to a Material Development Decision and Milestone A Decision. Each study will be supported by contract support with required expertise and may request data and other support from E-4B Product Support Integrator, Boeing Wichita Development & Modification Center.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>				PROJECT 675301: <i>Next Generation NAOC</i>					

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Data and Analytical Support	SS/FFP	Boeing, Wichita Development & Modification Center Wichita, KS	0.000	1.000	Jan 2010	0.000		0.000		0.000	0.000	1.000	0.000
Project Management Support	SS/FFP	Booz Allen Hamilton McLean, VA	0.000	2.000	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.000	3.000		0.000		0.000		0.000			

Remarks
Contracting Method and Type may be altered at time of contract

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
A&AS Support and Govt TDY	TBD/TBD	TBD TBD	0.000	5.848		0.000		0.000		0.000	0.000	5.848	Continuing
Subtotal			0.000	5.848		0.000		0.000		0.000	0.000	5.848	

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>	PROJECT 675301: <i>Next Generation NAOC</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	8.848	0.000	0.000	0.000			

Remarks

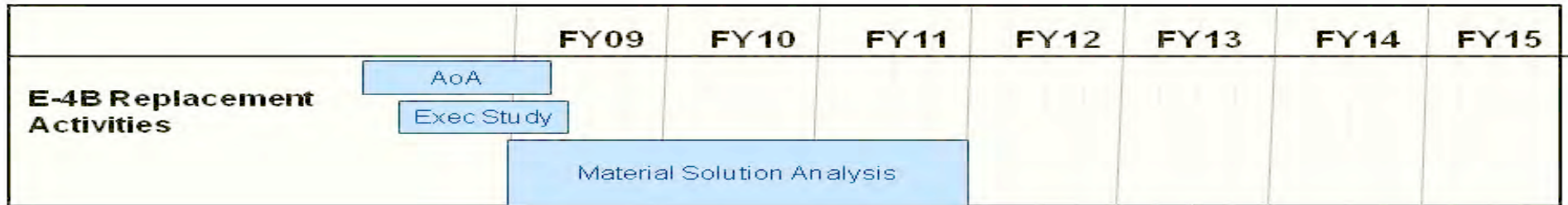
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i>	PROJECT 675301: <i>Next Generation NAOC</i>

E-4B NAOC Replacement Program



Concept activities
 Production / fielding

Design / development
 Operations / sustainment

Integration / test
 △◇ Key events

PB10 R-Docs

1

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*

PROJECT

675301: *Next Generation NAOC*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
AoA and Executive Study	1	2009	2	2009
Material Solutions Analysis	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	81.095	72.360	78.784	0.000	78.784	10.855	1.339	1.358	1.379	Continuing	Continuing
672832: <i>MEECN System Improvements</i>	2.067	1.806	1.299	0.000	1.299	1.316	1.339	1.358	1.379	Continuing	Continuing
674610: <i>Minuteman MEECN Program Upgrade (MMPU)</i>	27.795	14.412	32.029	0.000	32.029	0.000	0.000	0.000	0.000	0.000	0.000
675047: <i>Ground Element MEECN System (GEMS)</i>	51.233	56.142	45.456	0.000	45.456	9.539	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification

Minimum Essential Emergency Communications Network (MEECN) systems provide assured communications connectivity between the President and the strategic deterrent forces in stressed environments. There are three on-going MEECN activities working to modernize strategic forces' communication networks.

- MEECN Systems Improvements (MSI) is a long-range planning process with Users (Air Force Global Strike Command (AFGSC), Air Combat Command (ACC), Air Force Space Command (AFSPC), US Strategic Command (USSTRATCOM), Air Mobility Command (AMC), and the Navy) to develop positions for current and future requirements/issues based on available technology.
- Minuteman MEECN Program Upgrade (MMPU) updates existing systems composed of Minuteman ICBM Launch Control Center (LCC) Very Low Frequency/Low Frequency (VLF/LF) along with a Minuteman ICBM LCC Extremely High Frequency (EHF) communications capability. MMPU will provide a capability in the LCC for the Missile Combat Crew Members to have operator control of the terminal to switch among various EHF/AEHF satellite constellations and be compatible with Advanced EHF (AEHF). AEHF is an Extended Data Rate (XDR) waveform that provides more secure transmit/receive at frequencies above 20 GHz.
- Ground Element MEECN Systems (GEMS) provides a secure, survivable inter-site and intra-site and mobile VLF and EHF communication to bomber, tanker, reconnaissance units and other communications facilities with strategic responsibilities. GEMS will also be upgraded to AEHF with the XDR waveform.
- Long Term Solution (LTS) will replace the current Nuclear Command and Control (NC2) Hybrid Solution down to Launch Control Centers and provide a worldwide, robust, non-survivable NC2 network for specialized messaging services to meet Nuclear Technical Performance Criteria (NTPC) requirements for Emergency Action Message (EAM) dissemination.

This program is Budget Activity 07, Operational System Development, because it supports work on currently fielded weapon systems.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	70.562	72.694	0.000	0.000	0.000
Current President's Budget	81.095	72.360	78.784	0.000	78.784
Total Adjustments	10.533	-0.334	78.784	0.000	78.784
• Congressional General Reductions		-0.334			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	10.533	0.000	78.784	0.000	78.784

Change Summary Explanation

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	PROJECT 672832: <i>MEECN System Improvements</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
672832: <i>MEECN System Improvements</i>	2.067	1.806	1.299	0.000	1.299	1.316	1.339	1.358	1.379	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

- MEECN Systems Improvements (MSI) is a long-range planning process with Users (Air Combat Command (ACC), Air Force Space Command (AFSPC), Air Force Global Strike Command (AFGSC), US Strategic Command (USSTRATCOM), Air Mobility Command (AMC), and the Navy) to develop positions for current and future requirements/issues based on available technology.
- Trade-off analysis is performed to identify benefits and drawbacks of maintaining current systems. Studies are conducted to monitor communications system technology and potential integration complexities into current and future capabilities.
- MSI provides pro-active support to the Nuclear and National C2 community:
 - Develops an Air Force National Command and Control (NC2) Roadmap for FYDP budget inputs.
 - Partner with Navy on Common VLF Receiver requirements and architectural design.
- This program is in Budget Activity 07, Operational System Development, because it supports work on currently fielded weapon systems.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Major Thrust: Nuclear Command & Control Performance Study (NC2 Roadmap) & simulator for testing of communication architectures <i>FY 2009 Accomplishments:</i> In FY2009: VLF/LF Modernization Studies; Nuclear Command & Control Performance Study (NC2 Roadmap) & simulator for testing of communication architectures; and analytical support	2.067	1.806	1.299	0.000	1.299

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	PROJECT 672832: <i>MEECN System Improvements</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY2010: VLF/LF Modernization Studies; Nuclear Command & Control Performance Study (NC2 Roadmap) & simulator for testing of communication architectures; and analytical support</p> <p><i>FY 2011 Base Plans:</i> In FY2011: VLF/LF Modernization Studies; Nuclear Command & Control Performance Study (NC2 Roadmap) & simulator for testing of communication architectures; and analytical support</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	2.067	1.806	1.299	0.000	1.299

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (8172): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

- Johns Hopkins University (JHU) Applied Physics Lab (APL) is on contract to provide updates to the NC2 Roadmap in terms of the New Triad.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

R-1 Line Item #175

Page 4 of 23

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>				PROJECT 672832: <i>MEECN System Improvements</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CEP Analysis	MIPR	JHU APL Laurel, MD	0.805	0.000		0.000		0.000		0.000	0.000	0.805	0.805
NC2 Roadmap	MIPR	JHU APL Laurel, MD	3.678	0.358	Dec 2009	0.300	Dec 2010	0.000		0.300	Continuing	Continuing	Continuing
Simulation/Modeling Equipment	MIPR	Lincoln Labs Bedford, MA	2.224	0.000		0.000		0.000		0.000	0.000	2.224	2.224
Vol VII EAM Format Updates	TBD/TBD	GDCS Needham, MA	0.500	0.000		0.000		0.000		0.000	0.000	0.500	Continuing
VLF/LF Modernization Studies	MIPR	SPAWAR San Diego, CA	0.500	0.000		0.000		0.000		0.000	0.000	0.500	Continuing
Subtotal			7.707	0.358		0.300		0.000		0.300			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering and Acquisition Support	Various/ Various	Various Various	8.245	1.448	Jan 2010	0.999	Jan 2011	0.000		0.999	Continuing	Continuing	Continuing
MITRE	TBD/TBD	TBD Bedford, MA	0.633	0.000		0.000		0.000		0.000	0.000	0.633	0.633

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	PROJECT 672832: <i>MEECN System Improvements</i>
--	--	--

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			8.878	1.448		0.999		0.000		0.999			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.585	1.806		1.299		0.000		1.299			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*

PROJECT

672832: *MEECN System Improvements*

MSI



CDR: Critical Design Review EHF: Extremely High Frequency FOC: Full Operational Capability
 IOC: Initial Operational Capability PDR: Preliminary Design Review VLF: Very Low Frequency

- Concept activities
- Production / fielding
- Design / development
- Operations / sustainment
- Integration / test
- Key events

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	PROJECT 672832: <i>MEECN System Improvements</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
NC2 Roadmap Debriefs	2	2009	2	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	PROJECT 674610: <i>Minuteman MEECN Program Upgrade (MMPU)</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674610: <i>Minuteman MEECN Program Upgrade (MMPU)</i>	27.795	14.412	32.029	0.000	32.029	0.000	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project upgrades existing Minuteman ICBM Launch Control Center (LCC) Extremely High Frequency (EHF) communications to provide a capability for Missile Combat Crew Members to have operator control in the Launch Control Center of the terminal to switch among various EHF/AEHF satellite constellations. This upgrade will be compatible with Advanced EHF (AEHF) satellite and the supporting key management infrastructure (crypto interoperability).

AEHF is an Extended Data Rate (XDR) waveform that provides more secure transmit/receive at frequencies above 20 GHz. The AEHF terminal will provide both receive and report-back capability.

The terminal operator control modification will allow missile combat crews to transition between MILSTAR, UFO/E, UFO/EE and AEHF satellite constellations without dispatch of a maintenance team. These modifications comply with USSTRATCOM requirement for MMP terminals to communicate at higher data rates. This program is in Budget Activity 07, Operational System Development, because it supports work on fielded operating weapon systems.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Major Thrust: MMP Upgrade Technology Development <i>FY 2009 Accomplishments:</i> In FY2009: Engineering and Manufacturing Development (EMD) to include: AEHF terminal integration, AEHF modem design, cryptographic upgrade, weapon system hardness analysis, hardware development and software development for AEHF and improved operator control, analysis of power and cooling requirements, antenna integration, analysis of Software Compliant Architecture (SCA). Includes analytical support.	27.795	14.412	32.029	0.000	32.029

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	PROJECT 674610: <i>Minuteman MEECN Program Upgrade (MMPU)</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY2010: Complete Engineering and Manufacturing Development (EMD) and initiate Integration and Test (I&T) Phase to include: AEHF terminal integration, AEHF modem design, cryptographic upgrade, weapon system hardiness analysis, hardware development and software development for AEHF and improved operator control, analysis of power and cooling requirements, antenna integration, analysis of Software Compliant Architecture (SCA). Includes analytical support.</p> <p><i>FY 2011 Base Plans:</i> In FY2011: Complete Integration and Test (I&T) Phase to include: AEHF terminal integration, AEHF modem design, cryptographic upgrade, weapon system hardiness analysis, hardware development and software development for AEHF and improved operator control, analysis of power and cooling requirements, antenna integration, analysis of Software Compliant Architecture (SCA). Includes analytical support. This effort leads to a MS-C.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	27.795	14.412	32.029	0.000	32.029

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (8399): <i>PE0303131F, MEECN, MPAF</i>	0.000	0.000	0.000	0.000	0.000	24.062	10.105	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The ICBM Prime Integrating Contract (through OO-ALC, Hill AFB, UT) was used as a contracting vehicle for the Minuteman MEECN Program (MMP) and will continue to be used to provide an advisory role for integration support for the MMP Upgrade program.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	674610: <i>Minuteman MEECN Program Upgrade (MMPU)</i>

Two Concept and Technology Demonstration (C&TD) contracts were awarded to separate vendors following full and open competition. The MMP Upgrade System Development Demonstration (SDD) effort was a full and open competition and was awarded to Raytheon Company, Marlborough, MA on 15 Jan 08.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	PROJECT 674610: <i>Minuteman MEECN Program Upgrade (MMPU)</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MMP Development	SS/CPAF	Northrup Grumman TBD	46.069	0.000		0.000		0.000		0.000	0.000	46.069	46.069
MMP Upgrade Technology Development	SS/FFP	Rockwell Collins & Raytheon TBD	16.566	0.000		0.000		0.000		0.000	0.000	16.566	16.566
MMP Upgrade Program Integrator (Advisor)	SS/FFP	Northrup Grumman TBD	4.939	1.580	Dec 2009	3.510	Dec 2010	0.000		3.510	0.000	10.029	4.957
MMP Upgrade System Development and Demonstration (SDD)	SS/CPAF	Raytheon Company TBD	43.084	8.534	Dec 2009	24.308	Dec 2010	0.000		24.308	Continuing	Continuing	Continuing
Subtotal			110.658	10.114		27.818		0.000		27.818			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering and Acquisition Support	TBD/TBD	Various Various	8.023	2.084	Dec 2009	2.050	Dec 2010	0.000		2.050	Continuing	Continuing	Continuing
MITRE	TBD/TBD	TBD	5.593	1.946	Oct 2009	1.891	Oct 2010	0.000		1.891	0.000	9.430	5.125

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>				PROJECT 674610: <i>Minuteman MEECN Program Upgrade (MMPU)</i>					

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		TBD											
PMA	TBD/TBD	TBD TBD	0.508	0.205	Dec 2009	0.200	Dec 2010	0.000		0.200	0.000	0.913	0.625
Subtotal			14.124	4.235		4.141		0.000		4.141			

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Various	Various/ Various	Various Various	0.276	0.063	Mar 2010	0.070	Mar 2011	0.000		0.070	0.000	0.409	3.430
Subtotal			0.276	0.063		0.070		0.000		0.070	0.000	0.409	3.430

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		125.058	14.412	32.029	0.000	32.029		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	PROJECT 674610: <i>Minuteman MEECN Program Upgrade (MMPU)</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*

PROJECT

674610: *Minuteman MEECN Program Upgrade (MMPU)*

MMP Upgrade



CDR: Critical Design Review EHF: Extremely High Frequency FOC: Full Operational Capability
 IOC: Initial Operational Capability PDR: Preliminary Design Review VLF: Very Low Frequency

- Concept activities
- Production / fielding
- Design / development
- Operations / sustainment
- Integration / test
- Key events

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	PROJECT 674610: <i>Minuteman MEECN Program Upgrade (MMPU)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Continue SDD	1	2009	2	2010
Integration and Test	2	2010	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	PROJECT 675047: <i>Ground Element MEECN System (GEMS)</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675047: <i>Ground Element MEECN System (GEMS)</i>	51.233	56.142	45.456	0.000	45.456	9.539	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Ground Element MEECN Systems (GEMS) will be comprised of EHF/AEHF, VLF/LF, HF, UHF and Aircrew Alerting components and will provide secure, survivable inter-site, intra-site and mobile communications to bomber, tanker, reconnaissance and other communications facilities with strategic responsibilities. GEMS terminals will be developed and fielded to replace strategic mobile and fixed-site Single Channel Anti-jam Man-Portable (SCAMP) terminals. GEMS will also replace the Aircraft Alerting Communications Electromagnetic Pulse System/Electromagnetic Pulse Hardened Dispersal Communications (AACE/EHDC) systems.

- GEMS' primary mission is to provide strategic Wing Command Posts and mobile support teams survivable communication paths to receive EAMs and Force Management messages from Nuclear Command and Control (NC2) nodes and disseminate them to bomber, tanker, and recce aircrews.

- GEMS will provide solutions to existing capability shortfalls for NC2 and has significant potential to provide distributed and transportable command and control capabilities beyond the traditional NC2 mission - GEMS is the last line of operational comm when all other peacetime links fail.

This program is in Budget Activity 07, Operational System Development, because it supports work on fielded operating weapon systems.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Major Thrust: System Development and Demonstration (SDD) effort	51.233	56.142	45.456	0.000	45.456
<i>FY 2009 Accomplishments:</i> In FY2009: Engineering and Manufacturing Development (EMD) contract to include: EHF, VLF, HF and UHF terminal integration; EHF, VLF, HF and UHF modem design; cryptographic upgrade; weapon system hardness analysis; EHF, VLF, HF and UHF hardware development; EHF, VLF, HF and UHF					

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	PROJECT 675047: <i>Ground Element MEECN System (GEMS)</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (8662): <i>PE0303131F, MEECN, OPAF</i>	0.000	0.000	0.000	0.000	0.000	57.621	41.088	39.622	33.956	0.000	0.000

D. Acquisition Strategy

Two Concept and Technology Demonstration (C&TD) contracts were awarded to separate vendors following full and open competition. Rockwell Collins of Cedar Rapids, IA was awarded the SDD (CPAF) and production contract on 23 June 2005.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	PROJECT 675047: <i>Ground Element MEECN System (GEMS)</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SDD Contract	SS/CPAF	Rockwell Collins IA	184.983	48.833	Dec 2009	38.980	Dec 2010	0.000		38.980	Continuing	Continuing	Continuing
Subtotal			184.983	48.833		38.980		0.000		38.980			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering and Acquisition Support	Various/ Various	Various Various	12.236	3.032	Dec 2009	3.100	Dec 2010	0.000		3.100	Continuing	Continuing	Continuing
MITRE	WR	TBD Bedford, MA	8.411	2.760	Oct 2009	2.200	Oct 2010	0.000		2.200	Continuing	Continuing	Continuing
PMA	TBD/TBD	TBD TBD	1.950	0.973	Dec 2009	0.550	Dec 2010	0.000		0.550	Continuing	Continuing	Continuing
Subtotal			22.597	6.765		5.850		0.000		5.850			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	PROJECT 675047: <i>Ground Element MEECN System (GEMS)</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Various	Various/ Various	Various Various	1.518	0.544	Feb 2010	0.626	Feb 2011	0.000		0.626	Continuing	Continuing	Continuing
Subtotal			1.518	0.544		0.626		0.000		0.626			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	209.098	56.142		45.456	0.000	45.456		

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	PROJECT 675047: <i>Ground Element MEECN System (GEMS)</i>

GEMS



CDR: Critical Design Review EHF: Extremely High Frequency FOC: Full Operational Capability
 IOC: Initial Operational Capability PDR: Preliminary Design Review VLF: Very Low Frequency

- Concept activities
- Production / fielding
- Design / development
- Operations / sustainment
- Integration / test
- Key events

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303131F: <i>Minimum Essential Emergency Communications Network (MEECN)</i>	PROJECT 675047: <i>Ground Element MEECN System (GEMS)</i>
--	--	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
SDD (started FY05; ends in FY10)	1	2009	4	2010
Delta PDR	1	2010	1	2010
Delta CDR	4	2010	4	2010
Integration and Test	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

**Department of Defense
Fiscal Year (FY) 2011 President's Budget**

February 2010



Air Force

Justification Book Volume 3

Research, Development, Test & Evaluation, Air Force - 3600

Part 2 of 2

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	162.815	165.401	140.017	0.000	140.017	117.844	117.034	126.237	120.283	Continuing	Continuing
674861: <i>AF Electronic Key Management System (AF EKMS)</i>	4.273	2.695	2.540	0.000	2.540	1.860	2.109	2.141	2.172	Continuing	Continuing
675100: <i>Cryptographic Modernization</i>	129.575	139.673	118.787	0.000	118.787	91.439	98.614	111.487	105.198	Continuing	Continuing
675231: <i>AF Key Management Infrastructure (AF KMI)</i>	8.602	15.567	15.369	0.000	15.369	20.796	12.012	8.219	8.345	Continuing	Continuing
677820: <i>Computer Security RDT&E: Firestarter</i>	20.365	7.466	3.321	0.000	3.321	3.749	4.299	4.390	4.568	Continuing	Continuing

A. Mission Description and Budget Item Justification

The overall focus of the RDT&E efforts within this program is two-fold. Focus one is to provide the capability to protect and defend USAF Command, Control, Communications, Computers, and Intelligence, Surveillance, and Reconnaissance (C4ISR) and Weapon Systems from Information Warfare (IW) attacks and to ensure their recovery from such attacks. To this end, the project does research and development of information protection tools and transitions them to operational systems. Focus two is transforming electronic key delivery and DoD cryptographic devices to meet the next generation warfighting requirements. This includes: 1) a totally "man-out-of-the-loop" electronic crypto key distribution system -- from the actual generation of the key in the Key Processor all the way into the using End Crypto Unit (ECU) -- thus eliminating the current key vulnerability to compromise by individuals transporting or loading the key; and 2) an inventory of cryptographic devices that requires less quantities since they are more robust, stronger, able to communicate extremely large amounts of data at greatly increased data rates, be upgraded more easily and less expensively, and are net-centric and Global Information Grid-compatible.

This program is in budget activity 7, Operational System Development, because it addresses the development and transition of information security, protection and defensive capabilities and technologies.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	189.956	196.621	0.000	0.000	0.000
Current President's Budget	162.815	165.401	140.017	0.000	140.017
Total Adjustments	-27.141	-31.220	140.017	0.000	140.017
• Congressional General Reductions		-30.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-27.141	-1.220	140.017	0.000	140.017

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 677820: *Computer Security RDT&E: Firestarter*

Congressional Add: *Initiated/Completed Remote Suspect Identification.*

Congressional Add Subtotals for Project: 677820

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	3.102	0.000
	3.102	0.000
	3.102	0.000

Change Summary Explanation

\$30M Congressional reduction in FY10 due to "Restructure of Crypto Modernization program" and "Premature request."

\$25M reduction from FY10 to FY11 is due to the evolution of programs in Project 675100, Crypto Modernization:

- KG-3X ends development in FY10 and begins production in FY11
- Remote ReKey development ramps down in FY11 as it moves toward production in FY12
- Space Telemetry Tracking & Command - Aerospace Vehicle Equipment (TT&C AVE) ends development and moves into production in late FY10

UNCLASSIFIED

R-1 Line Item #176

Page 2 of 46

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>				PROJECT 674861: <i>AF Electronic Key Management System (AF EKMS)</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674861: <i>AF Electronic Key Management System (AF EKMS)</i>	4.273	2.695	2.540	0.000	2.540	1.860	2.109	2.141	2.172	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The AF EKMS Program consists of multiple developments supporting the Air Force requirements/portion of the DoD EKMS Program. (The National Security Agency (NSA) acts as the Executive Agency for the DoD EKMS Program.) AF EKMS, in concert with the overarching DoD EKMS Program, provides a secure and flexible capability for the electronic generation, distribution, accounting, and management of key material, voice callwords, and communications security (COMSEC) publications for the current generation of DoD Command, Control, Communications, Computers, and Intelligence (C4I) and for current generation of weapon systems. EKMS replaced the previous manual distribution and management system providing cryptographic keying material for U.S. DoD Information Assurance. Information Assurance emphasizes confidentiality, access control, multi-level secure databases, trusted computing and information integrity. AFEKMS has a three-tier hierarchical structure. This tiered structure provides 'wholesale' to 'retail' to 'consumer' capability to distribute, manage and account for COMSEC keying material. Tier 1 installations comprise the wholesale generation and control capability. Tier 2 installations comprise the local distribution network and Tier 3 comprises the retail where keying material leaves the AFEKMS and enters the consumer End Cryptographic Units (ECUs).

EKMS improved protection of national security-related information by substantially enhancing confidentiality, integrity, and non-repudiation characteristics over the legacy manual key management systems. EKMS has and continues to greatly accelerate availability of crypto key materials through electronic transmission versus the manual handling and shipping of materials. While the current EKMS level-of-effort is directed at enhancing current and developing systems, the ultimate goal is for it to provide a temporary bridge to the DoD Key Management Infrastructure (KMI) Capability Increment (CI)-2, and then a migration path to the "full-up" KMI CI-3. Once KMI CI-3, with its advanced key generation/key distribution capability is fielded and operational, KMI interfaces to EKMS will be severed. Beginning KMI CI-2 functionality is expected in 2011. DoD KMI has incurred schedule slips. As a result, the AFEKMS Program continues software development to support emerging requirements during the transition period to KMI. Initially, End User Application Software development represented Tier 2 requirements. The KMI fielding delays warranted combining Tier 2 and Tier 3 development projects as the transition period extended. End User Application Software development ends with the Demand Management Device Power Station (DMD PS) 5.01 release. Common User Application Software (CUAS), DMD and related computer based training continues under Tier 2/3 development for emerging requirements in the FYDP. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This project is in Budget Activity 7, Operational System Development, because it addresses the development and transition of information security, protection, and defensive capabilities and technologies.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 674861: <i>AF Electronic Key Management System (AF EKMS)</i>
--	--	--

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0303140F: <i>Information Systems Security Program, (OPAF)</i>	7.021	20.729	8.834	0.000	8.834	11.500	3.791	4.752	2.616	0.000	0.000

D. Acquisition Strategy

All major contracts within this Project are open to full and open competition with technology knowledge, expertise, and prior experience on similar projects weighted heavily in the evaluation process.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 674861: <i>AF Electronic Key Management System (AF EKMS)</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AFEKMS Program office contractor support for planning and migration to KMI	FFRDC	MITRE San Antonio, TX	5.886	0.238	Jan 2010	0.232	Jan 2011	0.000		0.232	Continuing	Continuing	Continuing
Tier 2/3 Development for emerging requirements (CUAS, DMD, SKL & CBT).	TM	SAIC San Diego, CA	6.936	2.457	Jan 2010	2.308	Jan 2011	0.000		2.308	Continuing	Continuing	Continuing
N/A	TBD/TBD	No text provided No text provided	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			12.822	2.695		2.540		0.000		2.540			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.822	2.695	2.540	0.000	2.540			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

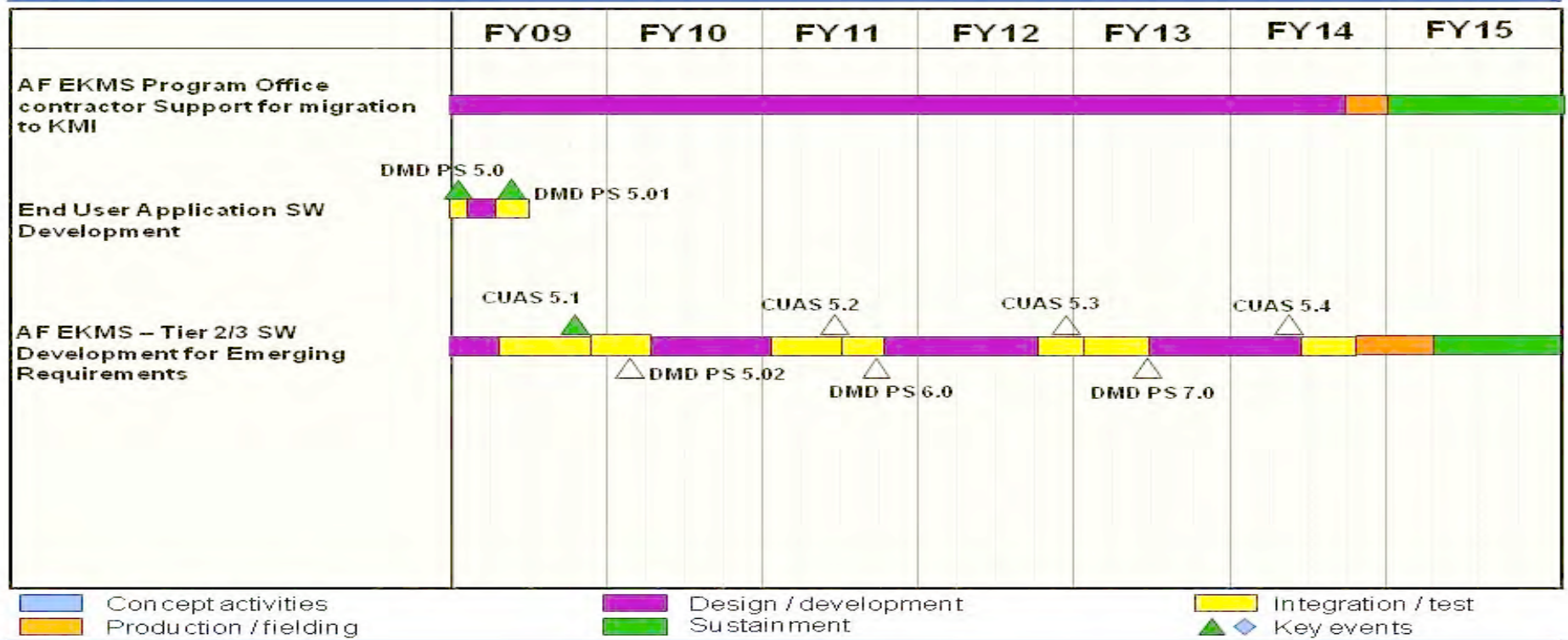
PE 0303140F: *Information Systems Security Program*

PROJECT

674861: *AF Electronic Key Management System (AF EKMS)*



PE 0303140F Project 674861: AFEKMS Program Schedule



PB11R-Docs

Depicted by installation/production flow

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 674861: <i>AF Electronic Key Management System (AF EKMS)</i>
--	--	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
AFEKMS Program office contractor support for planning and migration to KMI	1	2009	4	2011
Complete End User Application Software Development	1	2009	2	2009
Tier 2/3 Development for emerging requirements (CUAS, DMD, SKL and computer based training)	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>				PROJECT 675100: <i>Cryptographic Modernization</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675100: <i>Cryptographic Modernization</i>	129.575	139.673	118.787	0.000	118.787	91.439	98.614	111.487	105.198	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Cryptographic Modernization Program modernizes cryptographic devices protecting critical information across cyber domain operations and national security. In September 2000, the Defense Review Board (DRB) tasked NSA to evaluate the security posture of the cryptographic inventory. Systems with aging algorithms, those approaching non-sustainability, and those generally incompatible with modern key management systems were identified. Priority systems that required immediate replacement were also identified. In addition, NSA documented the need to modernize the cryptographic inventory with capabilities designed to enable network-centric operations. Replacements/modernization of the near-term vulnerable systems must occur within the timeframe specified in Chairman Joint Chiefs of Staff Notice (CJCSN) 6510. The DoD Cryptographic Modernization Program was established to develop a modern cryptographic base that provides assured security robustness, interoperability, advanced algorithms, releasability, programmability, and compatibility with the future Key Management Infrastructure (KMI). The program supports an integrated effort across the cyber domain to transform to next generation cryptographic capabilities providing U.S. forces and multinational and interagency partners the security needed to protect the flow and exchange of operational decision making information IAW national and international policy/standards, the validated operational requirements of the warfighters, and the Intelligence Communities.

The Cryptographic Modernization Program is a collection of projects accomplished in three phases: replacement, modernization, and transformation. The replacement phase of the program focused on updating and/or replacing out-of-date algorithms along with unsustainable cryptographic products. The modernization phase provides a common solution to existing multiple cryptographic end items, as well as updating mid-term aging/unsupportable crypto equipment. Manpower and logistics requirements will be reduced and manpower efficiencies gained, while incremental capability enhancements and footprint reductions are provided. The third phase of the Cryptographic Modernization Program, transformation, provides common joint solutions which enable secure transparent network-centric capabilities across the cyber domain. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This project is in Budget Activity 07, Operational System Development, because it addresses the development and transition of information security, protection, and defensive capabilities and technologies.

NOTES:

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>		PROJECT 675100: <i>Cryptographic Modernization</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: N/A</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>								
<p>MAJOR THRUST: Develop Remote Rekey (CI-33) to replace the CI-13 system with a modernized Type 1 crypto interface with IFF Mode 5 system upgrade at remote/unmanned NORAD and PACAF surveillance sites.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Completed Remote Rekey (CI-33) Cryptographic Modernization concept refinement, secured development contract award and initiated development of complete system.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continue Remote Rekey (CI-33) Cryptographic Modernization development and initiate test efforts of replacement crypto system.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Will complete Remote Rekey (CI-33) Cryptographic Modernization development and test efforts of replacement cryptographic system.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>				14.861	21.411	15.392	0.000	15.392
<p>MAJOR THRUST: Develop Combat Key Generator (KOK-23), a modernized replacement for KOK-13/KOK-13A to generate crypto keys for high speed comm for warfighter integration of battlefield systems/data.</p>				9.254	1.900	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 675100: <i>Cryptographic Modernization</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A						
MAJOR THRUST: Investigate technical solutions to provide upgraded, modernized crypto to secure Space Telemetry Tracking and Commanding [TT&C] and Space Mission Data [SMD] (Broken out in FY10). <i>FY 2009 Accomplishments:</i> In FY 2009: Continued Space Cryptographic Modernization development of TT&C GOE device, concept refinement for TT&C AVE and initiated source selection for SMD development. <i>FY 2010 Plans:</i> In FY 2010: N/A <i>FY 2011 Base Plans:</i> In FY 2011: N/A <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A		35.702	0.000	0.000	0.000	0.000
MAJOR THRUST: Develop and acquire appropriate upgraded, modernized cryptographic devices to secure TT&C functions for all future DoD satellites. <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Continue Space TT&C (Aerospace Vehicle Equipment [AVE] [KG-327] and Ground Operating Equipment [GOE] [KS -252]) development.		0.000	23.113	21.356	0.000	21.356

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>		PROJECT 675100: <i>Cryptographic Modernization</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: Technology Development Requirements (renamed from "Advanced Common Crypto") plans/executes tech maturation and initiates developmental programs to meet emerging warfighter requirements.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Conducted Joint effort with Army to deliver prototype to CENTCOM to support encrypting SUAS. Initiated development for crypto core in support of Battlefield Air Targeting Camera Autonomous Micro Air Vehicle (BATMAV) platform. Continued Secure Crypto Enterprise Management -- renamed to Remote Operations Management of Encryption Units (ROME) -- to support the enterprise management (monitor status, reset, inventory tracking, updates [software, key & algorithm], configuration check and control) of end crypto units for remote site/centralized location to reduce putting airmen in harm's way. Developed ROME standard and socialized concept with users and NSA. Presented and accepted for formal review by the Internet Engineering Task Force (IETF) Supported AF requirements for Type 1 Data at Rest (T1-DAR) (securing data Secret and above) used by AWACS, JSTARS, Rivet Joint.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continue support for the development and NSA certification for SUAS projects for BATMAV and WASP platforms used by AFSOC. Continue to refine ROME standards with feedback from IETF with plans to become IETF standard. Start development of ROME Reference Implementation to prove the concept. Initiate concept refinement of T1-DAR.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Will deliver Type I certified encryption solution to protect digital data link for secure level and below for common data link for SUAS projects e.g. (BATMAV).</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>								
Accomplishments/Planned Programs Subtotals				129.575	139.673	118.787	0.000	118.787

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 675100: <i>Cryptographic Modernization</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0303140F: <i>Information Systems Security Program, (OPAF)</i>	23.086	61.987	58.807	0.000	58.807	94.244	130.313	120.093	25.626	0.000	0.000

D. Acquisition Strategy

The Crypto Modernization portfolio of component acquisition projects is executing using a variety of approaches that vary from an evolutionary acquisition strategy using spiral development (for new component development) to incremental improvement leveraging leading-edge, certified non-developmental items (for modernization). Contract type is selected for each of the individual projects based upon its acquisition approach and its unique technology risks. A mixture of fixed-price and cost-reimbursement contracts have been selected which maximize the best value for the Government as listed in the R-3.

Program Management Administration (PMA) costs are defined as those direct, unique program costs, other than payroll costs for government personnel, which are required for operation of a program office and its management and oversight role. These include costs such as Advisory and Assistance Service (A&AS) (SCS, PASS, ETASS, FFRDC) contracted support to a program office. Under PMA, A&AS personnel support the functions of government personnel in managing a weapon system or common item.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 675100: <i>Cryptographic Modernization</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
KG-3X	C/FFP	Rockwell Collins Cedar Rapids, IA	48.331	1.790	Jan 2010	0.000		0.000		0.000	0.000	50.121	50.121
IFF Mode 5 Crypto	C/FFP	Raytheon Baltimore, MD	46.042	0.000		0.000		0.000		0.000	0.000	46.042	46.042
Remote Rekey (CI-33)	C/CPIF	General Dynamics C4 Systems Needham, MA	20.556	17.117	Nov 2009	12.121	Nov 2010	0.000		12.121	Continuing	Continuing	Continuing
Combat Key Generator (KOK-23)	C/CPIF	General Dynamics C4 Systems Needham, MA	18.881	1.900	Jul 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
VINSON/ANDVT Cryptographic Modernization	Various/ Various	Harris Corp Melbourne, FL, X Technology:San Antonio, TX	8.416	5.929	Jul 2010	32.020		0.000		32.020	Continuing	Continuing	Continuing
Space Crypto Mod (broken out into two projects in FY10)	Various/ Various	General Dynamics C4 Systems Scottsdale, AZ, VIASAT Inc:Carlsbad, CA	95.998	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Space Telemetry, Tracking & Commanding Crypto Mod (TT&C)	Various/ Various	General Dynamics C4 Systems Scottsdale, AZ,	0.000	17.683	Nov 2009	13.851	Nov 2010	0.000		13.851	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 675100: <i>Cryptographic Modernization</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		VIASAT Inc:Carlsbad, CA, TBD:TBD											
Space Mission Data Crypto Mod	TBD/TBD	TBD TBD	0.000	8.810	Apr 2010	24.027	Nov 2010	0.000		24.027	Continuing	Continuing	Continuing
F22A Multi Function Crypto (KOV 50)	MIPR	ASC/YFAA Wright-Patterson AFB OH	11.898	4.780	Feb 2010	3.200	Feb 2011	0.000		3.200	Continuing	Continuing	Continuing
Concept Refinement Requirements (previously named Studies & Analyses)	Various/ Various	Air Force Research Laboratory Rome NY, MIT Lincoln Lab:Boston MA, Space and N...	43.191	30.320	Feb 2010	8.037	Feb 2011	0.000		8.037	Continuing	Continuing	Continuing
Technology Development Requirements (previously named Advanced Common Crypto)	TBD/TBD	TBD TBD	90.591	22.521	Feb 2010	5.206	Feb 2011	0.000		5.206	Continuing	Continuing	Continuing
Subtotal			383.904	110.850		98.462		0.000		98.462			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>				PROJECT 675100: <i>Cryptographic Modernization</i>					

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration (PMA)	Various/ Various	Various Various	42.475	19.616		12.505		0.000		12.505	Continuing	Continuing	Continuing
Subtotal			42.475	19.616		12.505		0.000		12.505			

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
KG-3X	MIPR	TBD 346th TS	1.537	1.221		0.000		0.000		0.000	0.000	2.758	2.758
IFF	MIPR	TBD 346th TS	3.853	0.000		0.000		0.000		0.000	0.000	3.853	3.833
Remote Rekey (CI-33)	MIPR	TBD;46th TS 605th TES, AFOTEC	1.766	1.987		2.236		0.000		2.236	Continuing	Continuing	Continuing
Combat Key Generator KOK-23	MIPR	TBD 605th TES	2.914	0.000		0.000		0.000		0.000	0.000	2.914	2.914
VINSON/ANDVT Crypto Mod	MIPR	TBD 46th TS, 605th TES	0.211	0.912		1.013		0.000		1.013	Continuing	Continuing	Continuing
Space Crypto Mod	MIPR	TBD	8.010	0.000		0.000		0.000		0.000	0.000	8.010	8.010

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>					PROJECT 675100: <i>Cryptographic Modernization</i>				

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		46th TS											
Space TT&C	MIPR	TBD 46th TS	0.000	2.168		2.249		0.000		2.249	Continuing	Continuing	Continuing
Space MD	MIPR	TBD 46th TS, AFOTEC	0.000	1.987		2.316		0.000		2.316	Continuing	Continuing	Continuing
Technnology Development Requirements	TBD/TBD	TBD TBD	0.973	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Government Furnished Equipment (GFE) KG-3X	TBD/TBD	TBD TBD	1.000	0.000		0.000		0.000		0.000	0.000	1.000	0.000
Government Furnished Equipment (GFE) RRK	TBD/TBD	TBD TBD	0.077	0.000		0.000		0.000		0.000	0.000	0.077	0.000
Government Furnished Equipment (GFE) VACM	TBD/TBD	TBD TBD	0.222	0.926		0.000		0.000		0.000	0.000	1.148	0.000
Concept Refinement (Engineering Support)	TBD/TBD	TBD TBD	0.011	0.006		0.006		0.000		0.006	0.000	0.023	1.000
Subtotal			20.574	9.207		7.820		0.000		7.820			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	446.953	139.673	118.787	0.000	118.787			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 675100: <i>Cryptographic Modernization</i>
--	--	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

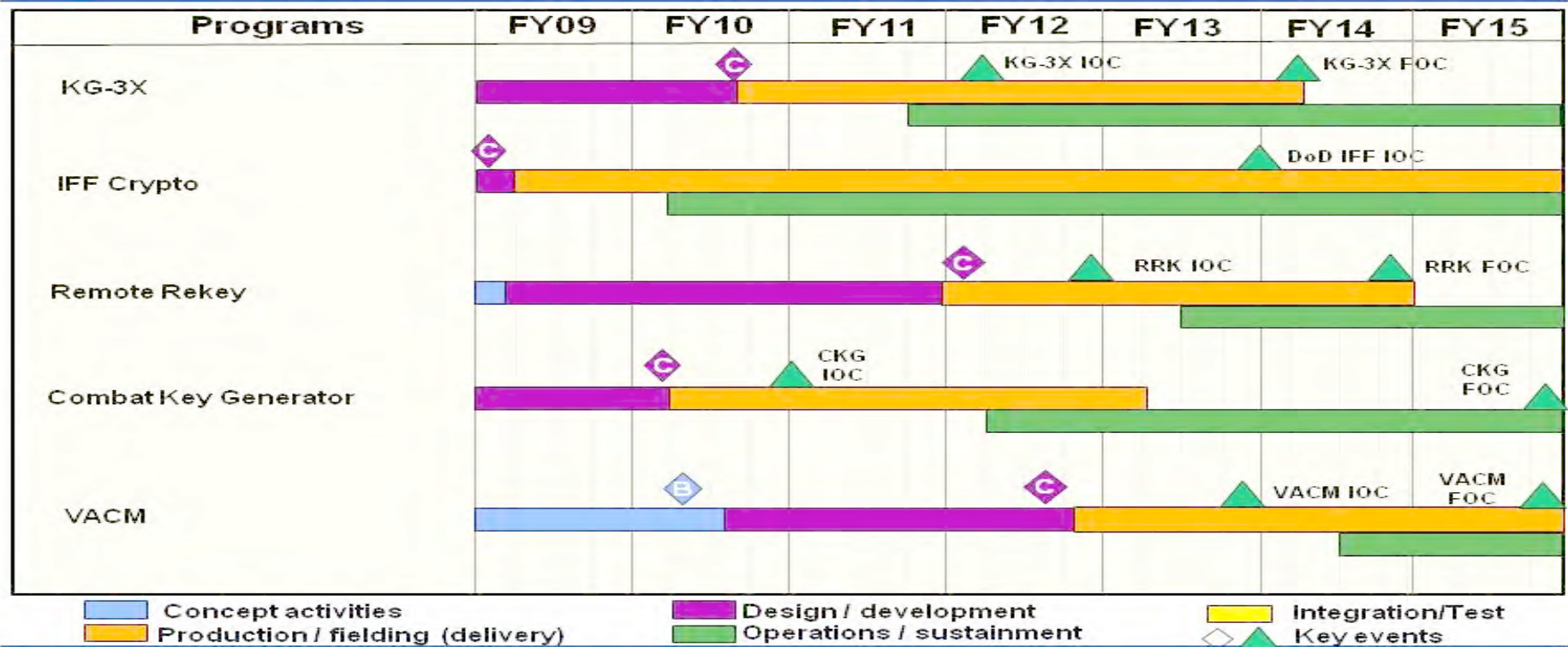
PE 0303140F: Information Systems Security Program

PROJECT

675100: Cryptographic Modernization



PE 0303140F Project 675100: Crypto Mod Program Schedule (1 of 2)



PB11 R-Docs

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

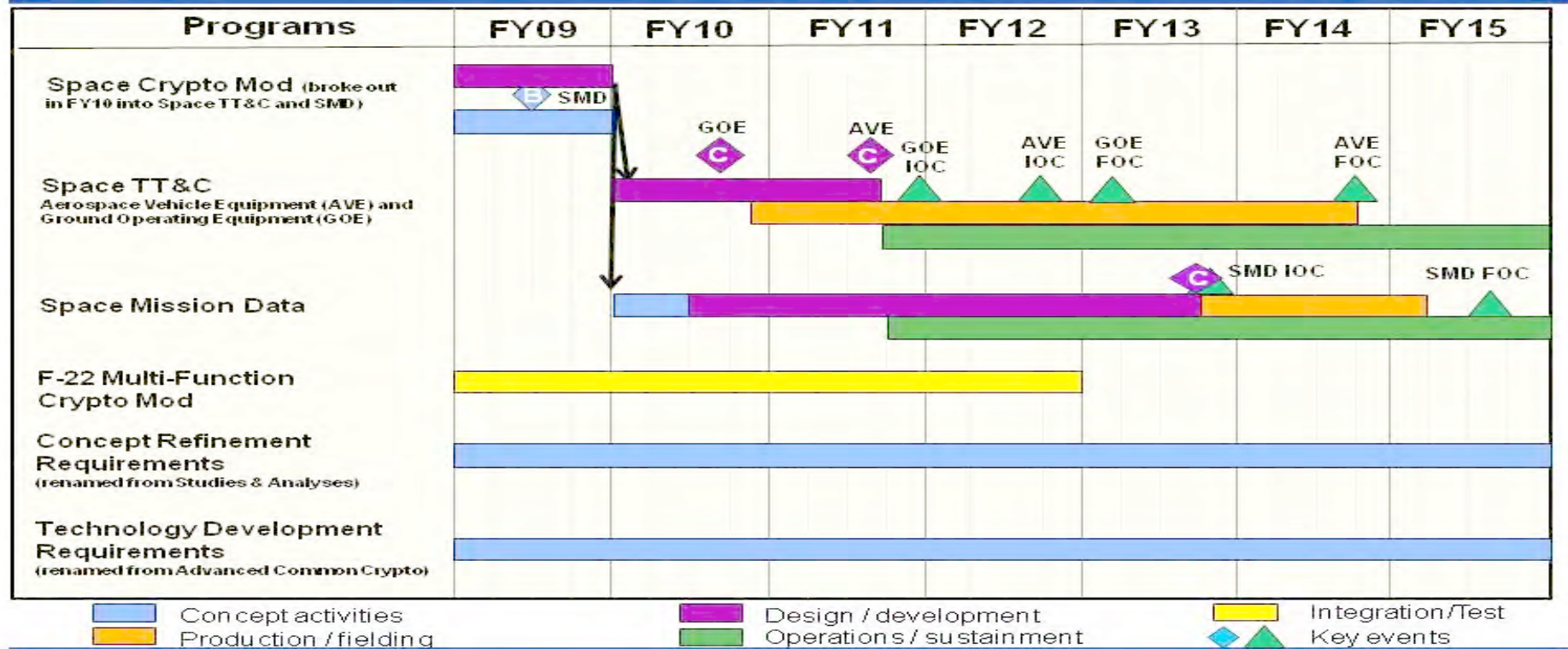
PE 0303140F: Information Systems Security Program

PROJECT

675100: Cryptographic Modernization



PE 0303140F Project 675100: Crypto Mod Program Schedule (2 of 2)



PB11 R-Docs

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 675100: <i>Cryptographic Modernization</i>
--	--	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Complete KG-3X CM development and test efforts	1	2009	3	2010
Completed IFF Mode 5 Crypto development and testing	1	2009	1	2009
Continue Remote Rekey (replacement for CI-13) CM concept refinement and development	1	2009	4	2011
Complete Combat Key Generator concept refinement and continue concept development	1	2009	4	2010
Complete VINSON-ANDVT Cryptographic Modernization (VACM) concept refinement and continue development (Includes Stand Alone and Embedded Concept Studies)	1	2009	4	2011
Breakout Space CM in FY10: (The following two projects broken out in FY10)	1	2009	4	2009
Continue Space Telemetry Tracking and Commanding (Aerospace Vehicle Equipment [AVE], KG-327, and Ground KS-252)	1	2010	4	2011
Continue Space Mission Data EMD (KG-88)	1	2010	4	2011
Continue F-22 Multi Function Crypto (CM development of KOV-50)	1	2009	4	2011
Continue Concept Refinement Requirements (previously named Studies & Analyses)	1	2009	4	2011
Continue Technology Development Requirements (previously named Advanced Common Crypto Modernization)	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 675231: <i>AF Key Management Infrastructure (AF KMI)</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675231: <i>AF Key Management Infrastructure (AF KMI)</i>	8.602	15.567	15.369	0.000	15.369	20.796	12.012	8.219	8.345	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Air Force Key Management Infrastructure (AF KMI) Program consists of multiple developments supporting the AF requirements/portion of the DoD Key Management Infrastructure (KMI). (The National Security Agency [NSA] acts as the Executive Agency for the DoD KMI Program.) AF KMI, in concert with this overarching DoD KMI Program, will provide a secure and flexible capability for the electronic generation, distribution, accounting, and management of: key material and other communications security (COMSEC) materials for all DoD Command, Control, Communications, Computers, and Intelligence (C4I) and for the Services' weapon systems. KMI represents a broad-scale replacement of the current Electronic Key Management System (EKMS). The new KMI will provide capabilities that will allow networked operation in consonance with the Global Information Grid (GIG) and other DoD, fellow Service, and AF enterprise objectives. It thereby will assure a viable support infrastructure for future weapons and C4I programs to incorporate key management into their system designs.

The DoD KMI will greatly improve protection of national, security-related information by substantially enhancing confidentiality, integrity, and non-repudiation characteristics over the legacy EKMS key management system. KMI will greatly accelerate the availability of crypto key materials through electronic transmission versus shipping of materials, will enhance mission responsiveness and flexibility, and will take the man "out-of-the-loop" in the distribution of crypto key materials.

The AF Key Management Infrastructure (KMI) Program's R&D efforts will include: building the AF KMI architecture; defining all of its linkages; building the linkage interfaces that will allow them to communicate; and other "last mile" development (See NOTES below for detailed explanation of the "last mile" work.). Activities also include an integration laboratory and studies and analysis to support both current program planning and execution and future program planning.

This project is in Budget Activity 7, Operational System Development, because it addresses the development and transition of information security, protection, and defensive capabilities and technologies.

NOTES:

1. In parallel, DoD and the Services are developing a new generation of End Crypto Units (ECUs) under the Joint Crypto Modernization Initiative that will be capable of direct interaction with the KMI. (PE0303140F, Project 675100, Cryptographic Modernization, supports this initiative). In some cases these new ECUs, although needing to be supported by KMI, will not be KMI network-connected. "Last mile" transport of black (aka benign, or encrypted) and red (unencrypted) keying material

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 675231: <i>AF Key Management Infrastructure (AF KMI)</i>
--	--	--

from a KMI client to a new generation ECU or current legacy ECU will need to be handled in the early years by data transfer devices. CPSG and NSA are exploring new key delivery methods for KMI CI-3: "Mobile" clients that can be brought out to platforms and remote ECUs; a new COMSEC material loader that will works with KMI and incorporates netcentricity; and a method called "over-the-air-keying (OTAK)" to ultimately replace the current data transfer devices.

2. Last Mile Development - F-22 Concept Refinement generated the F-22 SKL wireless initiative.
3. "Web-based Key Transfer to Aircraft" project was renamed "Black Data Distribution System" to better define the project and end product.
4. "Single point keying capability development" was renamed "Single point fill capability development."
5. "Architectural planning and migration support" is clarified as indirect mission support versus direct product development support.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: Program management support to include architectural planning, systems engineering, and studies and analyses for Migration to Key Management Infrastructure (includes acquisition planni...</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Continued architectural planning, systems engineering, and studies and analyses for Migration to Key Management Infrastructure.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continue architectural planning, systems engineering, and studies and analyses for Migration to Key Management Infrastructure.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Will continue architectural planning, systems engineering, and studies and analyses for Migration to Key Management Infrastructure.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>	3.579	3.930	3.943	0.000	3.943
<p>MAJOR THRUST: Next generation Last Mile Systems development & Concept Refinement, and risk mitigation: End user key delivery devices; user node application software; and related computer-based tra...</p>	5.023	3.927	2.520	0.000	2.520

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>		PROJECT 675231: <i>AF Key Management Infrastructure (AF KMI)</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2009 Accomplishments:</i> In FY 2009: Investigated the added capabilities and projects needed by the warfighter to support KMI. Supported "last mile" distribution that will have to be updated as appropriate with provisions for where operational demands dictate or to support transition and physical distribution mechanisms. Researched new concepts for key delivery. Optimized F-22 SKL-Wireless (SKL-W) operation and completed its development effort.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Investigate the added capabilities and projects needed by the warfighter to support KMI. Continue to study requirements for "last mile" distribution. Research new concepts for key delivery. Install the wireless infrastructure at the F-22 bases to allow SKL-W communications to the COMSEC accounts.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Will continue to investigate the added capabilities and projects needed by the warfighter to support KMI. Will conduct updates as appropriate for the "last mile" distribution. Will continue to research new concepts for key delivery.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>								
<p>MAJOR THRUST: Next generation fill device development (broken out from Last Mile Systems Development in FY10)</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: N/A</p>				0.000	2.354	2.662	0.000	2.662

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>		PROJECT 675231: <i>AF Key Management Infrastructure (AF KMI)</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Will continue development of the KOV-21 follow-on engine. Additional efforts will include competitive prototyping of a future Key Loading Device Crypto Engine.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>								
<p>MAJOR THRUST: Legacy ECU Adapter - allows all Cryptographic Key Fill Devices to fill both legacy ECUs (with traditional key material) and future KMI-aware ECUs. The adapter shall have multiple con...</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: N/A</p> <p><i>FY 2010 Plans:</i> In FY 2010: N/A</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Will initiate design of Legacy ECU adapter.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>				0.000	0.000	1.174	0.000	1.174
Accomplishments/Planned Programs Subtotals				8.602	15.567	15.369	0.000	15.369

UNCLASSIFIED

R-1 Line Item #176

Page 32 of 46

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 675231: <i>AF Key Management Infrastructure (AF KMI)</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0303140F: <i>Information Systems Security Program, (OPAF)</i>	0.000	0.000	1.731	0.000	1.731	7.560	12.641	11.706	19.623	0.000	0.000

D. Acquisition Strategy

All major contracts within this Project are awarded after full and open competition. Evolutionary Acquisition with Spirals being fielded in Capability Increments.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 675231: <i>AF Key Management Infrastructure (AF KMI)</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Architectural Planning and Migration to KMI Infrastructure	FFRDC	MITRE San Antonio, TX	2.142	0.715	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Studies & Analyses & Systems Engineering	FFRDC	MITRE San Antonio, TX	1.459	0.954	Jan 2010	1.027	Jan 2011	0.000		1.027	Continuing	Continuing	Continuing
Operational Capability Engineering Direct Mission Support	TM	Jacobs Engineering San Antonio, TX	0.000	0.000		0.401	Jan 2011	0.000		0.401	Continuing	Continuing	Continuing
KMI Last Mile Development/ Concept Refinement, Risk Mitigation	TBD/TBD	TBD TBD	8.092	3.927	Jan 2010	2.520	Jan 2011	0.000		2.520	Continuing	Continuing	Continuing
Next Generation Fill Device Development	TBD/TBD	TBD TBD	0.000	2.354	Jan 2010	2.662	Jan 2011	0.000		2.662	Continuing	Continuing	Continuing
Single Point Fill Keying Capability Development	TBD/TBD	TBD TBD	0.000	1.355	Jan 2010	1.108	Jan 2011	0.000		1.108	Continuing	Continuing	Continuing
Black Data Distribution System	TM	SAIC San Diego, CA	0.000	3.500	Jan 2010	2.700	Jan 2011	0.000		2.700	Continuing	Continuing	Continuing
KOV-21 Follow-on Engine Development	TBD/TBD	TBD TBD	0.000	0.501	Jan 2010	1.262	Jan 2011	0.000		1.262	Continuing	Continuing	Continuing
Legacy ECU Adapter Design (broken out from Last Mile)	TBD/TBD	TBD TBD	0.000	0.000		1.174	Jan 2011	0.000		1.174	Continuing	Continuing	Continuing
Subtotal			11.693	13.306		12.854		0.000		12.854			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 675231: <i>AF Key Management Infrastructure (AF KMI)</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
Product development for "Last Mile" under the KMI Project 675231 is expanded to include web-based keying for wide aircraft as a result of the F-22 concept development/refinement and the follow-on crypto engine for the next generation fill device(s).

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Architectural Planning & Migration to the KMI Infrastructure	FFRDC	MITRE San Antonio, TX	0.000	0.000	Jan 2010	0.636	Jan 2011	0.000		0.636	Continuing	Continuing	Continuing
System Administrator	TM	General Dynamics San Antonio, TX	0.240	0.148	Jul 2010	0.153	Jul 2011	0.000		0.153	Continuing	Continuing	Continuing
Professional Acquisition Support Services	TM	P. E. Systems San Antonio, TX	1.699	1.548	Feb 2010	1.563	Feb 2011	0.000		1.563	Continuing	Continuing	Continuing
Engineering & Technical Acquisition Support Service	TM	Jacobs Engineering San Antonio, TX	0.591	0.565	Jan 2010	0.163	Jan 2011	0.000		0.163	Continuing	Continuing	Continuing
Subtotal			2.530	2.261		2.515		0.000		2.515			

Remarks
Prior year acquisition support was provided on the ITSP II contract by Booz, Allen, Hamilton, San Antonio, TX.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 675231: <i>AF Key Management Infrastructure (AF KMI)</i>
--	--	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.223	15.567	15.369	0.000	15.369			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

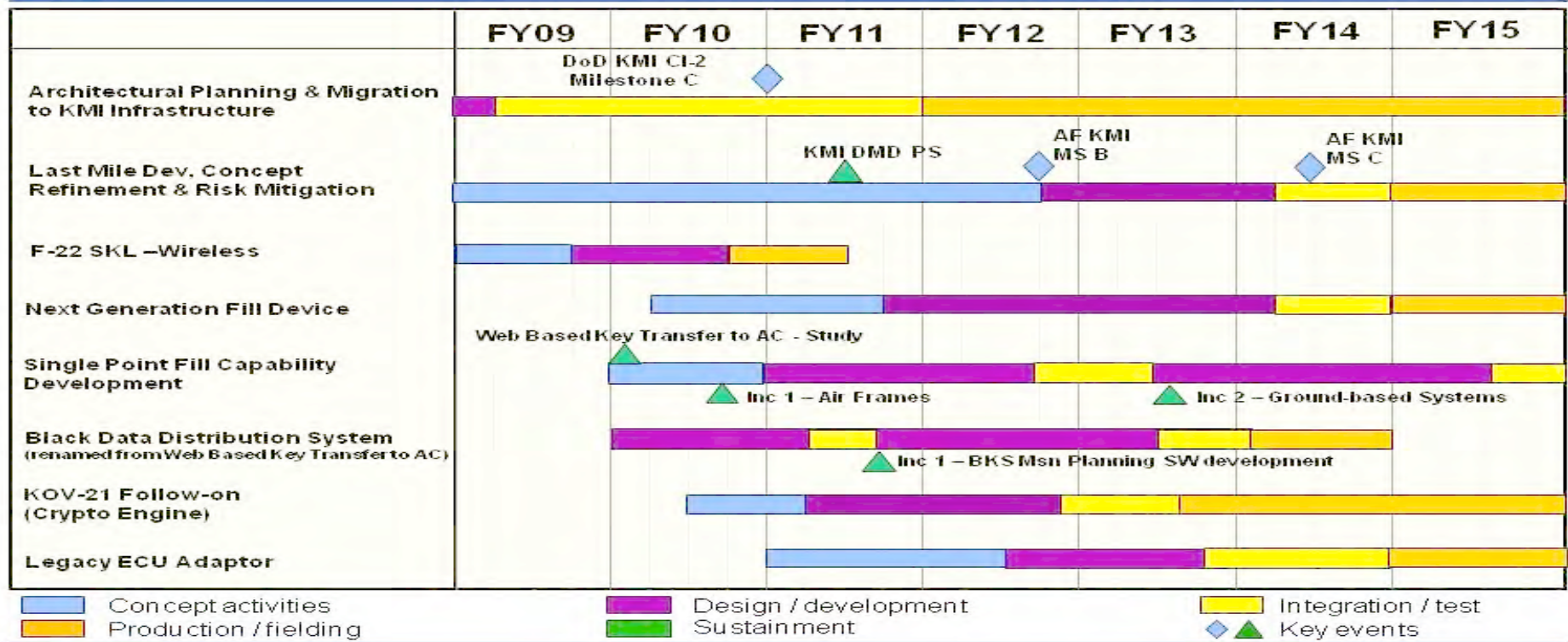
PE 0303140F: *Information Systems Security Program*

PROJECT

675231: *AF Key Management Infrastructure (AF KMI)*



PE 0303140F Project 675231: KMI Program Schedule



PB11 R-Docs

Depicted by installation/production flow

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 675231: <i>AF Key Management Infrastructure (AF KMI)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Architectural Planning & Migration to the KMI Infrastructure	1	2009	4	2011
KMI Last Mile Development, Concept Refinement and Risk Mitigation	1	2009	4	2011
F-22 SKL--Wireless	1	2009	2	2011
Next Generation Fill Device Development	2	2010	4	2011
Single Point Fill Capability Development	1	2010	4	2011
Black Data Distribution System Development	1	2010	4	2011
KOV-21 Follow-on Engine	3	2010	4	2011
Legacy ECU Adapter	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>				PROJECT 677820: <i>Computer Security RDT&E: Firestarter</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
677820: <i>Computer Security RDT&E: Firestarter</i>	20.365	7.466	3.321	0.000	3.321	3.749	4.299	4.390	4.568	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Firestarter program provides technical transition opportunities for research in the area of Information Assurance (IA) technologies and tools needed to defend Air Force Command, Control, Communications, Computer, and Intelligence (C4I) systems from computer network attacks, and ensure recovery in the event of an attack. As one of the Air Force managers for IA R&D, the PMO ensures that the emphasis of the program is directed toward computer and network systems security; damage assessment and recovery; cyber threat recognition, attribution, and mitigation; and active response methodologies. These areas of emphasis are realized through research and development in the areas of: cyberspace surveillance; cyber indications and warning (CI&W); high-speed and host-based intrusion detection; fusion and correlation of cyber intelligence; decision support; recovery; digital forensics; active response, etc. Current Air Force systems, such as the Combat Information Transport System/Base Information Protection (CITS/BIP) leverage this technology to meet their information assurance needs/requirements. Additionally, this program utilizes IA and cyber technology investments by the Defense Advanced Research Projects Agency (DARPA), the National Security Agency (NSA), Department of National Intelligence (DNI), Intelligence Advanced Research Projects Activity (IARPA), and the Department of Homeland Security (DHS) to jump-start its development of solutions to existing Air Force IA and cyber requirements. This program coordinates and cooperates with the JTF-GNO, STRATCOM, DISA, NSA and other services to ensure Global Information Grid (GIG) IA requirements are being met. Activities performed include those designed to identify, analyze, test, acquire, and integrate emerging IA technology into all regions of the GIG - terrestrial, airborne, and space systems. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development, because it addresses the development and transition of information security, protection, and defensive capabilities and technologies.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Cyber forensic tools & methodologies. Includes: Initial metrics for reliable info assurance; secure coalition IA data management, collaboration and visualization; analysis of cyber...	3.550	2.134	1.020	0.000	1.020

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>		PROJECT 677820: <i>Computer Security RDT&E: Firestarter</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Will extend development and implementation of a terrestrial network defense overarching strategy realized through various US Government IA research programs.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>								
Accomplishments/Planned Programs Subtotals				17.263	7.466	3.321	0.000	3.321
				FY 2009	FY 2010			
<p>Congressional Add: Initiated/Completed Remote Suspect Identification.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Demonstrated and delivered the 2nd generation DiBiS tool to address the unique requirements for applying Biometrics to link a computer system directly to the user, using the computer. Worked with stakeholders to identify pilot organizations to help test the system, capture metrics, as well as provide operational or mission focused requirements for the tool.</p> <p><i>FY 2010 Plans:</i> In FY 2010: N/A</p>				3.102	0.000			
Congressional Adds Subtotals				3.102	0.000			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 677820: <i>Computer Security RDT&E: Firestarter</i>

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (10795): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

All major contracts within this project are awarded after full and open competition utilizing evolutionary capability and incremental development.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>					PROJECT 677820: <i>Computer Security RDT&E: Firestarter</i>				

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
FFRDC (MITRE)	C/CPFF	Various Various	24.384	0.250	Jan 2010	0.600	Jan 2011	0.000		0.600	Continuing	Continuing	Continuing
Multiple Contractors	C/CPFF	Various Various	130.944	5.244	Jan 2010	1.821	Jan 2011	0.000		1.821	Continuing	Continuing	Continuing
Multiple Universities	C/CPFF	Various Various	17.326	1.972	Jan 2010	0.900	Jan 2011	0.000		0.900	Continuing	Continuing	Continuing
Subtotal			172.654	7.466		3.321		0.000		3.321			

Remarks

Multiple contractors & multiple universities reflect on-going efforts with over a dozen contractors & universities. Each has a different contract date depending on when that particular contract was awarded.

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	172.654	7.466	3.321	0.000	3.321			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0303140F: *Information Systems Security Program*

PROJECT

677820: *Computer Security RDT&E: Firestarter*



PE 0303140F Project 677820: Firestarter Program Schedule



Design / development
 Initiate/Complete
 Spiral Release
 Key events

PB11 R-Docs

Depicted by installation/production flow

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140F: <i>Information Systems Security Program</i>	PROJECT 677820: <i>Computer Security RDT&E: Firestarter</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Continue Cyber forensic tools and methodologies	1	2009	4	2011
Continue Cyber Threat Recognition	1	2010	4	2011
Continue Cyber Threat Attribution and Mitigation	1	2010	4	2011
Continue Transition of DARPA/DTO/IARPA/DHS information assurance (IA) technology into AF Information Protection, Detection, & Response architecture	1	2009	4	2011
Initiated/Completed Remote Suspect Identification (FY09 Congressional Add)	1	2009	4	2009

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141F: <i>Global Combat Support System (GCSS)</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	8.613	3.319	3.393	0.000	3.393	0.000	0.000	0.000	0.000	Continuing	Continuing
675046: <i>Systems Engineering & Integration</i>	8.613	3.319	3.393	0.000	3.393	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Global Combat Support System-Air Force (GCSS-AF) will provide the warfighter and supporting elements with timely, accurate, and trusted Agile Combat Support (ACS) information. This information will have the appropriate level of security needed for the Air Expeditionary Forces (AEF) to execute the Air Force mission throughout the full spectrum of military operations.

The GCSS-AF program modernizes, consolidates, develops, and integrates Air Force and Department of Defense combat support information systems. The modernized system is being developed in compliance with and hosted on the Network Centric Enterprise Systems, replacing the Defense Information Infrastructure (DII) Common Operating Environment (COE). The modernized system is implemented and sustained worldwide and supports both wartime and peacetime requirements using hardware, software, and communications capabilities available from standard open systems government contracts and communications infrastructure programs. In this manner, GCSS-AF avoids added costs, removes business processing inefficiencies, reduces deployment footprint, and improves the speed with which information flows. Continued test and evaluation is critical to avoid technical obsolescence of this critical infrastructure and includes studies and analysis to support both current program planning and execution and future program planning. This program is in Budget Activity 7, Operational System Development, because the program modernizes Automated Information Systems (AIS).

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141F: <i>Global Combat Support System (GCSS)</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	5.744	3.727	0.000	0.000	0.000
Current President's Budget	8.613	3.319	3.393	0.000	3.393
Total Adjustments	2.869	-0.408	3.393	0.000	3.393
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	-0.056			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	2.869	-0.352	3.393	0.000	3.393

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 675046: *Systems Engineering & Integration*

Congressional Add: *Tech Order Optimization.*

Congressional Add Subtotals for Project: 675046

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	1.403	0.000
	1.403	0.000
	1.403	0.000

Change Summary Explanation

As GCSS-AF moves into sustainment, it has reduced needs for RDT&E funding. The ramp down noted from FY09 to FY10 reflects the reduced need. The Air Force added \$3M in FY09 to support the continued engineering and test support necessary to allow for mutually supporting compatibility among emerging applications and infrastructure, explicitly the Initial Infrastructure Build (IIB) and the Singularly Managed Infrastructure with Enterprise Level Security (SMIELS) pilot and further ensure continued warfighter support over the GCSS-AF infrastructure; and for the evaluation of the secure cloud computing requirements for the Air Force.

UNCLASSIFIED

R-1 Line Item #177

Page 2 of 10

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0303141F: <i>Global Combat Support System (GCSS)</i>				PROJECT 675046: <i>Systems Engineering & Integration</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675046: <i>Systems Engineering & Integration</i>	8.613	3.319	3.393	0.000	3.393	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Global Combat Support System - Air Force (GCSS-AF) is an umbrella program to develop a modern integrated system that provides for Agile Combat Support (ACS) for the Air Force. This information is necessary to train, equip, deploy, employ, sustain and redeploy Air Expeditionary Forces (AEF) worldwide during peace and war and support the warfighting Combatant Commanders. The GCSS-AF architecture is an integrated set of system products that orchestrate the passing of combat support data between applications and software objects, and provides the warfighter real-time access to accurate, current information and decision support tools. It is based on open standard technologies. Included are efforts such as hardware and software engineering; modeling and simulation; design optimization; hardware and software commercial off the shelf (COTS) analysis; and architecture design. Other standard technologies include architecture and integration framework interface definitions, standards and descriptions; system engineering; software and hardware integration; testing; and other special studies as required. Other efforts included to successfully enable application and cross-application capabilities are requirements analysis, interface analysis, and modeling and simulation. Also included are developing guidelines for application developers, technical support to application developers, technical integration, prototyping, application interface testing, architecture testing of applications and common services, support for business process reengineering, and developing common services for application utilization.

This program is in Budget Activity 7, Operational System Development, because the program modernizes Automated Information Systems (AIS).

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Integration Framework (IF) Development, Engineering Support, Test and Evaluation, Program Management, and Operations directly related to Test and Evaluation efforts. <i>FY 2009 Accomplishments:</i> In FY 2009: Continued test and evaluation of COTS (Commercial Off The Shelf) products as vendors change their supported baseline and drive changes to the currently sustained increment of GCSS-AF.	7.210	3.319	3.393	0.000	3.393

UNCLASSIFIED

R-1 Line Item #177

Page 3 of 10

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0303141F: <i>Global Combat Support System (GCSS)</i>		PROJECT 675046: <i>Systems Engineering & Integration</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>This includes studies and analysis to support both current and future program planning and execution. Evaluated a Secure Cloud Computing Environment with capabilities suitable for use on classified networks and developed a Return On Investment (ROI) report for the deployment of the secure cloud for the Air Force. The AF also studied an Initial Infrastructure Build (IIB) Pilot to evaluate concepts associated with a Singularly Managed Infrastructure (SMI) with an Enterprise Level Security (ELS).</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continued test and evaluation of COTS (Commercial Off The Shelf) products as vendors change their supported baseline and drive changes to the currently sustained increment of GCSS-AF. Evaluate Cloud Computing and IIB to develop executable and cost effective options to the deployed GCSS-AF baseline.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Extend test and evaluation efforts to exploit COOP capability and better balance GCSS-AF loads. Continued test and evaluation of COTS (Commercial Off The Shelf) products as vendors change their supported baseline and drive changes to the currently sustained increment of GCSS-AF.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>								
Accomplishments/Planned Programs Subtotals				7.210	3.319	3.393	0.000	3.393
				FY 2009	FY 2010			
Congressional Add: Tech Order Optimization.				1.403	0.000			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141F: <i>Global Combat Support System (GCSS)</i>	PROJECT 675046: <i>Systems Engineering & Integration</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
<p><i>FY 2009 Accomplishments:</i> In FY 2009: Advanced Tech Order Optimization by developing a business case for a modernized TO environment and implemented COTS tools and technologies that leverage lean processing procedures.</p> <p><i>FY 2010 Plans:</i> In FY 2010: N/A</p>		
Congressional Adds Subtotals	1.403	0.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0303141F: <i>Global Combat Support System, (O&M)</i>	57.080	66.815	100.652	0.000	100.652	61.079	63.341	66.262	68.976	0.000	0.000
• PE 0303141F (1): <i>Global Combat Support System, (OPAF)</i>	2.643	16.941	17.110	0.000	17.110	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

GCSS-AF is an ACAT III program delegated to the Program Executive Office (PEO) for Command and Control and Combat Support (PEO C2&CS) for acquisition oversight. The preponderance of GCSS-AF development, that is system engineering, design, and installation, was provided for in the Indefinite Delivery/Indefinite Quantity (ID/IQ) contract with Firm-Fixed-Price (FFP), Cost Reimbursable (CR), Cost-Plus-Fixed-Fee (CPFF), Cost-Plus-Award-Fee (CPAF), and Labor-Hour (LH) Contract Line Item Numbers (CLINs), awarded after full and open competition in 1996. While the Air Force competes a new contract to support the fielded capability and continue required test and evaluation efforts for GCSS-AF capabilities, the program uses a bridge vehicle, that is an ID/IQ contract with FFP, CPFF, and CR CLINs, issued December 09, 2009, with Lockheed Martin Corporation of Endicott, NY.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

R-1 Line Item #177

Page 5 of 10

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141F: <i>Global Combat Support System (GCSS)</i>	PROJECT 675046: <i>Systems Engineering & Integration</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Integrated Framework Development (Prime Contractor)	C/Various	Lockheed Martin IT Endicott, NY	58.219	2.200	Oct 2009	2.307	Oct 2010	0.000		2.307	Continuing	Continuing	Continuing
Engineering Support	FFRDC	Mitre Corporation Boston, MA	4.938	0.700	Oct 2009	0.723	Oct 2010	0.000		0.723	Continuing	Continuing	Continuing
Secure Cloud Computing	SS/FFP	INTERNATIONAL BUSINESS MACHINES CORPORATION IBM 12902 FEDERAL SYSTEMS PAR Fairfax, VA	1.300	0.000		0.000		0.000		0.000	Continuing	Continuing	1.300
IIB	C/Various	VARIOUS VARIOUS	2.050	0.000		0.000		0.000		0.000	Continuing	Continuing	3.000
Tech Order Optimization	C/Various	Lockheed Martin IT Owego, NY	2.565	0.000		0.000		0.000		0.000	0.000	2.565	2.565
Subtotal			69.072	2.900		3.030		0.000		3.030			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141F: <i>Global Combat Support System (GCSS)</i>	PROJECT 675046: <i>Systems Engineering & Integration</i>
--	---	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Evaluation	MIPR	VARIOUS VARIOUS	5.197	0.000		0.190	Oct 2010	0.000		0.190	Continuing	Continuing	Continuing
Subtotal			5.197	0.000		0.190		0.000		0.190			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management and Operations	Various/ Various	VARIOUS VARIOUS	5.027	0.419	Oct 2009	0.173	Oct 2010	0.000		0.173	Continuing	Continuing	Continuing
Subtotal			5.027	0.419		0.173		0.000		0.173			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	79.296	3.319		3.393		0.000		3.393			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

R-1 Line Item #177

Page 7 of 10

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

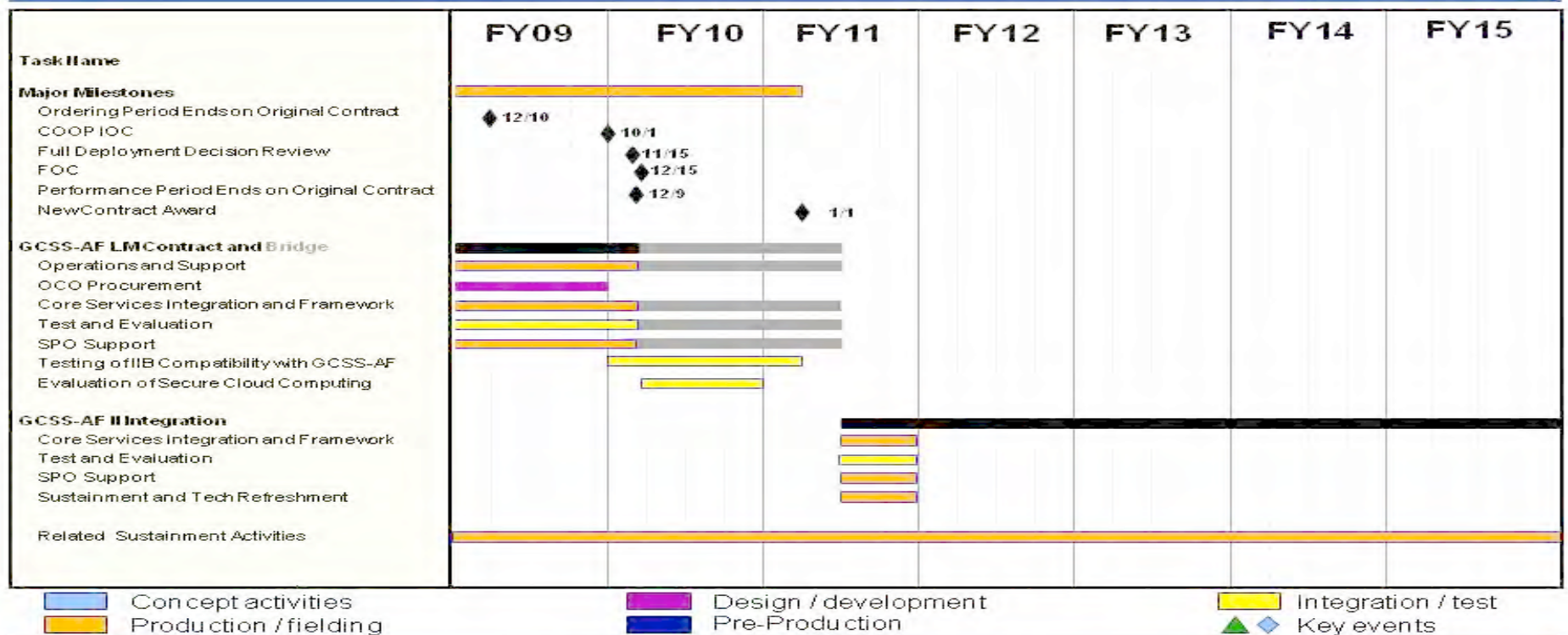
PE 0303141F: *Global Combat Support System (GCSS)*

PROJECT

675046: *Systems Engineering & Integration*



Global Combat Support System – Air Force



Concept activities
 Production / fielding
 Design / development
 Pre-Production
 Integration / test
 ◆ Key events

PB11 R-DOCS

Depicted by installation/production flow

UNCLASSIFIED

R-1 Line Item #177

Page 8 of 10

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141F: <i>Global Combat Support System (GCSS)</i>	PROJECT 675046: <i>Systems Engineering & Integration</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Major Milestones	1	2009	2	2011
Ordering Period Ends on Original Contract	1	2009	1	2009
COOP IOC	1	2010	1	2010
Full Deployment Decision Review (FDDR)	1	2010	1	2010
Full Operational Capability (FOC)	1	2010	1	2010
Performance Period Ends on Original Contract	1	2010	1	2010
New Contract Award	2	2011	2	2011
Original GCSS-AF/Lockheed Martin Contract and Bridge	1	2009	2	2011
Operations and Support	1	2009	2	2011
OCO Procurement	1	2009	4	2009
Core Services Integration and Framework	1	2009	2	2011
Test and Evaluation	1	2009	2	2011
SPO Support	1	2009	2	2011
Testing of IIB Compatibility with GCSS-AF	1	2010	1	2011
Evaluation of Secure Cloud Computing	1	2010	4	2010
GCSS-AF II Integration	2	2011	4	2011
Core Services Integration and Framework (1)	2	2011	4	2011
Test and Evaluation (2)	2	2011	4	2011

UNCLASSIFIED

R-1 Line Item #177

Page 9 of 10

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141F: <i>Global Combat Support System (GCSS)</i>	PROJECT 675046: <i>Systems Engineering & Integration</i>

Event	Start		End	
	Quarter	Year	Quarter	Year
SPO Support (3)	2	2011	4	2011
Sustainment and Tech Refreshment	2	2011	4	2011
Related Sustainment Activities	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303150F: <i>WWWCCS/GLOBAL COMMAND & CONTROL SYSTEM</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	3.124	6.279	3.055	0.000	3.055	3.100	3.148	3.195	3.242	Continuing	Continuing
674667: <i>Global Command and Control System - AF</i>	3.124	6.279	3.055	0.000	3.055	3.100	3.148	3.195	3.242	Continuing	Continuing

Note

In FY 2010, \$3.200M of 4667 Global Command and Control System - Air Force effort will be transferred to PE 0604740F, Integrated Command and Control Applications (IC2A), 2524 Reuse and Component Support in accordance with Congressional intent.

A. Mission Description and Budget Item Justification

The Global Command and Control System (GCCS) is the Joint Command and Control (C2) System of Record and the designated C2 migration system for the DOD. It is an integrated Command, Control, Communications, Computer, and Intelligence (C4I) system capable of supporting all echelons of the US military command structure. GCCS solves C4I interoperability problems between Service components by establishing a Common Core Operating Environment supporting net-centric objectives. The GCCS-Air Force program provides C2, intelligence, surveillance, reconnaissance (ISR) and operational information for the Joint Force Air Component Commander (JFACC) and the Air and Space Operations Center-Weapon System (AOC-WS) for planning and execution, air space deconfliction, targeting, weaponeering and many other applications supporting air operational command and control, and fully supports the Aerospace Expeditionary Force (AEF) concept. The Air Force is responsible for integration of Air Force unique applications with the Common Core Operating Environment. Integration efforts are directed towards future aerospace C2 concepts supporting requirements for the AOC, including ISR, and intended to automate operational systems with an objective of providing the right people with the right information at the right time while reducing the overall footprint of the system. As they migrate to the GCCS Joint (GCCS-J) core environment, GCCS-AF will integrate applications into the WINx environment satisfying warfighter requirements for the Common Operational Picture (COP), Joint Warning and Reporting Network (JWARN), Joint Targeting Toolbox (JTT), Logistics Feasibility Analysis Capability (LOGFAC), Deliberate Crisis Action Planning and Execution Segment (DCAPES) capabilities and other information assurance mechanisms. Activities also include studies and analysis to support both current program planning and execution and future program planning.

The GCCS-AF program is actively supporting planning for transition of functionality to DOD's emerging next generation joint C2 enabler. The GCCS-AF funding will be used to implement evolving Joint and Air Force GCCS functional capability as well as facilitate transition, development and delivery of functionality to DOD's next generation joint C2 enabler.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303150F: <i>WWWCCS/GLOBAL COMMAND & CONTROL SYSTEM</i>
--	--

This effort is Budget Activity 7, Operational System Development, because the program develops and implements software upgrades for integrating existing operational systems and computer networks that will eventually evolve to the DOD's next generation joint C2 enabler riding on the Global Information Grid.

Due to an inadvertent error the Air Force requests a technical adjustment transferring \$2.157M in FY2011 from PE 0303158F, R-1 Line No. 179 "Joint Command and Control Program (JC2)" to PE 0303150F, R-1 Line No. 178 "Global Command and Control System (GCCS)."

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	3.124	3.149	0.000	0.000	0.000
Current President's Budget	3.124	6.279	3.055	0.000	3.055
Total Adjustments	0.000	3.130	3.055	0.000	3.055
• Congressional General Reductions		-0.070			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		3.200			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	3.055	0.000	3.055

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 674667: *Global Command and Control System - AF*

Congressional Add: *The FY 2010 \$3.2M Congressional Add for Command and Control Service Level Management (C2SLM). This reprogramming action executes in accordance with Congressional intent.*

Congressional Add Subtotals for Project: 674667

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	0.000	3.130
	0.000	3.130
	0.000	3.130

Change Summary Explanation

The FY 2010 \$3.2M Congressional Add for Command and Control Service Level Management (C2SLM) program will be reprogrammed to the Integrated Command and Control Applications (IC2A) program (PE 0604740F). This reprogramming action executes in accordance with Congressional intent.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303150F: <i>WWWCCS/GLOBAL COMMAND & CONTROL SYSTEM</i>	PROJECT 674667: <i>Global Command and Control System - AF</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674667: <i>Global Command and Control System - AF</i>	3.124	6.279	3.055	0.000	3.055	3.100	3.148	3.195	3.242	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2010, \$3.200M of 4667 Global Command and Control System - Air Force effort will be transferred to PE 0604740F, Integrated Command and Control Applications (IC2A), 2524 Reuse and Component Support in accordance with Congressional intent.

A. Mission Description and Budget Item Justification

The Global Command and Control System (GCCS) is the Joint Command and Control (C2) System of Record and the designated C2 migration system for the DOD. It is an integrated Command, Control, Communications, Computer, and Intelligence (C4I) system capable of supporting all echelons of the US military command structure. GCCS solves C4I interoperability problems between Service components by establishing a Common Core Operating Environment supporting net-centric objectives. The GCCS-Air Force program provides C2, intelligence, surveillance, reconnaissance (ISR) and operational information for the Joint Force Air Component Commander (JFACC) and the Air and Space Operations Center-Weapon System (AOC-WS) for planning and execution, air space deconfliction, targeting, weaponeering and many other applications supporting air operational command and control, and fully supports the Aerospace Expeditionary Force (AEF) concept. The Air Force is responsible for integration of Air Force unique applications with the Common Core Operating Environment. Integration efforts are directed towards future aerospace C2 concepts supporting requirements for the AOC, including ISR, and intended to automate operational systems with an objective of providing the right people with the right information at the right time while reducing the overall footprint of the system. As they migrate to the GCCS Joint (GCCS-J) core environment, GCCS-AF will integrate applications into the WINx environment satisfying warfighter requirements for the Common Operational Picture (COP), Joint Warning and Reporting Network (JWARN), Joint Targeting Toolbox (JTT), Logistics Feasibility Analysis Capability (LOGFAC), Deliberate Crisis Action Planning and Execution Segment (DCAPES) capabilities and other information assurance mechanisms. Activities also include studies and analysis to support both current program planning and execution and future program planning.

The GCCS-AF program is actively supporting planning for transition of functionality to DOD's emerging next generation joint C2 enabler. The GCCS-AF funding will be used to implement evolving Joint and Air Force GCCS functional capability as well as facilitate transition, development and delivery of functionality to DOD's next generation joint C2 enabler.

UNCLASSIFIED

R-1 Line Item #178

Page 3 of 10

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303150F: <i>WWWCCS/GLOBAL COMMAND & CONTROL SYSTEM</i>	PROJECT 674667: <i>Global Command and Control System - AF</i>
--	--	---

This effort is Budget Activity 7, Operational System Development, because the program develops and implements software upgrades for integrating existing operational systems and computer networks that will eventually evolve to the DOD's next generation joint C2 enabler riding on the Global Information Grid.

Due to an inadvertent error the Air Force requests a technical adjustment transferring \$2.157M in FY2011 from PE 0303158F, R-1 Line No. 179 "Joint Command and Control Program (JC2)" to PE 0303150F, R-1 Line No. 178 "Global Command and Control System (GCCS)."

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: Synchronization of current capabilities and planning for infrastructure migration to the next generation joint C2 architecture.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Continued integration of Air Force capabilities into GCCS (COP, DCAPEs, ATO Reader, Joint Defensive Planner (JDP), Joint Targeting Toolbox (JTT)), prototyping software development, and supporting GCCS migration. Developed and fielded incremental software/ infrastructure components necessary to support consolidation to common GCCS-J baseline for installed configurations.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continued integration of Air Force capabilities into GCCS baseline configurations. Conduct C2 interoperability and performance studies in support of further consolidation of GCCS Global Release (GR) and Strategic Server Enclave (SSE) configurations. Assess and mitigate risks associated with transforming enterprise infrastructure components necessary for structured migration of GCCS baseline to the DOD's emerging joint C2 architecture. NOTE: FY10 estimate reflects an additional \$3.13M (rounded to \$3.2M) to be reprogrammed for another program element in accordance with Congressional intent.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Planned continued engineering support to GCCS synchronization and migration objectives. Conduct studies and analysis to develop stronger configuration control and security</p>	3.124	3.149	5.212	0.000	5.212

UNCLASSIFIED

R-1 Line Item #178

Page 4 of 10

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0303150F: <i>WWWCCS/GLOBAL</i> <i>COMMAND & CONTROL SYSTEM</i>		PROJECT 674667: <i>Global Command and Control System</i> - AF				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
protection strategies. Strengthen configuration management, performance engineering and security protection strategies to facilitate migration to the DOD's emerging joint C2 architecture. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A								
In: FY 2010: \$3.2M Congressional Add for Command and Control Service Level Management (C2SLM) program will be reprogrammed (technical adjustment requested) to the Integrated Command and Control Appl... <i>FY 2009 Accomplishments:</i> In FY 2011: N/A <i>FY 2010 Plans:</i> In FY 2011 OCO: N/A <i>FY 2011 Base Plans:</i> In FY 2011: Not Applicable. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.				0.000	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals				3.124	3.149	5.212	0.000	5.212
				FY 2009	FY 2010			
Congressional Add: The FY 2010 \$3.2M Congressional Add for Command and Control Service Level Management (C2SLM). This reprogramming action executes in accordance with Congressional intent.				0.000	3.130			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303150F: <i>WWWCCS/GLOBAL</i> <i>COMMAND & CONTROL SYSTEM</i>	PROJECT 674667: <i>Global Command and Control System</i> - AF
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
<i>FY 2009 Accomplishments:</i> In FY 2009: N/A		
<i>FY 2010 Plans:</i> In FY 2011 OCO: Not Applicable.		
Congressional Adds Subtotals	0.000	3.130

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0303150F: <i>Air Force Global Command and Control System, (OPAF)</i>	8.661	9.881	9.210	0.000	9.210	17.583	13.583	13.780	14.004	0.000	0.000
• PE 0303150F (1): <i>Air Force Global Command and Control System, (O&M)</i>	38.170	40.183	40.832	0.000	40.832	44.472	44.717	45.578	46.771	0.000	0.000

D. Acquisition Strategy

GCCS-AF is developed and fielded using a spiral acquisition approach, synchronized with Common Operating Environment (COE) and compliant with the GCCS-Joint (GCCS-J) baseline. All deployment of GCCS-AF capabilities are synchronized with the GCCS-J program fielding schedule, which is led by DISA. The GCCS-AF program is actively supporting DOD planning for transition of functionality to DOD's emerging next generation joint C2 enabler.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303150F: <i>WWWCCS/GLOBAL</i> <i>COMMAND & CONTROL SYSTEM</i>	PROJECT 674667: <i>Global Command and Control System</i> - AF
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
WINxB	SS/FFP	Northrop Gruman ITS Herndon, VA	1.750	2.000	Nov 2009	3.480	Nov 2010	0.000		3.480	Continuing	Continuing	0.000
Subtotal			1.750	2.000		3.480		0.000		3.480			0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering Support	FFRDC	Mitre / ESC Hanscom AFB, MA	0.865	0.600	Oct 2009	1.200	Nov 2010	0.000		1.200	Continuing	Continuing	0.000
Miscellaneous	Various	Various Various	0.195	0.249	Oct 2009	0.200		0.000		0.200	Continuing	Continuing	0.000
Subtotal			1.060	0.849		1.400		0.000		1.400			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303150F: <i>WWWCCS/GLOBAL COMMAND & CONTROL SYSTEM</i>	PROJECT 674667: <i>Global Command and Control System - AF</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Accreditation	MIPR	Various Various	0.314	3.430	Oct 2009	0.332	Nov 2010	0.000		0.332	Continuing	Continuing	0.000
Subtotal			0.314	3.430		0.332		0.000		0.332			0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.124	6.279		5.212		0.000		5.212			0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

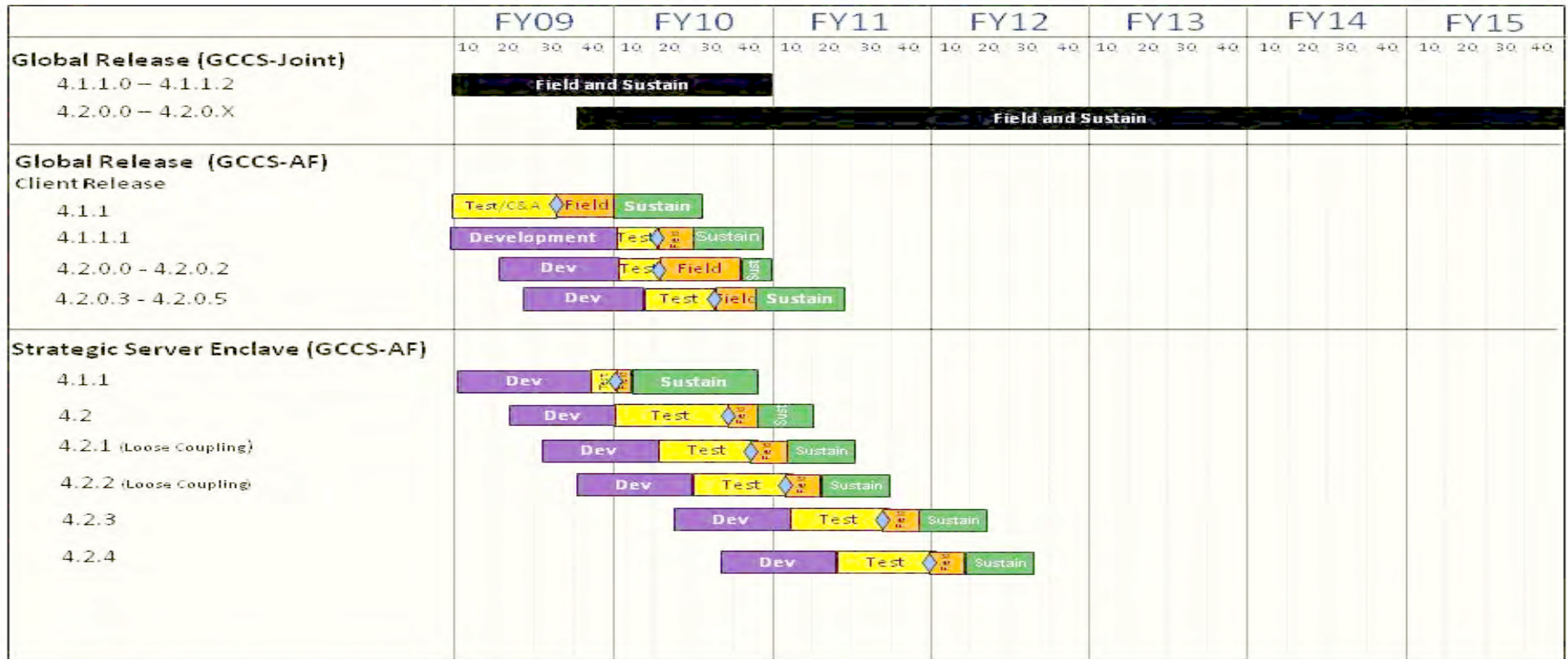
R-1 ITEM NOMENCLATURE

PE 0303150F: WWMCCS/GLOBAL
COMMAND & CONTROL SYSTEM

PROJECT

674667: Global Command and Control System
- AF

GCCS-AF (I) Integrated Program Schedule



Design / development
 Integration / test
 Capability Development / Enhancement Releases
 Production / fielding
 Sustainment
 Development Efforts
 Key events

Rev. 12/18/2009

UNCLASSIFIED

R-1 Line Item #178

Page 9 of 10

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303150F: <i>WWWCCS/GLOBAL</i> <i>COMMAND & CONTROL SYSTEM</i>	PROJECT 674667: <i>Global Command and Control System</i> - <i>AF</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
GCCS-AF v4.1.1: Global Release Joint (GR-J) - Fielding	1	2009	4	2010
GCCS-AF v4.2: GR-J - Fielding	4	2009	4	2011
GCCS-AF 4.1.1: GR-C - Testing/Fielding	1	2009	3	2010
GCCS-AF 4.1.1.1: GR-C - Development/Testing/Fielding	1	2009	4	2010
GCCS-AF 4.2.0.0: GC-C - Development/Testing/Fielding	2	2009	4	2010
GCCS-AF 4.2.0.3: GR-C - Development/Testing/Fielding	3	2009	2	2011
GCCS-AF 4.1.1 SSE - Development/Testing/Fielding	1	2009	4	2010
GCCS-AF 4.2 SSE - Development/Integration/Testing/Fielding	2	2009	1	2011
GCCS-AF 4.2.1 SSE - Loose Coupling: Dev/Test/Fielding	3	2009	2	2011
GCCS-AF 4.2.2 SSE - Loose Coupling: Dev/Test/Fielding	4	2009	3	2011
GCCS-AF 4.2.3 SSE - Development/Integration/Testing/Fielding	3	2010	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303158F: <i>Joint Command and Control</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	3.140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
675216: <i>JC2 Technology and System Development</i>	3.140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Note

In FY 2010, 5216 JC2 Technology and System Development, Net-Enabled Command Capability (NECC), was terminated. This exhibit reflects an Air Force request for a technical adjustment transferring \$2.157M in FY 2011 from PE 0303158F, R-1 Line No. 179 "Joint Command and Control Program (JC2)" to PE 0303150F, R-1 Line No. 178 "Global Command & Control System."

A. Mission Description and Budget Item Justification

This effort contributes to the next generation of joint command and control (C2) capabilities for the Department of Defense (DOD). The GCCS program includes each of the Component GCCS programs (i.e., GCCS-AF FoS, GCCS-M, GCCS-J and GCCS-A), which are the current programs of record within each component. These GCCS programs will transition in response to a critical need for coordinated and integrated enhancements to joint C2 capabilities.

The Air Force's contribution to joint C2 will be evolved from elements of the GCCS-Air Force Family of Systems (GCCS-AF FoS). GCCS-AF FoS consists of the following programs (each with their own program elements): TBMCS Force Level (TBMCS-FL), Joint Defensive Planner (JDP) - part of TBMCS-FL baseline program element, Joint Targeting Toolkit (JTT), GCCS-AF Infrastructure (GCCS-AF I), Deliberate Crisis Action Planning and Execution Segment (DCAPES) and the Joint Environmental Toolkit (JET). Leveraging the capabilities provided by the Net-Centric Enterprise Services (NCES) program, joint C2 will accelerate the evolution towards a net-centric, web-based, open-system standards approach to providing C2 capabilities and services as the core of the DOD C2 enterprise architecture.

The DOD's joint C2 architecture will deliver capabilities as stated in related Joint Requirements Oversight Council (JROC) validated Capability Development Documents (CDD). This effort enhances the capabilities of the GCCS FoS and includes the migration of capabilities to a more modern, interoperable architecture. The technology development phase encompasses risk reduction activities and engineering analyses with system and architectural analyses. Activities also include studies and analysis to support both current program planning and execution and future program planning. The requested RDT&E funding is critical to support Air Force net-centric transformation efforts in the areas of strategic and operational command and control.

Funding supports acquisition activities related to joint C2 evolution. These activities include development, testing, integration, architecture and systems engineering, and transition planning in coordination and synchronization with DISA and the other Services.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303158F: <i>Joint Command and Control</i>
--	---

This effort is Budget Activity 7 and will perform efforts necessary to evaluate integrated technologies, representative modes or prototype joint C2 capabilities that are effective in a common C2 architecture and consistent with established technical standards.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	3.140	3.087	0.000	0.000	0.000
Current President's Budget	3.140	0.000	0.000	0.000	0.000
Total Adjustments	0.000	-3.087	0.000	0.000	0.000
• Congressional General Reductions		-3.087			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

Change Summary Explanation

Project Termination: NECC project within PE 0303158F terminated - OUSD(AT&L) ADM - 2 Nov 2009.
FY 2010 Congressional reduction of \$3.087M due to NECC termination.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0303158F: <i>Joint Command and Control</i>				PROJECT 675216: <i>JC2 Technology and System Development</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675216: <i>JC2 Technology and System Development</i>	3.140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2010, 5216 JC2 Technology and System Development, Net-Enabled Command Capability (NECC), was terminated.

A. Mission Description and Budget Item Justification

Joint Command and Control (JC2) is the next generation of command and control capabilities for the Department of Defense. JC2 will eventually replace the Global Command and Control System (GCCS) Family of Systems (FoS) Program. The GCCS program includes each of the component GCCS programs (i.e., GCCS-AF FoS, GCCS-M, GCCS-J, and GCCS-A), which are the current systems of record within each component. These GCCS programs will eventually transition into a single Joint Command and Control (JC2) Capability effort. JC2 will consist of eight Mission Capability Packages: Situational Awareness, Force Readiness, Force Projection, Intelligence, Force Protection, Force Employment (Air/Space), Force Employment (Land Operations), and Force Employment (Maritime/Littoral Operations).

The Air Force's initial contribution to JC2 will be drawn from the GCCS-Air Force Family of Systems (GCCS-AF FoS). GCCS-AF FoS consists of the following programs (each with their own program elements): TBMCS Force Level (TBMCS-FL), Joint Defensive Planner (JDP), Time Critical Targeting Functionality (TCT-F), Joint Targeting Toolkit (JTT), GCCS-AF Infrastructure (GCCS-AF I), Deliberate Crisis Action Planning and Execution Segment (DCAPES) and the C2 portion of the Joint Environmental Toolkit (JET). Using the concepts and capabilities of Net-Centric Enterprise Services, JC2 will provide a vast range of command and control capabilities to the warfighter. JC2 will begin an accelerated evolution toward a more net-centric, web-based, open system standards approach to providing C2 capabilities and services that will establish JC2 as the core of the DoD Command and Control architecture.

The current GCCS-AF FoS will transition to JC2 in the future. JC2 will deliver the capabilities as stated in the updated Operational Requirements Document (ORD) and complementing Capabilities Development Document (CDD). JC2 expands the capabilities developed and integrated into the GCCS FoS including the migration of capabilities to a more modern architecture. Risk reduction activities and engineering analysis with selected system and architectural analysis will provide the initial steps of the technical development. The requested RDT&E funding is critical to support Air Force Transformation efforts in the area of strategic and operational command and control.

UNCLASSIFIED

R-1 Line Item #179

Page 3 of 9

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303158F: <i>Joint Command and Control</i>	PROJECT 675216: <i>JC2 Technology and System Development</i>
--	---	--

Funding for FY06 and beyond will support the Air Force contribution to JC2 by establishing the Air Force Program Management Office (PMO) responsible for all AF acquisition activities related to JC2. The AF PMO will be responsible for development, integration, architecture, system engineering, testing and transition planning, as directed by the JC2 Joint Program Office (JPO).

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Provide joint C2 technical engineering and systems development <i>FY 2009 Accomplishments:</i> In FY 2009: Perform systems analysis and architecture concept design for Air Force contribution to the Net-Enabled Command Capability (NECC) program. Provide support services for Air Force component program management office. <i>FY 2010 Plans:</i> In FY 2010: N/A <i>FY 2011 Base Plans:</i> In FY 2011: N/A <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A	3.140	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	3.140	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303158F: <i>Joint Command and Control</i>	PROJECT 675216: <i>JC2 Technology and System Development</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0303158F: <i>Air Force Global Command & Control Sytem, (OPAF)</i>	2.120	5.571	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The joint C2 acquisition strategy is developed jointly by the Defense Information Systems Agency (DISA), the Services, the Assistant Secretary of Defense for Networks and Information Integration (ASD (NII)), Office of the Under Secretary of Defense for Acquisition, Technology and Logistics (OUSD(AT&L)), and US Joint Forces Command (USJFCOM).

Each service/component is responsible for awarding new or utilizing existing contracts to develop joint C2 capabilities. All related activities are fully coordinated and integrated among DISA and Service offices.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303158F: <i>Joint Command and Control</i>	PROJECT 675216: <i>JC2 Technology and System Development</i>
--	---	--

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Technical Engineering Services	FFRDC	MITRE Bedford, MA	1.760	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			1.760	0.000		0.000		0.000		0.000			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Support	C/CPFF	350 ELSG Hanscom AFB, MA	1.380	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			1.380	0.000		0.000		0.000		0.000			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Cost Totals	3.140	0.000		0.000		0.000		0.000			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303158F: <i>Joint Command and Control</i>	PROJECT 675216: <i>JC2 Technology and System Development</i>
--	---	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0303158F: *Joint Command and Control*

PROJECT

675216: *JC2 Technology and System Development*



Joint Command & Control - Schedule

	FY09	FY10	FY11	FY12	FY13	FY14	FY15
NECC							
AF PMO Support							
Joint C2							
		Transition					

Integrity - Service - Excellence

FY11PB-Revsn_v1.2_1/10

UNCLASSIFIED

R-1 Line Item #179

Page 8 of 9

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303158F: <i>Joint Command and Control</i>	PROJECT 675216: <i>JC2 Technology and System Development</i>
--	---	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Air Force Program Management Office (PMO) support to NECC	1	2009	4	2009
Transition and support to evolving joint C2 architecture, engineering and acquisition strategy	1	2010	4	2010

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303601F: <i>MILSATCOM Terminals</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	277.501	253.818	186.582	0.000	186.582	105.274	79.768	15.301	13.723	Continuing	Continuing
672487: <i>MILSATCOM Terminals</i>	277.501	253.818	186.582	0.000	186.582	105.274	79.768	15.301	13.723	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Military Satellite Communications (MILSATCOM) Terminals program develops and fields equipment enabling users to communicate via legacy and future systems to include Milstar, Advanced Extremely High Frequency (AEHF), Ultra High Frequency (UHF) Follow-On (UFO), Wideband Global SATCOM (WGS), Defense Satellite Communication System (DSCS), Enhanced Polar Systems (EPS), and other military and commercial satellites, to support tactical Air and Space Expeditionary Force requirements and maintain essential connectivity for strategic forces. Program RDT&E currently includes the following program efforts:

- 1) Concept development work to identify commercial/military technology solutions to improve MILSATCOM terminal capabilities for the warfighters. Focus includes, but is not limited to, increasing throughput, facilitating sustainability, reducing footprint on user platform and supporting the Global Information Grid (GIG).

- 2) The Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) Increment 1 program will provide Extremely High Frequency (EHF) voice and data MILSATCOM for nuclear and conventional forces as well as airborne and ground command posts with connectivity to Milstar, AEHF, and Enhanced Polar System (EPS) satellites. FAB-T Increment 1 terminals will also support the command and control (C2) of Milstar, AEHF, and EPS satellites.

- 3) The High Data Rate - Radio Frequency (HDR-RF) Ground Terminal program will provide the high data rate SATCOM connectivity needed to support the Intelligence, Surveillance and Reconnaissance (ISR) community with High Bandwidth High Throughput (HBHT) capability. HDR-RF Ground Terminals will be used for Command & Control, Intelligence, Surveillance and Reconnaissance (C2ISR), and will support the full spectrum of operations from humanitarian support/disaster relief to a major theater war. HDR-RF Ground Terminals will be interoperable with WGS satellites and the High Data Rate Airborne Terminal (HDRAT) (formerly FAB-T Increment 2), to support Air Intelligence Surveillance Reconnaissance (AISR) data rates from 138Mbps to 274Mbps. HDR-RF Ground Terminals will include an HBHT Software Communications Architecture (SCA) compliant modem and will provide quad band (C-, X-, Ku- and Ka-band) SATCOM. HDR-RF Ground Terminals will be interoperable with legacy tactical terminals and operate worldwide with existing military and commercial spacecraft. The user of HDR-RF Ground Terminals is the Global Hawk Ground Mission Control Element (MCE). FY11 HDR-RF funds support Phase II risk reduction efforts supporting modem qualification with an operational waveform, test and evaluation, program office support, system engineering and other related activities.

- 4) The Joint Terminal Engineering Office (JTEO) provides tri-service coordination of terminal development, acquisition and fielding activities.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303601F: <i>MILSATCOM Terminals</i>
--	---

5) The Global Broadcast Service (GBS) provides for development, systems engineering and integration, test, Transmission Security (TRANSEC) compliance development, program office support of Receive Suites and continued analysis of ORD III requirements.

While the GBS program is in the Operations and Sustainment phase of its lifecycle, the Receive Suite efforts are still conducting development and are captured in this Budget Activity

6) The HDRAT will develop a high data rate SATCOM terminal solution in support of AISR platforms and other supporting activities. HDRAT will provide for secure Ka/Ku high data rate satellite links (over commercial and government owned assets) and line-of-sight communications supporting airborne intelligence, surveillance, and reconnaissance (AISR) platforms. This program will provide AISR platforms with antenna solutions, modem assemblies, and the appropriate waveforms capable of supporting high resolution sensor data and C2 links at speed up to 274 Mbps (platform and mission dependent).

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	334.182	257.693	0.000	0.000	0.000
Current President's Budget	277.501	253.818	186.582	0.000	186.582
Total Adjustments	-56.681	-3.875	186.582	0.000	186.582
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-56.681	-3.875	186.582	0.000	186.582

Change Summary Explanation

\$10.0M was rescinded in the FY09 supplemental bill.

UNCLASSIFIED

R-1 Line Item #180

Page 2 of 11

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303601F: <i>MILSATCOM Terminals</i>	PROJECT 672487: <i>MILSATCOM Terminals</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
672487: <i>MILSATCOM Terminals</i>	277.501	253.818	186.582	0.000	186.582	105.274	79.768	15.301	13.723	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Military Satellite Communications (MILSATCOM) Terminals program develops and fields equipment enabling users to communicate via legacy and future systems to include Milstar, Advanced Extremely High Frequency (AEHF), Ultra High Frequency (UHF) Follow-On (UFO), Wideband Global SATCOM (WGS), Defense Satellite Communication System (DSCS), Enhanced Polar Systems (EPS), and other military and commercial satellites, to support tactical Air and Space Expeditionary Force requirements and maintain essential connectivity for strategic forces. Program RDT&E currently includes the following program efforts:

- 1) Concept development work to identify commercial/military technology solutions to improve MILSATCOM terminal capabilities for the warfighters. Focus includes, but is not limited to, increasing throughput, facilitating sustainability, reducing footprint on user platform and supporting the Global Information Grid (GIG).
- 2) The Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) Increment 1 program will provide Extremely High Frequency (EHF) voice and data MILSATCOM for nuclear and conventional forces as well as airborne and ground command posts with connectivity to Milstar, AEHF, and Enhanced Polar System (EPS) satellites. FAB-T Increment 1 terminals will also support the command and control (C2) of Milstar, AEHF, and EPS satellites.
- 3) The High Data Rate - Radio Frequency (HDR-RF) Ground Terminal program will provide the high data rate SATCOM connectivity needed to support the Intelligence, Surveillance and Reconnaissance (ISR) community with High Bandwidth High Throughput (HBHT) capability. HDR-RF Ground Terminals will be used for Command & Control, Intelligence, Surveillance and Reconnaissance (C2ISR), and will support the full spectrum of operations from humanitarian support/disaster relief to a major theater war. HDR-RF Ground Terminals will be interoperable with WGS satellites and the High Data Rate Airborne Terminal (HDRAT) (formerly FAB-T Increment 2), to support Air Intelligence Surveillance Reconnaissance (AISR) data rates from 138Mbps to 274Mbps. HDR-RF Ground Terminals will include an HBHT Software Communications Architecture (SCA) compliant modem and will provide quad band (C-, X-, Ku- and Ka-band) SATCOM. HDR-RF Ground Terminals will be interoperable with legacy tactical terminals and operate worldwide with existing military and commercial spacecraft. The user of HDR-RF Ground Terminals is the Global Hawk Ground Mission Control Element (MCE). FY11 HDR-RF funds support Phase II risk reduction efforts supporting modem qualification with an operational waveform, test and evaluation, program office support, system engineering and other related activities.
- 4) The Joint Terminal Engineering Office (JTEO) provides tri-service coordination of terminal development, acquisition and fielding activities.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303601F: <i>MILSATCOM Terminals</i>	PROJECT 672487: <i>MILSATCOM Terminals</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Continue concept development/prototype demonstrations/MILSATCOM Terminal roadmap. Continue development of FAB-T Increment 1 Terminal. Continue development of the HDR-RF Ground Terminal. Continue support for the JTEO. Continue program support and other related activities.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	277.501	253.818	186.582	0.000	186.582

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0303601F: <i>MILSATCOM Terminals, OPAF</i>	0.000	72.598	140.488	0.000	140.488	266.932	226.321	105.790	58.264	0.000	0.000
• PE 0303601F (1): <i>MILSATCOM Terminals, OPAF</i>	105.919	106.536	219.634	0.000	219.634	368.487	340.066	250.769	100.679	0.000	0.000

D. Acquisition Strategy
FAB-T provides a Family of Beyond Line-of-Sight (BLOS) satellite communications (SATCOM) and Line-of-Sight (LOS) terminals with an open architecture to satisfy the requirements identified in the Advanced Wideband Terminal (AWT) and Command Post Terminal (CPT) Operational Requirements Documents (ORDs) and FAB-T Inc 1 Capability Development Document (CDD).

Increment 1 provides the layered architecture which enables support for evolving and new communication capabilities and technologies. Capabilities include transmission and reception of voice, data, imagery, and video as well as broadcast reception over protected and LOS systems. Increment 1 also provides the capability for air and ground communications using the Milstar Extremely High Frequency (EHF) and Advanced Extremely High Frequency (AEHF) waveforms. Increment

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303601F: <i>MILSATCOM Terminals</i>	PROJECT 672487: <i>MILSATCOM Terminals</i>
<p>1 terminals are planned for the B-2, B-52, and RC-135 aircraft and to upgrade the existing Command Post Terminals (CPTs) located on the ground (fixed and transportable) and airborne on the E-4 and E-6 aircraft.</p> <p>The HDR-RF Ground Terminal Program consists of three Phases. Phase 1, the Ground Modem Application Demonstration phase, consists of multiple contractors developing an SCA version 2.2.1 compliant, HDR-RF Ground HBHT modem, which will port/run a Government provided test waveform. This phase culminates in a demonstration/test of the vendor's modem hardware and facilitates HBHT SCA modem availability when the HDRAT developed operational waveform is complete. Phase 2 consists of porting and demonstrating of the HDRAT developed operational waveform, and qualifying the modem. Phase 3 consists of integrating/qualifying the HDR-RF ground modem into an existing Ground Multi-band Terminals, obtaining appropriate certifications, producing, and fielding the system to communicate over WGS using transponded Ka-band satellite communications.</p> <p>GBS provides warfighters with a worldwide, seamless, high throughput broadcast information service to support today's and tomorrow's mission. The Receive Suite (RS) development will satisfy the portable receive suite requirements identified in the GBS Operational Requirements Document. (ORD) III Block-3. RS provides Special Operations use of GBS in operational areas; capabilities include reception of voice, data, imagery and video. The RS shall be manpackable and fit into a single rucksack with a weight limit of 20 pounds. The program strategy is to design, develop, and test a RS for special operation use and testing and integration to fulfill the GBS TRANSEC requirement.</p> <p>The development of High Data Rate SATCOM Solutions will support the Analysis of Alternatives (AoA) charged with providing high data rate satellite and line-of-sight communications for the Global Hawk unmanned aerial vehicle, and other platform. The resulting solution will provide for new antenna equipment; modem assemblies; updated high data rate waveforms; and program office support. Our acquisition strategy will be shaped by the AoA output and will be IAW statutory requirements.</p> <p>E. Performance Metrics</p> <p>Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.</p>		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0303601F: <i>MILSATCOM Terminals</i>				PROJECT 672487: <i>MILSATCOM Terminals</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
FAB-T Development	C/CPAF	Boeing Corp Huntington Beach, CA	1,206.251	210.369	Jan 2010	120.901	Jan 2011	0.000		120.901	Continuing	Continuing	0.000
FAB-T	Various/ Various	Various Various	54.125	0.081	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	0.000
High Data Rate (HDR) RF Ground Terminal Development	C/FFP	Comtech Tempe, AZ	5.993	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
High Data Rate (HDR) RF Ground Terminal Development (1)	C/FFP	Raytheon Marborough, MA	6.365	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
High Data Rate (HDR) RF Ground Terminal Development (2)	C/FFP	L3 Comm Hauppauge, NY	1.767	0.000		0.000		0.000		0.000	0.000	1.767	0.000
High Data Rate (HDR) RF Ground Terminal Development (3)	TBD/TBD	TBD TBD	0.000	0.000		1.306	Jan 2011	0.000		1.306	0.000	1.306	0.000
High Data Rate (HDR) RF Air Terminal Development (merged with FAB-T beginning in FY06)	C/CPAF	Boeing Corp Huntington Beach, CA	13.787	0.000		0.000		0.000		0.000	0.000	13.787	0.000
Lasercom Terminal Development Studies	C/FFP	Various Various	30.395	0.000		0.000		0.000		0.000	0.000	30.395	0.000
Global Broadcast Service (GBS)	Various/ Various	Various Various	0.000	3.536	Mar 2010	0.000		0.000		0.000	0.000	3.536	0.000

UNCLASSIFIED

R-1 Line Item #180

Page 7 of 11

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303601F: <i>MILSATCOM Terminals</i>	PROJECT 672487: <i>MILSATCOM Terminals</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
High Data Rate Airborne Terminal (HDRAT)	TBD/TBD	TBD TBD	0.000	0.000		18.879	Apr 2011	0.000		18.879	0.000	18.879	0.000
Subtotal			1,318.683	213.986		141.086		0.000		141.086			0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering Support	C/CPAF	MITRE Bedford MA	261.944	14.563	Jan 2010	17.479	Jan 2011	0.000		17.479	Continuing	Continuing	0.000
Systems Engineering/ Functional/Financial Support	Various/ Various	Various Various	257.995	14.481	Jan 2010	13.482	Jan 2011	0.000		13.482	Continuing	Continuing	0.000
Miscellaneous	Various/ Various	Various Various	39.623	5.218	Jan 2010	6.881	Jan 2011	0.000		6.881	Continuing	Continuing	0.000
Subtotal			559.562	34.262		37.842		0.000		37.842			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0303601F: <i>MILSATCOM Terminals</i>				PROJECT 672487: <i>MILSATCOM Terminals</i>					

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Various Programs	Various/ Various	AF Research Lab No text provided	32.961	5.570	Jan 2010	7.654	Jan 2011	0.000		7.654	Continuing	Continuing	0.000
Miscellaneous T&E	Various/ Various	Various Various	26.187	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
Subtotal			59.148	5.570		7.654		0.000		7.654			0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,937.393	253.818		186.582		0.000		186.582			0.000

Remarks

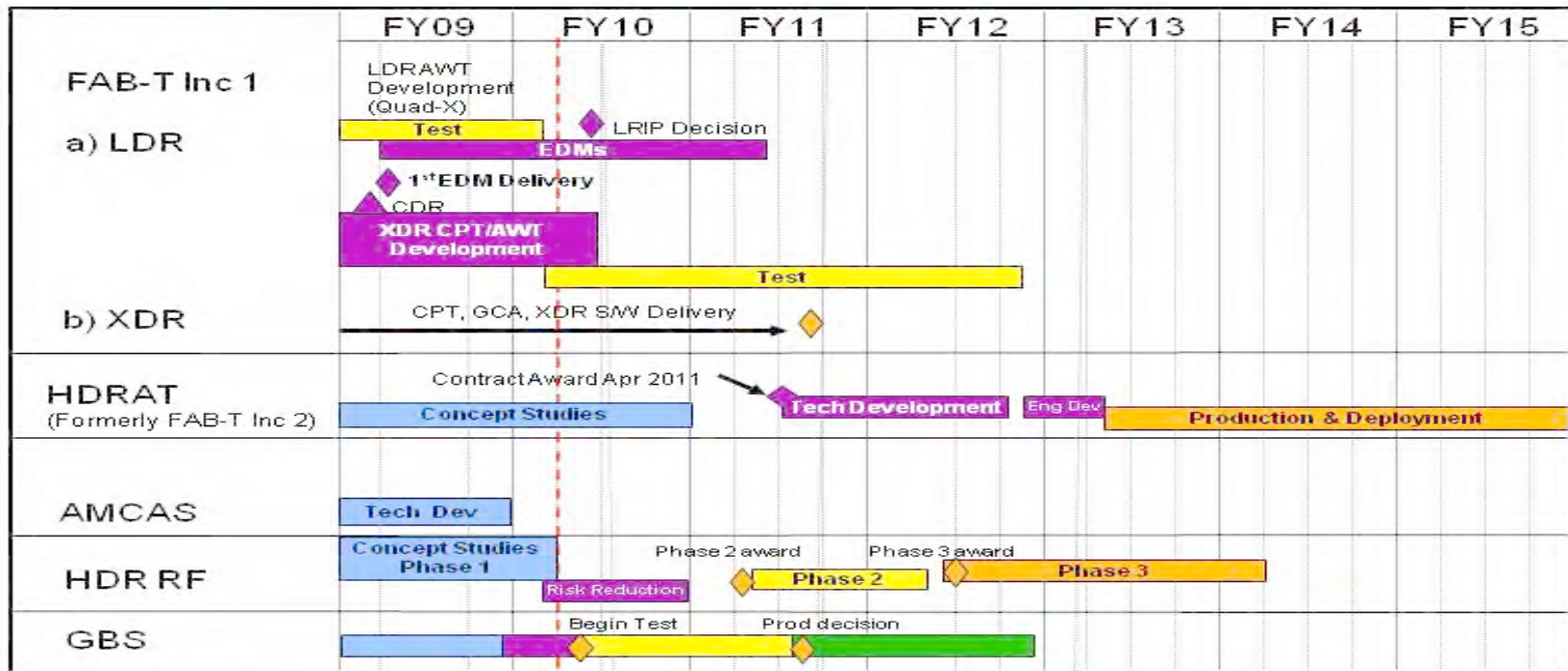
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303601F: <i>MILSATCOM Terminals</i>	PROJECT 672487: <i>MILSATCOM Terminals</i>

MILSATCOM Terminals Schedule RDoc



CDR: Critical Design Review EDM: Engineering Design Model PDR: Preliminary Design Review LRIP: Low Rate Initial Production
 RS: Receive Suites LDR: Low Data Rate XDR: Extended Data Rate LAA: Large Aircraft Antenna

Concept activities
 Design / Development
 Integration / Test
 Production / Fielding
 Operations / Sustainment
 △◇ Key events

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303601F: <i>MILSATCOM Terminals</i>	PROJECT 672487: <i>MILSATCOM Terminals</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
FAB-T (Inc 1) System CDR	1	2009	1	2009
FAB-T 1st Engineering Development Model (EDM) Delivery of LDR terminal	2	2009	2	2009
FAB-T Inc 2 Concept Studies	1	2009	4	2010
GBS Receive Suite Award	2	2010	2	2010
HDRAT Contract Award	3	2011	3	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	170.714	166.989	149.268	0.000	149.268	129.610	145.280	145.995	148.168	Continuing	Continuing
675180: <i>RC-135 (Airborne SIGINT Development - RC-135)</i>	45.995	42.619	27.328	0.000	27.328	33.784	43.085	30.486	30.922	Continuing	Continuing
675182: <i>MQ-1/MQ-9 (Airborne SIGINT Development - Predator)</i>	22.728	58.033	29.751	0.000	29.751	11.182	11.646	3.081	3.133	Continuing	Continuing
675183: <i>Common Development (Airborne SIGINT Development - Common Development)</i>	57.951	32.837	59.048	0.000	59.048	60.227	68.736	86.762	88.032	Continuing	Continuing
675184: <i>RQ-4 (Airborne SIGINT Development - Global Hawk)</i>	17.811	20.952	15.083	0.000	15.083	6.494	6.697	11.694	11.905	Continuing	Continuing
675185: <i>Compass Bright (Airborne SIGINT Development - Compass Bright)</i>	10.085	5.913	6.022	0.000	6.022	6.029	6.056	9.081	9.211	Continuing	Continuing
675186: <i>Special Programs (Airborne SIGINT Development - Special Platforms)</i>	16.144	6.635	12.036	0.000	12.036	11.894	9.060	4.891	4.965	Continuing	Continuing

A. Mission Description and Budget Item Justification

(U) This PE provides signals intelligence (SIGINT) development efforts for all USAF airborne platforms. The funds in this PE are distributed among all Airborne SIGINT Enterprise (ASE) projects based on the development priorities established by the USAF SIGINT Capabilities Working Group (SCWG) in order to build a total SIGINT capability. As a result, the USAF will move funds between projects periodically to develop the highest priority projects in response to urgent warfighter needs. This PE will participate in the development, integration, testing, and implementation of international standards (to include NATO standardization agreements) to ensure joint, allied, and coalition interoperability. Modernization efforts include sensors for the platforms and their appropriate interfaces with the Air Force Distributed Common Ground System (AF DCGS). This approach will allow a synergistic development effort to be accomplished while developing a true Air Force-wide capability. This enterprise will use the Air Force Cryptologic Architecture (AFCA) for planning and decision-making and, in turn, employ the Joint Airborne SIGINT Architecture (JASA)

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>
--	---

open architecture standards to allow maximum ease of future upgrades and system interoperability. The primary goal of the ASE is to produce an architecture-based, capability-focused SIGINT investment strategy for the USAF.

(U) Funds in any project may be used to fund initiatives in other projects within this PE at the discretion of the SCWG.

(U) Funds in any project can also cover activities to include studies and analysis to support both current program planning and execution and future program planning.

(U) This program is Budget Activity 7, Operational Systems Development, because it involves the development of SIGINT capabilities and integration with operational systems such as the RC-135, U-2, MQ-1/MQ-9, RQ-4, Special Programs (Senior Scout, Liberty Project Aircraft, NCCT SIGINT activities, Small UAS, and others as required), their associated ground stations and data links, and Compass Bright programs.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	173.160	176.989	0.000	0.000	0.000
Current President's Budget	170.714	166.989	149.268	0.000	149.268
Total Adjustments	-2.446	-10.000	149.268	0.000	149.268
• Congressional General Reductions		-10.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-2.446	0.000	149.268	0.000	149.268

Change Summary Explanation

FY09 reduction for other AF priorities. FY 10 is Congression Reduction due to Global Hawk IOT&E slip. FY 11 reduction is for higher AF priorities.

UNCLASSIFIED

R-1 Line Item #182

Page 2 of 43

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675180: <i>RC-135 (Airborne SIGINT Development - RC-135)</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675180: <i>RC-135 (Airborne SIGINT Development - RC-135)</i>	45.995	42.619	27.328	0.000	27.328	33.784	43.085	30.486	30.922	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) This project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with the integration and modification of the RC-135 SIGINT sensors and their associated air and ground components. Through extensive utilization of commercial-off-the-shelf (COTS)-based solutions to fielding of needed capabilities, it also incurs the need for continuous diminishing manufacturing sources integration efforts consistent with the COTS technology cycle.

(U) These efforts provide the requisite engineering for preliminary assessments of technical feasibility, operability, or military utility as well as specific engineering implementations integrated into the various baseline modifications.

(U) These funds will be split between the RIVET JOINT, COMBAT SENT, and COBRA BALL programs. Funding reflects the SIGINT Capabilities Working Group (SCWG) priorities and the accomplishment of other ASE initiatives.

(U) This program effort is Budget Activity 7, Operational Systems Development, because it involves Air Force RDT&E necessary to field essential operational capabilities.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Initiates and continues Non-Recurring Engineering (NRE) for the RC-135 SIGINT Systems. See Classified Budget Exhibits (PE 0305207F) <i>FY 2009 Accomplishments:</i> In FY 2009: Efforts included RIVET JOINT antenna development and tuner improvements. Work also included COBRA BALL and COMBAT SENT low band improvements	45.995	42.619	27.328	0.000	27.328

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force						DATE: February 2010					
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>			PROJECT 675180: <i>RC-135 (Airborne SIGINT Development - RC-135)</i>					
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
<p><i>FY 2010 Plans:</i> In FY 2010: Efforts will include geolocation improvements for COBRA BALL and COMBAT SENT, air surveillance capabilities and antenna improvements on teh RIVET JOINT</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Improvements in ELINT capabilities, EAN 105 antenna integration efforts and software improvements</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>											
Accomplishments/Planned Programs Subtotals						45.995	42.619	27.328	0.000	27.328	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0305207F: <i>Manned Reconnaissance Systems, (APAF)</i>	149.042	161.982	149.582	0.000	149.582	209.910	214.139	221.674	225.877	0.000	0.000
D. Acquisition Strategy											
(U) Aircraft, aircraft sensor systems, and associated ground support system modifications planned include the procurement, fielding and logistical support for future RIVET JOINT, COMBAT SENT and COBRA BALL baseline configurations. Development and integration managed by the Big Safari Systems Group; they employ evolutionary acquisition approaches to field incremental capability improvements.											
E. Performance Metrics											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675180: <i>RC-135 (Airborne SIGINT Development - RC-135)</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SIGINT Sensor Development and Integration	SS/CPFF	Sensor development and integration L-3 COM: Greenville, TX	45.995	42.619	Jan 2010	27.328	Jan 2011	0.000		27.328	Continuing	Continuing	Continuing
Subtotal			45.995	42.619		27.328		0.000		27.328			

Remarks

Above contract method/type will be CPFF and FFP

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	45.995	42.619		27.328		0.000		27.328			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*

PROJECT

675180: *RC-135 (Airborne SIGINT Development - RC-135)*



RC-135 Development Efforts ASE PE

	FY09	FY10	FY11	FY12	FY13	FY14	FY15
RIVET JOINT							
COMBAT SENT							
COBRA BALL							

- | | | |
|-----------------------|----------------------|--------------------|
| Concept activities | Design / development | Integration / test |
| Production / fielding | Pre-Production | Key events |

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*

PROJECT

675180: *RC-135 (Airborne SIGINT Development - RC-135)*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Development of RIVET JOINT mission sensors	1	2009	4	2011
Development of COMBAT SENT mission sensors	1	2009	4	2011
Development of COBRA BALL mission sensors	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675182: <i>MQ-1/MQ-9 (Airborne SIGINT Development - Predator)</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675182: <i>MQ-1/MQ-9 (Airborne SIGINT Development - Predator)</i>	22.728	58.033	29.751	0.000	29.751	11.182	11.646	3.081	3.133	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) This project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with the integration and modification of the MQ-1/MQ-9 SIGINT sensors and their associated air and ground components. This is an RTD&E effort to integrate SIGINT capability on to the MQ-1/MQ-9 platforms. The sensors shall be capable of collecting technical data and geolocating signals of interest and providing sensor data to a workstation. The integration effort shall include the use of existing sensor suites to the maximum extent possible to minimize design costs and reduce development time lines. Design efforts specific to the Predator or Reaper systems may include, but not be limited to, antennas, EMI reduction, encryption techniques, and changes to the aircraft, ground station, data link, and simulator necessary to accommodate a SIGINT payload and its data throughput.

(U) Funding will begin efforts on antennas, receivers, processors, software development, aircraft integration and ground station upgrades to allow a persistent reconnaissance, surveillance, targeting, and acquisition capability against mission specific threats. Development of a networked capability to other SIGINT platforms will also be initiated.

(U) In accordance with an evolutionary acquisition strategy, a series of ASIP capability improvements will begin preliminary design activities to support software and hardware upgrades in FY10. These upgrades are designed to exploit signals of interest identified as service priorities by the Air Force SIGINT Capabilities Working Group (SCWG).

(U) This project provides the warfighter with increased combat capability as soon as technology and risk achieve satisfactory levels.

(U) This program effort is Budget Activity 7, Operational Systems Development, because it involves Air Force RDT&E necessary to field essential operational capabilities.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force							DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>			PROJECT 675182: <i>MQ-1/MQ-9 (Airborne SIGINT Development - Predator)</i>					
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
MAJOR THRUST: Develop and test a common/scalable SIGINT system for multiple SIGINT platforms (MQ-1 and MQ-9) using an open system architecture. <i>FY 2009 Accomplishments:</i> In FY 2009: Completed the buildup of the ASIP-1C sensor hardware and software in preparation for Factory Acceptance Testing scheduled for 2QFY10. This effort included building three ASIP-1C chassis with associated hardware and the development of two new special signals (Brushawg and Yellowjacket). Completed an initial ASIP-2C design in coordination with the MQ-9 contractor. <i>FY 2010 Plans:</i> In FY 2010: Complete Factory Acceptance Test (FAT) for the ASIP-1C program and then transfer the ASIP-1C assets to the ASIP-2C program (Decision to stop the ASIP-1C program after FAT was approved by OSD in Oct 09). Develop the ASIP-2C prototype for the MQ-9 and prepare to conduct demo flights of the prototype sensor in 2QFY11. <i>FY 2011 Base Plans:</i> In FY 2011: Integrate and demonstrate the ASIP-2C on a surrogate MQ-9 and start the E&MD phase in 4QFY11. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.						22.728	58.033	29.751	0.000	29.751	
Accomplishments/Planned Programs Subtotals						22.728	58.033	29.751	0.000	29.751	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0205219F: <i>MQ-9 (APAF)</i>	0.000	0.000	18.283	0.000	18.283	95.362	165.362	168.378	163.294	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	19.865	24.771	6.219	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675182: <i>MQ-1/MQ-9 (Airborne SIGINT Development - Predator)</i>
--	---	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0205219F (1): <i>MQ-9 (APAF-mods)</i>											

D. Acquisition Strategy

(U) SIGINT capabilities will be integrated onto these platforms using an evolutionary acquisition approach.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675182: <i>MQ-1/MQ-9 (Airborne SIGINT Development - Predator)</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SIGINT Sensors Integration	Various/ Various	General Atomics San Diego, CA	0.169	1.483	Jan 2010	6.024	Jan 2011	0.000		6.024	Continuing	Continuing	Continuing
SIGINT Sensors Development	SS/CPIF	Northrop Grumman ESL San Jose, CA	31.702	48.772	Nov 2009	22.956	Nov 2010	0.000		22.956	Continuing	Continuing	Continuing
Subtotal			31.871	50.255		28.980		0.000		28.980			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Management, Various Integration Efforts, & Flight Test	Various/ Various	Various Various	4.744	7.778	Nov 2009	0.771	Nov 2010	0.000		0.771	Continuing	Continuing	Continuing
Subtotal			4.744	7.778		0.771		0.000		0.771			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675182: <i>MQ-1/MQ-9 (Airborne SIGINT Development - Predator)</i>
--	---	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	36.615	58.033	29.751	0.000	29.751			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

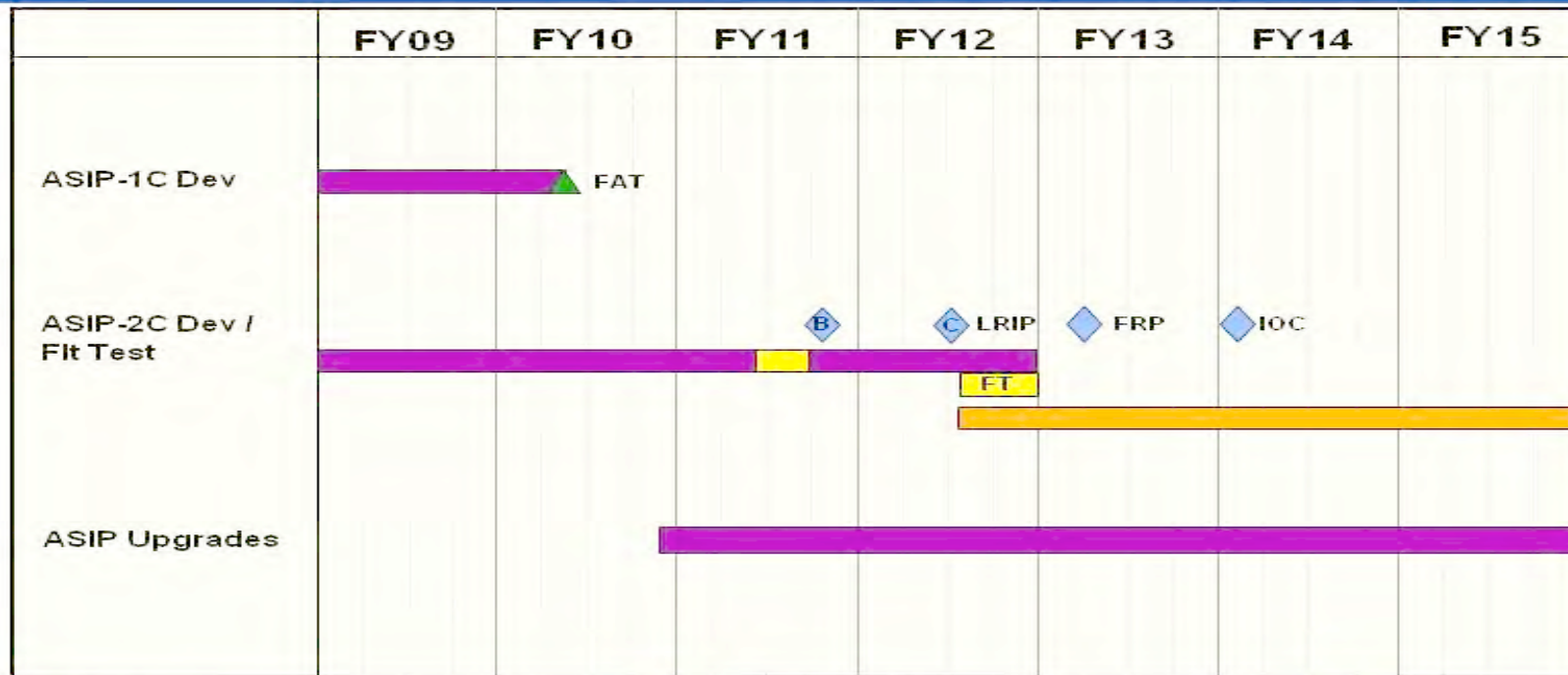
PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*

PROJECT

675182: *MQ-1/MQ-9 (Airborne SIGINT Development - Predator)*



ASIP-1C/2C Schedule



- Concept activities
- Production / fielding
- Design / development
- Pre-Production
- Integration / test
- Key events
- Key events

PB11 R-Docs

Depicted by installation/production flow

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*

PROJECT

675182: *MQ-1/MQ-9 (Airborne SIGINT Development - Predator)*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
ASIP-1C Development & Flight Test	1	2009	2	2010
ASIP-2C Development & Flight Test	1	2009	4	2011

UNCLASSIFIED

R-1 Line Item #182

Page 14 of 43

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>				PROJECT 675183: <i>Common Development (Airborne SIGINT Development - Common Development)</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675183: <i>Common Development (Airborne SIGINT Development - Common Development)</i>	57.951	32.837	59.048	0.000	59.048	60.227	68.736	86.762	88.032	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

(U) This project supports the development of the Airborne Signals Intelligence payload (ASIP) sensors for use on multiple platforms as well as projects common to the ASE PE overall to include, but not limited to: Air Force Cryptologic Architecture (AFCA) maintenance, modeling and simulation efforts and NATO Signals Intelligence (SIGINT) efforts.

A. Mission Description and Budget Item Justification

(U) This project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with the insertion of new capabilities integrated into the ASIP sensors and their associated air and ground components that will be used on/by more than one platform. The common development SIGINT cost element/BPAC also supports development of new sensors capabilities and identifies suitable replacements for components affected by diminishing manufacturing sources. New capabilities are developed by separate projects. The current sensors being developed are the ASIP (which has completed developmental testing on the U-2 and is being tested on the Global Hawk (RQ-4)), and the scalable ASIP payloads for the MQ-1 (ASIP-1C) and MQ-9 (ASIP-2C). The AF has descoped the SIGINT program for the MQ-1 and will transfer the Hardware/Software (HW/SW) to the SIGINT program for the MQ-9 after completion of the factory acceptance testing (FAT). The systems' open architecture and Joint Airborne SIGINT Architecture (JASA) compliant design supports streamlined integration of ASIP onto additional ISR platforms.

(U) The ASIP Family of Systems (FoS) will design and build a common/scalable SIGINT system designed for maximum coverage of the electromagnetic spectrum through the use of an integrated high and low band system. ASIP has delivered developmental units for integration and test on both the RQ-4 and U-2. ASIP-2C will develop a SIGINT sensor for the MQ-9. Capability improvements will be inserted into the ASIP family of sensors through individual development efforts that exploit signals of interest identified as service priorities by the Air Force SIGINT Capabilities Working Group.

(U) This strategy provides the warfighter with a near term combat capability with increased capability improvements accomplished based on the evolving threat as soon as technology and risk achieve satisfactory levels. Sensors will be integrated and tested on the various platforms as funding permits.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675183: <i>Common Development (Airborne SIGINT Development - Common Development)</i>				
(U) This program effort is Budget Activity 7, Operational Systems Development, because it involves Air Force RDT&E necessary to field essential operational capabilities.						
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Develop and test a common/scalable SIGINT system for multiple SIGINT platforms (U-2, Global Hawk, MQ-1 and MQ-9) using an open system architecture. <i>FY 2009 Accomplishments:</i> In FY 2009: Completed U-2 ASIP development testing. Conducted an operational assessment on the U-2. Continued ASIP development and testing on the Global Hawk. Completed studies to improve ASIP electronic antenna unit performance. Continued development of the ASIP-1C for the MQ-1. <i>FY 2010 Plans:</i> In FY 2010: Complete the development and testing of the ASIP on the Global Hawk. Support preparation for the ASIP Global Hawk Initial Operational and Test Evaluation (IOT&E). Begin ASIP testing with the upgraded AF-DCGS software to support multi-ship capabilities. Continue development of the ASIP-1C for the MQ-1. <i>FY 2011 Base Plans:</i> In FY 2011: Complete ASIP Global Hawk Initial Operational and Test Evaluation (IOT&E). Complete analysis of all open/future problems associated with the development and IOT&E flights. Fix major deficiencies found during the Global Hawk tests. Continue new signal capability/enhancements development. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.	57.951	32.837	59.048	0.000	59.048	
Accomplishments/Planned Programs Subtotals		57.951	32.837	59.048	0.000	59.048

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675183: <i>Common Development (Airborne SIGINT Development - Common Development)</i>
--	---	--

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0305220F: <i>RQ-4 Sensor Integration- Sensor Development (APAF)</i>	63.223	58.869	67.667	0.000	67.667	98.321	105.505	106.392	79.439	445.064	0.000
• PE 0305220F (1): <i>RQ-4 Sensor Integration- Sensor Development (APAF - Mods)</i>	101.838	128.265	95.506	0.000	95.506	51.080	5.447	2.960	0.000	0.000	0.000

D. Acquisition Strategy

Signals Intelligence capabilities will be developed and integrated onto various platforms using an evolutionary acquisition approach.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675183: <i>Common Development (Airborne SIGINT Development - Common Development)</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ASIP Baseline Sensor Development/Integration	SS/Various	Northrop Grumman San Jose, CA	129.241	14.841	Jan 2010	3.654	Jan 2011	0.000		3.654	0.000	147.736	Continuing
ASIP Baseline Development/Integration (AFDCGS Ground Control Processor Integration)	SS/CPPIF	Lockheed Martin Astronautics Denver, CO	16.141	1.851	Jan 2010	2.489	Jan 2011	0.000		2.489	0.000	20.481	Continuing
ASIP Baseline Development/Integration (AFDCGS Deployable Ground Intercept Facility Integration)	SS/CPPIF	Raytheon Falls Church, VA	19.750	2.851	Jan 2010	2.488	Jan 2011	0.000		2.488	0.000	25.089	Continuing
ASIP Upgrades Development	TBD/TBD	Northrop Grumman San Jose, CA	0.000	0.000		46.927	Jan 2011	0.000		46.927	Continuing	Continuing	Continuing
ASIP-1C Development	SS/CPPIF	Northrop Grumman San Jose, CA	34.427	7.924	Jan 2010	0.000		0.000		0.000	0.000	42.351	Continuing
ASIP-1C Integration	SS/CPPIF	General Atomic Aeronautical Systems, Inc. San Diego, CA	0.266	0.000		0.000		0.000		0.000	0.000	0.266	Continuing
High Band System	SS/CPAF	Northrop Grumman San Jose, CA	4.874	0.000		0.000		0.000		0.000	0.000	4.874	Continuing
Various SIGINT Efforts		Various	5.337	2.600	Jan 2010	2.800	Jan 2011	0.000		2.800	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675183: <i>Common Development (Airborne SIGINT Development - Common Development)</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
	Various/ Various	Various											
Subtotal			210.036	30.067		58.358		0.000		58.358			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
(U) Management, Various Integration Efforts, & Flight Test	Various/ Various	Various Various	37.389	2.770	Jan 2010	0.690	Jan 2011	0.000		0.690	Continuing	Continuing	Continuing
Subtotal			37.389	2.770		0.690		0.000		0.690			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	247.425	32.837		59.048		0.000		59.048			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675183: <i>Common Development (Airborne SIGINT Development - Common Development)</i>
--	---	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

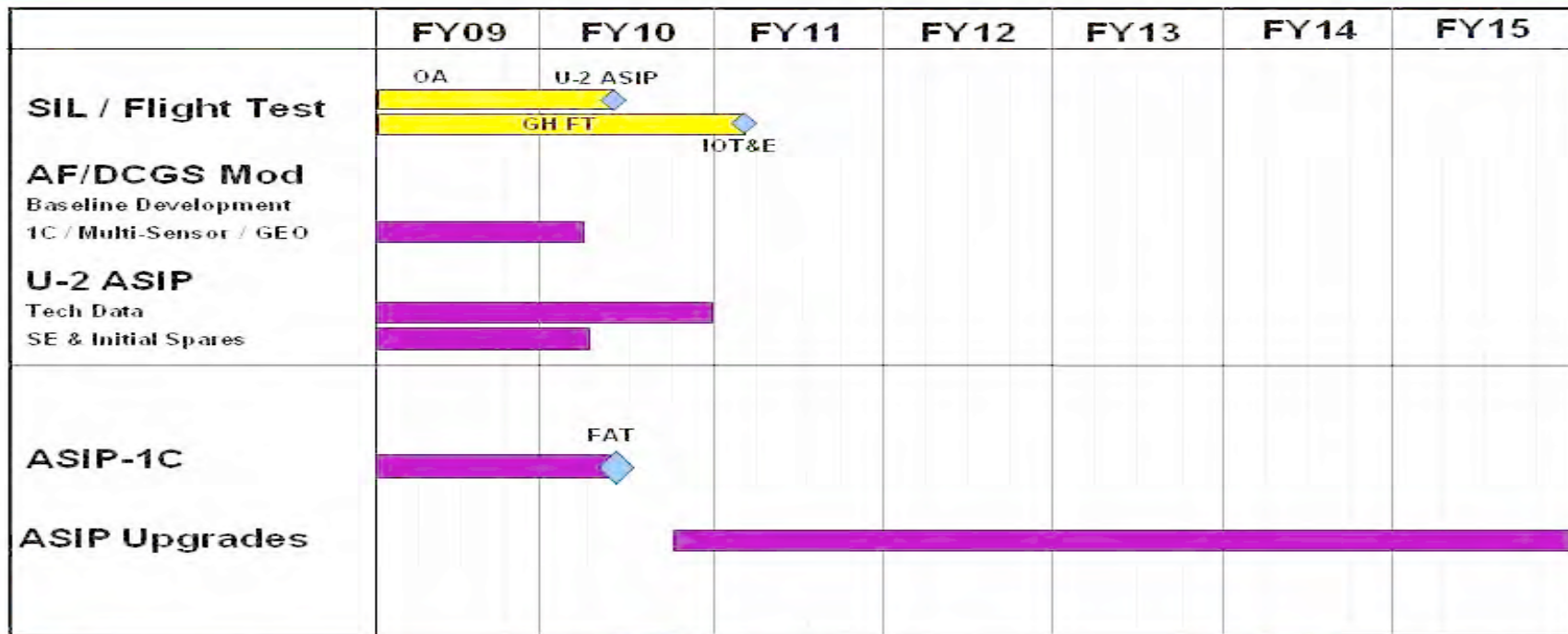
PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*

PROJECT

675183: *Common Development (Airborne SIGINT Development - Common Development)*



ASIP Common Development Schedule



PB11 R-Docs

Depicted by installation/production flow

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675183: <i>Common Development (Airborne SIGINT Development - Common Development)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
ASIP GH SIL & FT	1	2009	1	2011
AF DCGS Development- ASIP 1C (Multi-Sensor & GEO)	1	2009	1	2010
ASIP U-2 Tech Data	1	2009	4	2010
ASIP U-2 Support Equipment & Initial Spares	1	2009	1	2010
ASIP 1C Development & Flight Test	1	2009	2	2010
ASIP 2C Development & Flight Test	1	2009	4	2011
ASIP Upgrades	4	2010	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>				PROJECT 675184: <i>RQ-4 (Airborne SIGINT Development - Global Hawk)</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost	
675184: <i>RQ-4 (Airborne SIGINT Development - Global Hawk)</i>	17.811	20.952	15.083	0.000	15.083	6.494	6.697	11.694	11.905	Continuing	Continuing	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0			
Note												
(U) This project covers RQ-4 SIGINT development integration in the ASE PE.												
A. Mission Description and Budget Item Justification												
(U) This project supports sensor integration and test, flight test, design studies, engineering analysis and non-recurring engineering of the air and ground components for the Global Hawk SIGINT sensors. Also identifies suitable replacements for components affected by diminishing manufacturing sources.												
(U) This project provides the warfighter with a near-term, increased combat capability. Enhancements are implemented as soon as technology and risk achieve satisfactory levels. Capability improvements will be inserted into the ASIP family of sensors through individual development efforts that exploit signals of interest identified as service priorities by the Air Force SIGINT Capabilities Working Group												
(U) Funding includes completion of developmental logistics tasks associated with the design, development, and integration of ASIP and the ASIP Depot standup. Additional requirements include the Logistics Support Analysis (LSA) Taskings which consists of design and development of support equipment, technical orders, training courses/aids/devices, and shipping containers common to ASIP for U-2 and Global Hawk.												
(U) This program effort is equivalent to RDT&E budget activity 7, Operational Systems Development, because it involves Air Force R&D necessary to field essential operational capabilities.												
B. Accomplishments/Planned Program (\$ in Millions)												
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total		
MAJOR THRUST: Design, develop, test SIGINT capabilities for ASIP sensors, support equipment, technical orders, training, and shipping containers.						17.811	20.952	15.083	0.000	15.083		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675184: <i>RQ-4 (Airborne SIGINT Development - Global Hawk)</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0305220F: <i>RQ-4 Sensor Integration- Sensor Development (APAF)</i>	63.223	58.869	67.667	0.000	67.667	98.321	105.505	106.392	79.439	445.064	0.000
• PE 0305220F (1): <i>RQ-4 Sensor Integration- Sensor Development (APAF-Mods)</i>	101.838	128.265	95.506	0.000	95.506	51.080	5.447	2.960	0.000	0.000	0.000

D. Acquisition Strategy

(U) SIGINT capabilities will be integrated on to this platform using an Evolutionary Acquisition approach.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>				PROJECT 675184: <i>RQ-4 (Airborne SIGINT Development - Global Hawk)</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ASIP Baseline Development	SS/Various	Northrop Grumman Mission Sys San Jose, CA	36.272	6.311	Jan 2010	7.300	Jan 2011	0.000		7.300	0.000	49.883	Continuing
ASIP Upgrades Development	TBD/TBD	Northrop Grumman Mission Sys San Jose, CA	0.000	1.843	Aug 2010	2.261	Jan 2011	0.000		2.261	Continuing	Continuing	Continuing
ASIP LSA Taskings	Various/Various	Northrop Grumman Mission Sys San Jose, CA	7.243	12.798	Jan 2010	5.522	Jan 2011	0.000		5.522	Continuing	Continuing	Continuing
Subtotal			43.515	20.952		15.083		0.000		15.083			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Management, Various Integration Efforts, & Flight Test	Various/Various	Various Various	0.550	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.550	0.000		0.000		0.000		0.000			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675184: <i>RQ-4 (Airborne SIGINT Development - Global Hawk)</i>
--	---	---

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	44.065	20.952		15.083		0.000		15.083			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

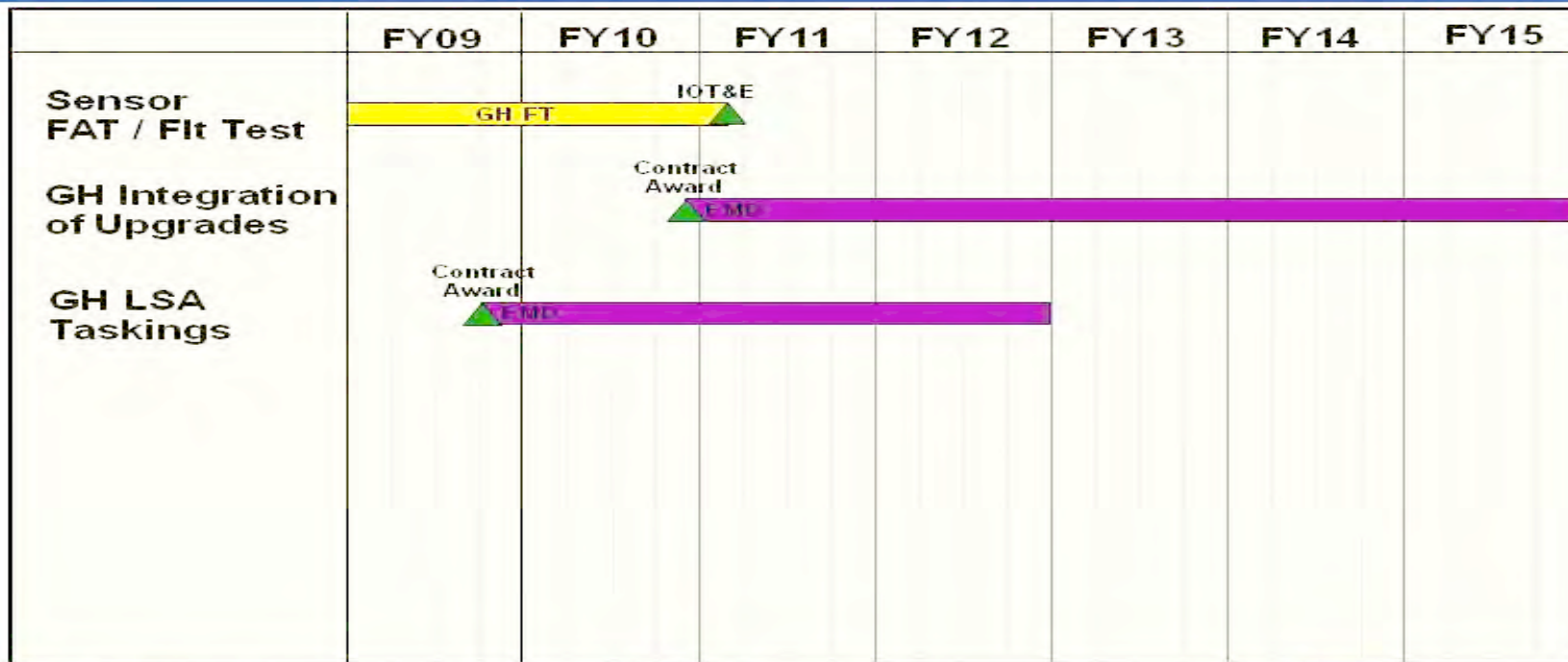
PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*

PROJECT

675184: *RQ-4 (Airborne SIGINT Development - Global Hawk)*



GH ASIP Schedule



- Concept activities
- Production / fielding
- Design / development
- Pre-Production
- Integration / test
- Key events

PB11 R-Docs

Depicted by installation/production flow

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675184: <i>RQ-4 (Airborne SIGINT Development - Global Hawk)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
GH ASIP Sensor Factory Acceptance Test & Flight Test	1	2009	1	2011
GH ASIP Upgrades	4	2010	4	2011
GH ASIP LSA Taskings	3	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675185: <i>Compass Bright (Airborne SIGINT Development - Compass Bright)</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675185: <i>Compass Bright (Airborne SIGINT Development - Compass Bright)</i>	10.085	5.913	6.022	0.000	6.022	6.029	6.056	9.081	9.211	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) The COMPASS BRIGHT program develops, demonstrates, and rapidly transitions advanced Air Force-specific SIGINT and radio frequency (RF) measurement and signature intelligence (MASINT) capabilities against emerging and future target signals. It is the only USAF program that pursues SIGINT and RF MASINT technology transition.

(U) The COMPASS BRIGHT program objective is to develop technologies for application in SIGINT and RF MASINT systems/subsystems. Acquisition and production of these developed technologies will occur within the appropriate platform programs.

(U) COMPASS BRIGHT projects are selected through a data call process whereby the USAF evaluates proposals from the labs and industry to select those projects that are most promising. This process is completed the year prior to award.

(U) This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Develops projects in the Signals Intelligence and Radio Frequency Measurement & Signature Intelligence areas for transition to platforms.	10.085	5.913	6.022	0.000	6.022

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675185: <i>Compass Bright (Airborne SIGINT Development - Compass Bright)</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2009 Accomplishments:</i> In FY2009: Initiated, continued or completed various SIGINT projects to include, Digital Antenna work, Advanced data correlation efforts, Digital Wideband Pulse Receiver work, and Improved Recording capabilities</p> <p><i>FY 2010 Plans:</i> In FY 2010: Initiated, continued or completed various SIGINT projects to include Advanced Wideband ELINT, Low Probability of Intercept improvements</p> <p><i>FY 2011 Base Plans:</i> In FY2011: Initiates, continues or completes various SIGINT projects to include Processing and search techniques</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>					
Accomplishments/Planned Programs Subtotals	10.085	5.913	6.022	0.000	6.022

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (13400): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

(U) Ongoing COMPASS BRIGHT technology development and demonstration contracts will continue through existing laboratory relationships and other existing contractual vehicles, with future development projects emphasizing full and open competition.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675185: <i>Compass Bright (Airborne SIGINT Development - Compass Bright)</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675185: <i>Compass Bright (Airborne SIGINT Development - Compass Bright)</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Various	Various/ Various	TBD Various	9.190	5.018	Oct 2009	5.127	Oct 2010	0.000		5.127	Continuing	Continuing	Continuing
Subtotal			9.190	5.018		5.127		0.000		5.127			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ASC/303 AESW (Aeronautical Systems Wing)	TBD/TBD	ASC WPAFB, OH	0.895	0.895		0.895		0.000		0.895	0.000	2.685	0.000
Subtotal			0.895	0.895		0.895		0.000		0.895	0.000	2.685	0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Cost Totals	10.085	5.913		6.022		0.000		6.022			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675185: <i>Compass Bright (Airborne SIGINT Development - Compass Bright)</i>
--	---	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

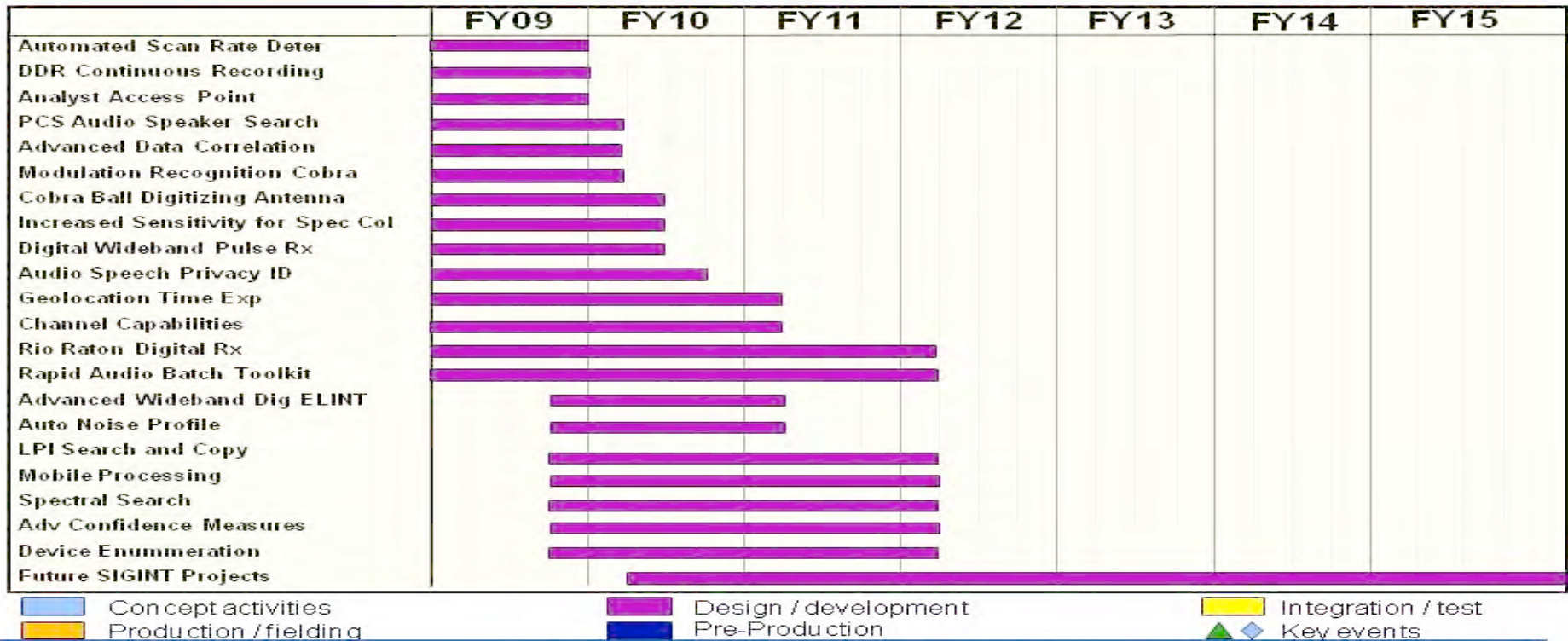
PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*

PROJECT

675185: *Compass Bright (Airborne SIGINT Development - Compass Bright)*



Compass Bright Schedule



Depicted by installation/production flow

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675185: <i>Compass Bright (Airborne SIGINT Development - Compass Bright)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Automated Scan Rate Determination	1	2009	4	2009
DDR Continuous Recording Bandwidth Improvement	1	2009	4	2009
Analyst Access Point	1	2009	4	2009
PCS Audio Speaker Search System	1	2009	1	2010
Advanced Data Correlation (IMOP Classifier)	1	2009	1	2010
Modulation Recognition Using Cell Processors	1	2009	1	2010
Cobra Ball Digitizing Antenna	1	2009	2	2010
Increased Sensitivity for Specialized Collections	1	2009	2	2010
Digital Wideband Pulse Reciever	1	2009	2	2010
Audio Speech Privacy ID Detector	1	2009	4	2010
Geolocation Time Experiment (Geo/Timex)	1	2009	1	2011
Channel Capabilities for Digital SIGINT System	1	2009	1	2011
Rio Raton Digital Receiver	1	2009	4	2011
Rapid Audio Batch Toolkit (RABT)	1	2009	4	2011
Advanced Wideband Digital ELINT	3	2009	1	2011
Auto Noise Profile	3	2009	1	2011
LPI Search and Copy	3	2009	4	2011
Mobile Processing	3	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675185: <i>Compass Bright (Airborne SIGINT Development - Compass Bright)</i>

Event	Start		End	
	Quarter	Year	Quarter	Year
Spectral Search	3	2009	4	2011
Advanced Confidence Measures	3	2009	4	2011
Device Enumeration (IMIE)	3	2009	4	2011
Future SIGINT Projects	2	2010	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675186: <i>Special Programs (Airborne SIGINT Development - Special Platforms)</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675186: <i>Special Programs (Airborne SIGINT Development - Special Platforms)</i>	16.144	6.635	12.036	0.000	12.036	11.894	9.060	4.891	4.965	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

(U) This project will be used to fund SIGINT development efforts in programs such as SENIOR SCOUT, Liberty Project Aircraft (MC-12W), NCCT SIGINT Projects, Small UAVs and others.

A. Mission Description and Budget Item Justification

(U) This project supports special SIGINT studies as well as the development and integration of advanced SIGINT capabilities on Senior Scout, Liberty Project Aircraft (MC-12W), NCCT SIGINT projects, and other special projects. Through extensive utilization of COTS-based solutions to fielding of needed capabilities, it also incurs the need for continuous diminishing manufacturing sources integration efforts consistent with the COTS technology cycle.

(U) Senior Scout development efforts will include antenna improvements, sensitivity upgrades, and radio frequency distribution upgrades. Additionally, development will begin to allow this platform to network with other SIGINT assets to increase collection accuracy.

(U) This project provides the warfighter with a near term combat capability with increased capability improvements accomplished as soon as technology and risk achieve satisfactory levels. Sensors will be integrated and tested on various platforms as funding permits.

(U) Budget Activity Justification: This program effort is Budget Activity 7, Operational Systems Development, because it involves Air Force RDT&E necessary to field essential operational capabilities.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
	16.144	6.635	12.036	0.000	12.036

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675186: <i>Special Programs (Airborne SIGINT Development - Special Platforms)</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: Develop SIGINT capabilities for special programs such as SENIOR SCOUT, Liberty Project Aircraft, Network Centric Collaborative Targeting (NCCT) projects, small UAVs and others.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Develop various SIGINT capabilities for integration and complete NCCT project.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Develop various SIGINT capabilities for integration.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Develop various SIGINT capabilities for integration.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	16.144	6.635	12.036	0.000	12.036

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0503115F: <i>Tactical Cryptologic Units (ANG) (APAF)</i>	11.697	3.592	3.990	0.000	3.990	4.062	4.138	4.213	4.288	0.000	0.000

D. Acquisition Strategy

(U) Signals Intelligence (SIGINT) capabilities will be integrated on to various classified platforms using an Evolutionary Acquisition approach.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675186: <i>Special Programs (Airborne SIGINT Development - Special Platforms)</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SIGINT Sensor Development-1	SS/Various	Lockheed Martin IS&GS Denver, CO	4.828	2.939	Oct 2009	1.100	Oct 2010	0.000		1.100	Continuing	Continuing	Continuing
SIGINT Sensor Development-2	SS/Various	Zeta Associates Fairfax VA	1.855	1.000	Nov 2009	1.513	Oct 2010	0.000		1.513	0.000	4.368	0.000
SIGINT Sensor Fusion and Dissemination	SS/Various	L-3 Comm West Salt Lake City, UT	7.679	0.000		0.000		0.000		0.000	7.679	15.358	0.000
Low Level Signal Detection	SS/Various	Lockheed Martin IS&GS Denver, CO	2.550	0.696	Oct 2009	3.850	Dec 2010	0.000		3.850	0.000	7.096	0.000
Wideband Receivers	SS/Various	Lockheed Martin IS&GS Denver, CO	0.000	2.000	Apr 2010	3.543	Dec 2010	0.000		3.543	0.000	5.543	0.000
Sensor Fusion/ Dissemination	SS/Various	Lockheed Martin IS&GS Denver, CO	0.000	0.000		2.030	Jan 2011	0.000		2.030	0.000	2.030	0.000
NCCT Network Centric Collaborative Targetting	SS/Various	L-3 ComCept Rockwall, TX	5.632	0.000		0.000		0.000		0.000	0.000	5.632	0.000
Subtotal			22.544	6.635		12.036		0.000		12.036			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675186: <i>Special Programs (Airborne SIGINT Development - Special Platforms)</i>
--	---	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	22.544	6.635	12.036	0.000	12.036			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

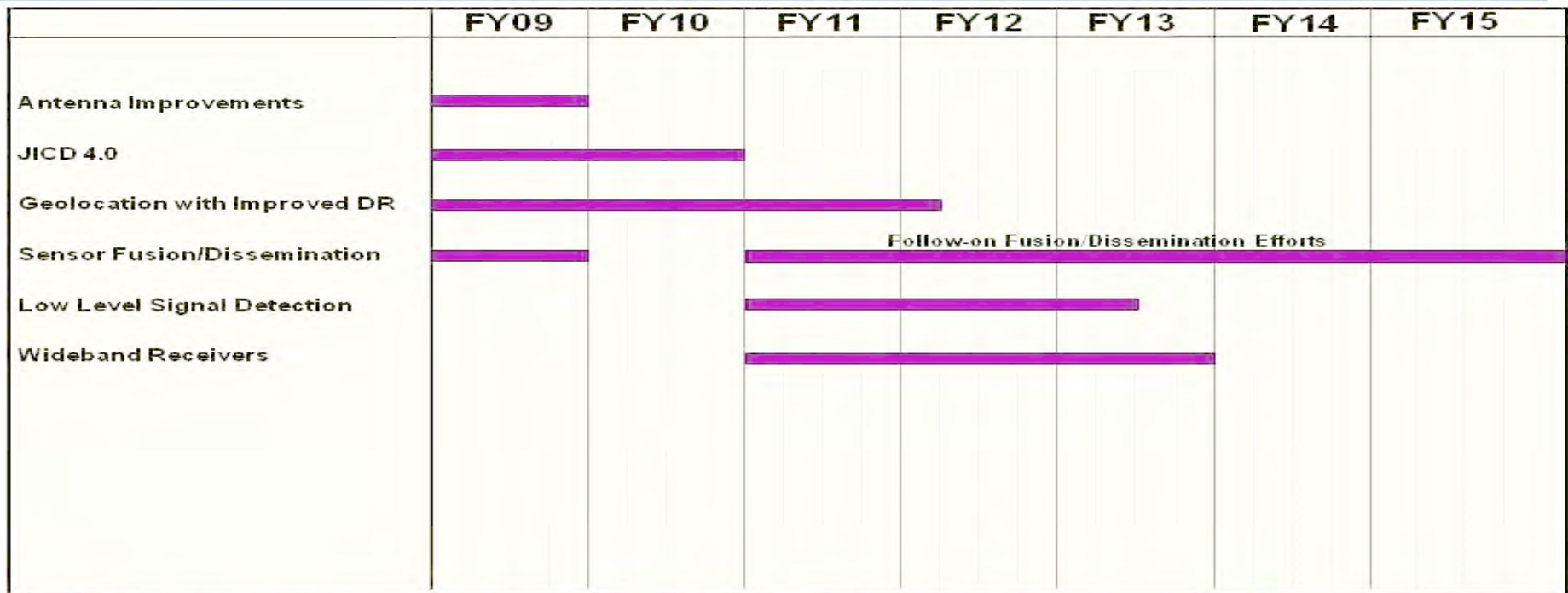
PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*

PROJECT

675186: *Special Programs (Airborne SIGINT Development - Special Platforms)*



Special Projects ASE Schedule



■ Concept activities
 ■ Design / development
 ■ Integration / test
■ Production / fielding
 ■ Pre-Production
 ▲ ◆ Key events

PB10 R-Docs

Depicted by installation/production flow

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0304260F: <i>Airborne SIGINT Enterprise (JMIP)</i>	PROJECT 675186: <i>Special Programs (Airborne SIGINT Development - Special Platforms)</i>
--	---	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Antenna Improvements	1	2009	4	2009
JCID 4.0	1	2009	4	2010
Geolocation With Improved DR	1	2009	4	2011
Sensor Fusion/Dissemination	1	2009	4	2011
Low Level Signal Detection	1	2011	4	2011
Wideband Receivers	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305099F: <i>Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	10.584	5.654	5.708	0.000	5.708	5.429	5.414	5.493	5.575	Continuing	Continuing
674689: <i>Global Access Architecture</i>	10.584	5.654	5.708	0.000	5.708	5.429	5.414	5.493	5.575	Continuing	Continuing

A. Mission Description and Budget Item Justification

Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM): this Air Force (AF) program centralizes engineering and technical expertise for CNS capability acquisitions and modifications to ensure that all AF aircraft and Unmanned Aerial Systems (UAS) comply with appropriate CNS/ATM and Navigation Safety performance standards and requirements enabling access to U.S. and international nation/state managed airspace. The 853 Electronic Systems Group (ELSG) supports AF aircraft and UAS CNS/ATM acquisitions as the AF's centralized focal point for identifying, analyzing, and evaluating internationally accepted civil aviation authority operational airspace rules, procedures and requirements worldwide. This group of experts works to identify, analyze, and evaluate the technical performance standards and requirements of the prescribed CNS capabilities and assist platform program offices in the design and integration of the capabilities required to ensure access to civil airspace worldwide. Department of Defense policy states that military platforms conducting peacetime operations will conform to applicable rules to ensure interoperability and transparency within national and international airspace. The 853 ELSG verifies that the system's end-to-end performance for each CNS capability integrated into AF platforms complies with these internationally accepted rules and standards. Per AFD 63-13, the 853 ELSG will develop and maintain CNS/ATM performance matrices used to identify specific CNS/ATM requirements and will provide acquisition and engineering support services through the entire acquisition management effort to include development of technical architectures, program management reviews and test planning for each AF platform. Furthermore, the 853 ELSG will develop and award Indefinite Delivery/Indefinite Quantity contracts for centralized procurement and sustainment of CNS/ATM and Nav Safety products and promote commonality of CNS equipment and architectures between platforms. The 853 ELSG will also participate in the development of Operational Safety, Suitability and Effectiveness assurance and Airworthiness Certification Plans. Dual-use capabilities of avionics to satisfy both civil CNS/ATM and military unique capability requirements will be explored as well as interoperability enhancements to expand net-centric concepts. The 853 ELSG will facilitate and participate in development and testing of CNS box-level prototypes. The 853 ELSG conducts studies and prototyping efforts to ensure AF aircraft are postured to meet current and evolving civil standards leading to the concept of "free flight." This program is assigned Budget Activity 7, Operational Systems Development, based on RDT&E work to implement and integrate appropriate civil standards to ensure transparent Air Force operations and access to worldwide civil airspace. The 853 ELSG also provides acquisition and engineering support to the DoD Lead Service Office for the interagency Next Generation Air Transportation System (NextGen) initiative. The Next Gen initiative, and similar initiatives globally (e.g. Single European Sky) will impact all Air Force platforms. 853 ELSG will develop and coordinate CNS/ATM architectures with the FAA and other regulatory agencies to allow unrestricted access for UAS into global civil airspace. The 853 ELSG will identify UAS equipage roadmaps, facilitate technology development and advocate policy changes to allow unfettered airspace access.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305099F: <i>Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	6.275	6.120	0.000	0.000	0.000
Current President's Budget	10.584	5.654	5.708	0.000	5.708
Total Adjustments	4.309	-0.466	5.708	0.000	5.708
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.174	0.000			
• Other Adjustments	4.483	-0.466	5.708	0.000	5.708

Change Summary Explanation

FY09: Other Adjustments: \$4.5M for PACARS prototype and NextGen/CNS/ATM reports and studies, \$0.017 Congressional Program Reduction, and \$0.174 SBIR/STTR transfer.

FY10: Other Adjustments: \$-0.466 for RMD 702 and non-fuel purchase inflation.

UNCLASSIFIED

R-1 Line Item #185

Page 2 of 10

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305099F: <i>Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)</i>	PROJECT 674689: <i>Global Access Architecture</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674689: <i>Global Access Architecture</i>	10.584	5.654	5.708	0.000	5.708	5.429	5.414	5.493	5.575	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM): this Air Force (AF) program centralizes engineering and technical expertise for CNS capability acquisitions and modifications to ensure that all AF aircraft and Unmanned Aerial Systems (UAS) comply with appropriate CNS/ATM and Navigation Safety performance standards and requirements enabling access to U.S. and international nation/state managed airspace. The 853 Electronic Systems Group (ELSG) supports AF aircraft and UAS CNS/ATM acquisitions as the AF's centralized focal point for identifying, analyzing, and evaluating internationally accepted civil aviation authority operational airspace rules, procedures and requirements worldwide. This group of experts works to identify, analyze, and evaluate the technical performance standards and requirements of the prescribed CNS capabilities and assist platform program offices in the design and integration of the capabilities required to ensure access to civil airspace worldwide. Department of Defense policy states that military platforms conducting peacetime operations will conform to applicable rules to ensure interoperability and transparency within national and international airspace. The 853 ELSG verifies that the system's end-to-end performance for each CNS capability integrated into AF platforms complies with these internationally accepted rules and standards. Per AFDPD 63-13, the 853 ELSG will develop and maintain CNS/ATM performance matrices used to identify specific CNS/ATM requirements and will provide acquisition and engineering support services through the entire acquisition management effort to include development of technical architectures, program management reviews and test planning for each AF platform. Furthermore, the 853 ELSG will develop and award Indefinite Delivery/Indefinite Quantity contracts for centralized procurement and sustainment of CNS/ATM and Nav Safety products and promote commonality of CNS equipment and architectures between platforms. The 853 ELSG will also participate in the development of Operational Safety, Suitability and Effectiveness assurance and Airworthiness Certification Plans. Dual-use capabilities of avionics to satisfy both civil CNS/ATM and military unique capability requirements will be explored as well as interoperability enhancements to expand net-centric concepts. The 853 ELSG will facilitate and participate in development and testing of CNS box-level prototypes. The 853 ELSG conducts studies and prototyping efforts to ensure AF aircraft are postured to meet current and evolving civil standards leading to the concept of "free flight." This program is assigned Budget Activity 7, Operational Systems Development, based on RDT&E work to implement and integrate appropriate civil standards to ensure transparent Air Force operations and access to worldwide civil airspace. The 853 ELSG also provides acquisition and engineering support to the DoD Lead Service Office for the interagency Next Generation Air Transportation System (NextGen) initiative. The Next Gen initiative, and similar initiatives globally (e.g. Single European Sky) will impact all Air Force platforms. 853 ELSG will develop and coordinate CNS/ATM architectures with the FAA and other regulatory agencies to allow unrestricted access for UAS into global civil airspace. The 853 ELSG will identify UAS equipage roadmaps, facilitate technology development and advocate policy changes to allow unfettered airspace access.

UNCLASSIFIED

R-1 Line Item #185

Page 3 of 10

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305099F: <i>Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)</i>	PROJECT 674689: <i>Global Access Architecture</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: Supporting platform program offices in their efforts to ensure the platform meets the performance standards to ensure access to airspace to conduct operations, assessing CNS capabilit...</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Development of PACARS unit prototype. Ensure air transportation system meets the national air transportation safety, security, mobility, efficiency, and capability needs in support of NextGen. The NextGen initiative, and similar initiatives globally (e.g. Single European Sky) will impact all Air Force platforms. Continuation of operational requirements analysis, demonstration, and evaluation of CNS/ATM, as well as system architecture design and development.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Gather data to build safety case for unrestricted UAS operations at Palmdale, CA/Grand Forks AFB, ND. UAS equipage roadmaps, technology development and policy changes will allow unfettered airspace access. CNS/ATM architectures will be developed and coordinated with the FAA and other regulatory agencies to allow unrestricted access for UAS into global civil airspace. Continuation of operational requirements analysis, demonstration, and evaluation of CNS/ATM, as well as system architecture design and development.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: CNS/ATM architectures will be developed and coordinated with the FAA and other regulatory agencies to allow unrestricted access for UAS into global civil airspace. UAS equipage roadmaps, technology development and policy changes will allow unfettered airspace access. Continuation of operational requirements analysis, demonstration, and evaluation of CNS/ATM, as well as system architecture design and development. Gather data to build safety case for unrestricted UAS operations at Palmdale, CA/Grand Forks AFB, ND.</p>	10.584	5.654	5.708	0.000	5.708

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305099F: <i>Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)</i>	PROJECT 674689: <i>Global Access Architecture</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not applicable					
Accomplishments/Planned Programs Subtotals	10.584	5.654	5.708	0.000	5.708

C. Other Program Funding Summary (\$ in Millions)											
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (13970): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy
853ELSG CNS/ATM Acquisition Strategy guides CNS and NAV safety equipment procurements for AF Aircraft/UAS Single Managers. This strategy ensures systems standardization and interoperability and directly supports the air worthiness certification of AF aircraft/UAS that operate in national and international air traffic environments. The Group will collaborate to provide technical support and expertise, execute system performance assessments and will interface with product/support centers, battle labs, and DoD research facilities in the execution of the assigned task. Program research and development agreements, cooperative research and development agreements, and Indefinite Delivery/Indefinite Quantity (ID/IQ) contracts will be competitively awarded.

E. Performance Metrics
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305099F: <i>Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)</i>	PROJECT 674689: <i>Global Access Architecture</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
The tasks defined cover technical development of systems to monitor avionics equipage of US military aircraft, participation in US and international specification and standards-setting organization...	TM	CNS/ATM MIT/Lincoln Labs: Lexington Ma	0.000	1.176	Jan 2010	1.523	Jan 2011	0.000		1.523	Continuing	Continuing	0.000
The tasks defined cover technical development of systems to monitor avionics equipage of US military aircraft, participation in US and international specification and standards-setting organiza... (1)	TM	NextGen MIT Lincoln Labs Lexington Ma	0.200	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
Providing various technical support, operational requirements, and assessing CNS cababilities	TM	CNS ATM MITRE: Bedford Ma	3.010	2.678	Jan 2010	2.876	Jan 2011	0.000		2.876	Continuing	Continuing	0.000
Providing various technical support	TM	NextGen MITRE, Bedford Ma	0.148	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305099F: <i>Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)</i>				PROJECT 674689: <i>Global Access Architecture</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Develop PACARS communication management unit prototype	TBD/TBD	CNS ATM Rockwell Collins	2.000	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
Research risk assessment of Air Force mission sets and user requirements environments against changing policies within airspace environments	TBD/TBD	NextGen DTIC	1.670	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
Provide various technical support-A&AS-ETASS	TM	CNS ATM Jacobs Technology Lincoln Ma	0.934	0.785	Jan 2010	0.747	Jan 2011	0.000		0.747	Continuing	Continuing	0.000
Subtotal			7.962	4.639		5.146		0.000		5.146			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305099F: <i>Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)</i>	PROJECT 674689: <i>Global Access Architecture</i>
--	--	---

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Provide program office support-A&AS-PASS	TM	CNS ATM Quantech Lexington MA	0.083	0.098	Jan 2010	0.093	Jan 2011	0.000		0.093	Continuing	Continuing	0.000
Provide program office support-A&AS-PASS (1)	TM	NextGen Quantech Lexington MA	0.336	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
Provide program office support-A&AS-SCS	TM	CNS ATM Tecolote Goleta CA	0.063	0.096	Jan 2010	0.091	Jan 2011	0.000		0.091	0.000	0.250	0.000
Program Office Support	Various/ Various	TBD CNS ATM	1.657	0.821	Aug 2010	0.378	Aug 2011	0.000		0.378	0.000	2.856	0.000
Program Office Support (2)	Various/ Various	NextGen TBD	0.483	0.000		0.000		0.000		0.000	0.000	0.483	0.000
Subtotal			2.622	1.015		0.562		0.000		0.562			0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	10.584	5.654	5.708	0.000	5.708			0.000

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305099F: Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)

PROJECT

674689: Global Access Architecture



U.S. AIR FORCE

853d ELSG/NT Schedule (FY11 PBR-Round 2)



NT	FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
C-5 AMP/RERP	Full CNS/ATM Upgrade																											
C-17									Blocks 17, 18 and 19 (through 2016)																			
C-130 AMP									222 Aircraft (through 2016)																			
C-130J									Block 7.0 (CPDLC/CMU/ADS-A), Block 8.0 (RNP/RNAV, ADS-B)																			
KC-135									Blocks 40.5 and 45 Production/Installation (through 2016)																			
B-52									FMI/8.33 Radio/BRNAV Upgrades																			
A-10					Mode S ELS/8.33 Radio																							
E-3									GINS anomalies/NAVWAR/DRAGON																			
F-35									RVSM, RNP/RNAV, ADS-B																			
F-16									Mode S Update to Elementary Surveillance																			
F-22									CNS/ATM Capability Analysis																			
EC-130									CNS/ATM Avionics Baseline, Requirements Development, Acquisition and Integration																			
AFSOC									Fixed Wing/Rotary Wing CNS/ATM Avionics Baseline, Requirements Development, Acquisition and Integration																			
UAS									Ground Based Sense and Avoid Capabilities Analysis																			
									Airborne Sense and Avoid Capability Development																			
ID/IQ Contract (Award 2/7/06) CNS/ATM I																					Year 1 of 5 Additional Opt Yrs							

Integrity - Service - Excellence

1

UNCLASSIFIED

R-1 Line Item #185

Page 9 of 10

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305099F: <i>Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)</i>	PROJECT 674689: <i>Global Access Architecture</i>
--	--	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Continue operational requirements analysis, demonstration, and evaluation	1	2009	4	2011
Continue assessing CNS capability compliance with nation/state rule making	1	2009	4	2011
Continue acquisition of ID/IQ CNS avionics equipment and components	1	2009	4	2011
Continue Nav/Safety and GPS/NAVWAR integration and interoperability evaluations	1	2009	4	2011
Continue system architecture design and development	1	2009	4	2011
Gather data to build safety case for unrestricted UAS operations at Palmdale, CA/Grand Forks AFB, ND	1	2010	4	2011
Program Office Support	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305103F: <i>Cyber Security Initiative</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	2.020	2.065	2.030	0.000	2.030	2.033	2.060	2.058	2.059	Continuing	Continuing
671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>	2.020	2.065	2.030	0.000	2.030	2.033	2.060	2.058	2.059	0.000	0.000

A. Mission Description and Budget Item Justification

The DoD Cyber Crime Center (DC3) was created as a DoD center of excellence to efficiently organize, equip, train, and employ scarce resources to more effectively address the proliferation of computer crimes affecting the DoD. DC3 has a digital forensics laboratory, training program, institute, and National Cyber Investigative Joint Task Force Analytical Group.

To enable its operation, through the Defense Cyber Crime Institute (DCCI), DC3 will leverage research into cutting edge investigative challenges within the digital forensic discipline to advance efforts aimed at security networks through the use of active sensors. DCCI conducts liaison relationships by partnering with government, university and private industry computer security officials.

DCCI conducts deep dive research into metamorphic and polymorphic techniques embedded in malicious code; behavior patterns inherent to insider threat actors; and the viability of applying multiple anti-virus tools in parallel are among the efforts which have the potential to dramatically increase the ability to active sensors to detect security threats affecting DoD networks.

The Intrusions/Intruders Signature Program (IISP) provides for the R&D of products and technologies that detect trace and profile hostile cyber adversaries. This capability provides network monitoring and the framework for sharing and automating reverse engineering techniques.

Computer Incident Batch Oriented Recursive Examination (CIBORE) is used to aid the counterintelligence and law enforcement communities to respond to computer intrusions. It is also a data reduction tool that takes a large volume of data, identifies the known "good" and "bad" files and eliminates them from consideration, leaving several GBs of files as candidate malicious code files.

This program is categorized in Budget Activity (BA) 7 because it supports the development efforts of operational systems.

UNCLASSIFIED

R-1 Line Item #186

Page 1 of 7

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305103F: <i>Cyber Security Initiative</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	2.083	2.080	0.000	0.000	0.000
Current President's Budget	2.020	2.065	2.030	0.000	2.030
Total Adjustments	-0.063	-0.015	2.030	0.000	2.030
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.063	-0.015	2.030	0.000	2.030

Change Summary Explanation

FY11: The FY2010 President's Budget submittal did not reflect FY2011 through FY2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

R-1 Line Item #186

Page 2 of 7

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305103F: <i>Cyber Security Initiative</i>	PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>	2.020	2.065	2.030	0.000	2.030	2.033	2.060	2.058	2.059	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The DoD Cyber Crime Center (DC3) was created as a DoD center of excellence to efficiently organize, equip, train, and employ scarce resources to more effectively address the proliferation of computer crimes affecting the DoD. DC3 has a digital forensics laboratory, training program, institute, and National Cyber Investigative Joint Task Force Analytical Group.

To enable its operations, through the Defense Cyber Crime Institute (DCCI), DC3 will remain on the leading edge of computer technologies and techniques through research, development, testing and evaluation applied to digital evidence processing and computer forensic analysis; and by conducting liaison and by partnering with governmental, university, and private industry computer security officials.

DC3 will develop imaging tools, steganalysis and stegextraction tools, and password over-ride tools. These software tools will enable DC3 to increase the probability of data recovery that would otherwise remain undetected.

The Intrusions/Intruders Signature Program (IISP) provides for the R&D of products and technologies that detect trace and profile hostile cyber adversaries. This capability provides network monitoring and the framework for sharing and automating reverse engineering techniques.

Computer Incident Batch Oriented Recursive Examination (CIBORE) is used to aid the counterintelligence and law enforcement communities to respond to computer intrusions. It is also a data reduction tool that takes a large volume of data, identifies the known "good" and "bad" files and eliminates them from consideration, leaving several GBs of files as candidate malicious code files.

This program is categorized in Budget Activity (BA) 7 because it supports the development efforts of operational systems.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305103F: <i>Cyber Security Initiative</i>	PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Digital Forensic Tools <i>FY 2009 Accomplishments:</i> In FY 2009: Develop and validate tools. <i>FY 2010 Plans:</i> In FY 2010: Develop and validate tools. <i>FY 2011 Base Plans:</i> In FY 2011: Develop and validate tools. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not applicable	2.020	2.065	2.030	0.000	2.030
Accomplishments/Planned Programs Subtotals	2.020	2.065	2.030	0.000	2.030

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (14370): O&M (0305103)	14.721	14.626	14.675	0.000	14.675	14.703	14.964	14.951	15.001	0.000	0.000

D. Acquisition Strategy

All contracts will be awarded based on full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305103F: <i>Cyber Security Initiative</i>				PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
General Dynamics	C/FFP	Lithicum Maryland	2.020	2.065	Dec 2010	2.030	Dec 2011	0.000		2.030	Continuing	Continuing	Continuing
Subtotal			2.020	2.065		2.030		0.000		2.030			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.020	2.065	2.030	0.000	2.030			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

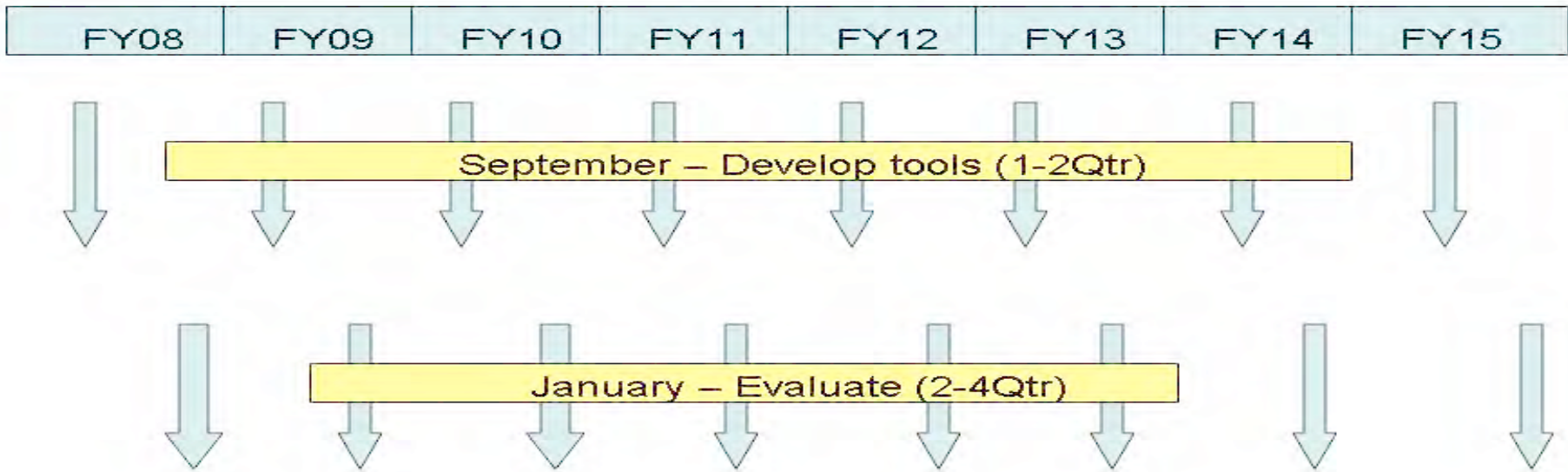
R-1 ITEM NOMENCLATURE

PE 0305103F: Cyber Security Initiative

PROJECT

671931: TECH SURVEIL COUNTER MEAS
EQPT

Cyber Security Initiative



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305103F: <i>Cyber Security Initiative</i>	PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Develop software tools	1	2009	2	2011
Evaluate software using digital evidence processing	2	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305105F: <i>DoD Cyber Crime Center</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.279	0.000	0.279	0.283	0.286	0.289	0.294	Continuing	Continuing
671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>	0.000	0.000	0.279	0.000	0.279	0.283	0.286	0.289	0.294	0.000	0.000

A. Mission Description and Budget Item Justification

Defense Cyber Crime Institute (DCCI) continues RDT&E collaboration efforts with Law Enforcement/Counterintelligence and cyber communities to identify digital forensic technology gaps, research potential solutions and develop tools based on those solutions to address the gaps.

DCCI leverage research into cutting edge investigative challenges within the digital forensics discipline to advance efforts aimed at securing networks, to include deep dive research into metamorphic and polymorphic techniques embedded in malicious code.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	0.279	0.000	0.279
Total Adjustments	0.000	0.000	0.279	0.000	0.279
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.279	0.000	0.279

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305105F: <i>DoD Cyber Crime Center</i>	PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>	0.000	0.000	0.279	0.000	0.279	0.283	0.286	0.289	0.294	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Defense Cyber Crime Institute (DCCI) continues RDT&E collaboration efforts with Law Enforcement/Counterintelligence and cyber communities to identify digital forensic technology gaps, research potential solutions and develop tools based on those solutions to address the gaps.

DCCI leverage research into cutting edge investigative challenges within the digital forensics discipline to advance efforts aimed at securing networks, to include deep dive research into metamorphic and polymorphic techniques embedded in malicious code.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Intrusion/Intruders Signature Tools <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: N/A <i>FY 2011 Base Plans:</i> In FY 2011: Continuation of above listed activities <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A	0.000	0.000	0.279	0.000	0.279

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305105F: <i>DoD Cyber Crime Center</i>	PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.279	0.000	0.279

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (14598): <i>N/A</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Contracts will be awarded based on full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305105F: <i>DoD Cyber Crime Center</i>				PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total		Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date			
Intrusion Signature Tools	MIPR	Mitre MA	0.000	0.000		0.279	Oct 2011	0.000		0.279	0.000	0.279	0.000	
Subtotal			0.000	0.000		0.279		0.000		0.279	0.000	0.279	0.000	

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	0.279	0.000	0.279	0.000	0.279	0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305105F: <i>DoD Cyber Crime Center</i>	PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>

DoD Cyber Crime Center Schedule

	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Steganography Tool			█				
Forensic Data Extraction			█				

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305105F: *DoD Cyber Crime Center*

PROJECT

671931: *TECH SURVEIL COUNTER MEAS EQPT*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Steganography Tools	1	2011	4	2011
Forensic Data Extraction	1	2011	4	2011

UNCLASSIFIED

R-1 Line Item #187

Page 6 of 6

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305110F: <i>Satellite Control Network</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	54.547	20.825	21.667	0.000	21.667	19.883	15.700	15.939	16.182	Continuing	Continuing
673276: <i>Satellite Control Network</i>	54.547	20.825	21.667	0.000	21.667	19.883	15.700	15.939	16.182	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Air Force Satellite Control Network (AFSCN) mission is to command and control space systems and to distribute space system information in support of DoD, Intelligence Community (IC), and Civil operational and RDT&E missions, and other designated users. The AFSCN is a fielded, globally-distributed infrastructure of control centers, Remote Tracking Stations (RTSs), and communications links that provides unique capability for designated users to deploy and operate their satellites. AFSCN provides the highly reliable command and control, communications, and range systems required to support the nation's surveillance, navigation, communications, warning, and weather satellite operations. Air Force Space Command (AFSPC) performs operations, maintenance, modernization, and sustainment of the system to provide operational capabilities validated by a US Strategic Command (USSTRATCOM) Initial Capabilities Document and a Headquarters USAF-approved Operational Requirements Document (ORD). This program element contains funds for the development and acquisition of this integrated national satellite telemetry, tracking, commanding, and data relay capability to meet the requirements of the growing inventory of operational and developmental satellite systems.

This program element funds the development and acquisition of AFSCN Improvement and Modernization (I&M), an ongoing program of replacements and upgrades which will meet validated USSTRATCOM and AFSPC operational requirements to replace non-standard, unsupportable equipment with more reliable, maintainable, interoperable, and standardized hardware and software. This new equipment is intended to enable AFSPC satellite operations to be performed with reduced hardware/software maintenance costs. The principal efforts within this program are focused on Range Upgrades, Network Operations Upgrades, and associated studies.

RANGE UPGRADES: This effort will upgrade the current RTSs. Several integrated efforts are grouped into the RTS Block Change (RBC) effort, which will standardize, automate and make interoperable the remote tracking stations through the replacement of outdated government-unique equipment with commercial off-the-shelf, standardized equipment and technology in order to reduce failures, correct operational deficiencies, and reduce operating and sustainment costs. Additionally, interoperability efforts to address standards and protocols and external user connectivity are included in this segment. FY11 funds continue development of an S-band high power amplifier and provide system engineering, integration and test support for the Colorado, Guam, Oakhanger, Hawaii, New Boston, and Thule Tracking Station RBC efforts as well as for the Transportable RBC #1 asset.

NETWORK OPERATIONS UPGRADES: These critical upgrades improve AFSCN resource management capabilities. No FY11 activities are budgeted.

This effort is in Budget Activity 7, Operational System Development, because it supports a fielded system.

UNCLASSIFIED

R-1 Line Item #188

Page 1 of 10

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305110F: <i>Satellite Control Network</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	16.547	20.991	0.000	0.000	0.000
Current President's Budget	54.547	20.825	21.667	0.000	21.667
Total Adjustments	38.000	-0.166	21.667	0.000	21.667
• Congressional General Reductions		-0.166			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	38.000	0.000	21.667	0.000	21.667

Change Summary Explanation

Note: The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

FY09: Increases (\$37.999M) for Electronic Scheduling & Dissemination (ESD) software design/development complete system level requirements, two software builds, and design reviews.

UNCLASSIFIED

R-1 Line Item #188

Page 2 of 10

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305110F: <i>Satellite Control Network</i>	PROJECT 673276: <i>Satellite Control Network</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
673276: <i>Satellite Control Network</i>	54.547	20.825	21.667	0.000	21.667	19.883	15.700	15.939	16.182	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Air Force Satellite Control Network (AFSCN) mission is to command and control space systems and to distribute space system information in support of DoD, Intelligence Community (IC), and Civil operational and RDT&E missions, and other designated users. The AFSCN is a fielded, globally-distributed infrastructure of control centers, Remote Tracking Stations (RTSs), and communications links that provides unique capability for designated users to deploy and operate their satellites. AFSCN provides the highly reliable command and control, communications, and range systems required to support the nation's surveillance, navigation, communications, warning, and weather satellite operations. Air Force Space Command (AFSPC) performs operations, maintenance, modernization, and sustainment of the system to provide operational capabilities validated by a US Strategic Command (USSTRATCOM) Initial Capabilities Document and a Headquarters USAF-approved Operational Requirements Document (ORD). This program element contains funds for the development and acquisition of this integrated national satellite telemetry, tracking, commanding, and data relay capability to meet the requirements of the growing inventory of operational and developmental satellite systems.

This program element funds the development and acquisition of AFSCN Improvement and Modernization (I&M), an ongoing program of replacements and upgrades which will meet validated USSTRATCOM and AFSPC operational requirements to replace non-standard, unsupportable equipment with more reliable, maintainable, interoperable, and standardized hardware and software. This new equipment is intended to enable AFSPC satellite operations to be performed with reduced hardware/software maintenance costs. The principal efforts within this program are focused on Range Upgrades, Network Operations Upgrades, and associated studies.

RANGE UPGRADES: This effort will upgrade the current RTSs. Several integrated efforts are grouped into the RTS Block Change (RBC) effort, which will standardize, automate and make interoperable the remote tracking stations through the replacement of outdated government-unique equipment with commercial off-the-shelf, standardized equipment and technology in order to reduce failures, correct operational deficiencies, and reduce operating and sustainment costs. Additionally, interoperability efforts to address standards and protocols and external user connectivity are included in this segment. FY11 funds continue development of an S-band high power amplifier and provide system engineering, integration and test support for the Colorado, Guam, Oakhanger, Hawaii, New Boston, and Thule Tracking Station RBC efforts as well as for the Transportable RBC #1 asset.

NETWORK OPERATIONS UPGRADES: These critical upgrades improve AFSCN resource management capabilities. No FY11 activities are budgeted.

This effort is in Budget Activity 7, Operational System Development, because it supports a fielded system.

UNCLASSIFIED

R-1 Line Item #188

Page 3 of 10

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305110F: <i>Satellite Control Network</i>	PROJECT 673276: <i>Satellite Control Network</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>Major Thrust: Range Upgrades to continue development of interoperability and RTS Block Change (RBC) efforts. These include high power amplifier development for S-band capability and predeployment ...</p> <p><i>FY 2009 Accomplishments:</i> In FY09: continued systems engineering, integration and operational testing for Vandenberg RBC gov't acceptance</p> <p><i>FY 2010 Plans:</i> In FY10: continued systems engineering, integration and testing for Eastern Vehicle Check Facility and Diego Garcia RBC gov't acceptance. Continued systems engineering integration and testing for ongoing Colorado, Guam, Oakhanger, Hawaii, New Boston, and Thule RBC efforts, as well as for the RBC transportable asset #1. Continue high power amplifier development for RBC to include S-band to enable dual-band uplink commanding.</p> <p><i>FY 2011 Base Plans:</i> In FY11: continue systems engineering, integration and testing for gov't acceptance of Colorado, Guam, Oakhanger, and Diego Garcia RBC upgrades as well as for the ongoing RBC transportable asset #1. Continue development of S-band high power amplifier for RBC efforts to enable dual band uplink commanding.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>		3.568	17.545	18.256	0.000	18.256
<p>Major Thrust: Network Operations Upgrades to continue Electronic Scheduling & Dissemination (ESD) upgrade, including completion of system level requirements, two software builds, and design reviews.</p> <p><i>FY 2009 Accomplishments:</i> In FY09: continued ESD upgrade to include completion of system level requirements, development of two software builds, and completion of preliminary design review.</p>		47.825	0.000	0.000	0.000	0.000

UNCLASSIFIED

R-1 Line Item #188

Page 4 of 10

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0305110F: <i>Satellite Control Network</i>		PROJECT 673276: <i>Satellite Control Network</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY10: N/A</p> <p><i>FY 2011 Base Plans:</i> In FY11: N/A</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>								
<p>Major Thrust: Program support to include FFRDC and SETA.</p> <p><i>FY 2009 Accomplishments:</i> In FY09: continued engineering support from Aerospace (FFRDC) and ARINC (SETA)</p> <p><i>FY 2010 Plans:</i> In FY10: continued engineering support from Aerospace (FFRDC) and ARINC (SETA)</p> <p><i>FY 2011 Base Plans:</i> In FY11: continued engineering support from Aerospace (FFRDC) and ARINC (SETA)</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>				3.154	3.280	3.411	0.000	3.411
Accomplishments/Planned Programs Subtotals				54.547	20.825	21.667	0.000	21.667

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305110F: <i>Satellite Control Network</i>	PROJECT 673276: <i>Satellite Control Network</i>
--	---	--

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0305110F: <i>Satellite Control Network (Space), OPAF</i>	62.768	58.689	60.383	0.000	60.383	66.355	68.811	69.831	66.031	0.000	0.000

D. Acquisition Strategy

The AF uses the competitively awarded Satellite Control Network Contract (SCNC), managed by Space and Missile System Center, to modernize and sustain the AFSCN on a non-interference basis as it continues to support operational, RDT&E, and other designated users. The AF has also awarded sole source contracts to Honeywell to continue to modernize the AFSCN.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305110F: <i>Satellite Control Network</i>	PROJECT 673276: <i>Satellite Control Network</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Satellite Control Network Contract	Various/ Various	Honeywell Colorado Springs, CO	164.290	17.545	Dec 2009	18.256	Dec 2010	0.000		18.256	Continuing	Continuing	Continuing
Subtotal			164.290	17.545		18.256		0.000		18.256			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Support (FFRDC, SETA, SPO ops)	Various/ Various	various various	83.389	3.280	Dec 2009	3.411	Dec 2010	0.000		3.411	Continuing	Continuing	Continuing
Subtotal			83.389	3.280		3.411		0.000		3.411			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	247.679	20.825		21.667		0.000		21.667			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305110F: <i>Satellite Control Network</i>	PROJECT 673276: <i>Satellite Control Network</i>
--	---	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	---------------------------	---------	-----------------	----------------	------------------	---------------------	------------	--------------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

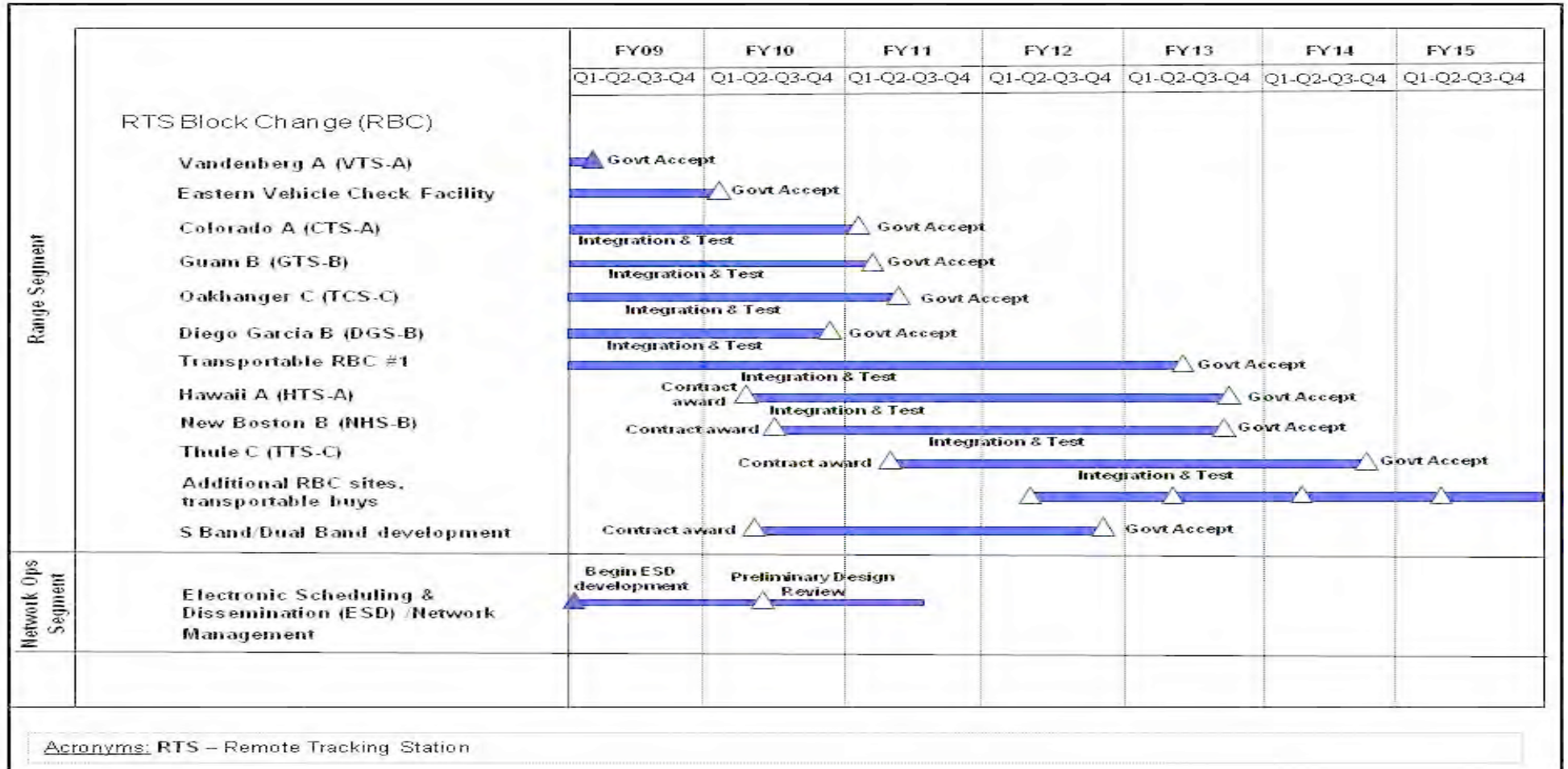
3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305110F: Satellite Control Network

PROJECT

673276: Satellite Control Network



UNCLASSIFIED

R-1 Line Item #188

Page 9 of 10

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305110F: <i>Satellite Control Network</i>	PROJECT 673276: <i>Satellite Control Network</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
- Vandenberg-A RBC Gov't acceptance	1	2009	1	2009
- Eastern Vehicle Check Facility testing/Gov't acceptance	1	2009	1	2010
- Hawaii-A RBC integration/testing	2	2010	4	2011
- Colorado RBC integration/testing/Gov't acceptance	1	2009	1	2011
- New Boston-B RBC integration/testing	2	2010	4	2011
- Diego Garcia-B integration/testing/Gov't acceptance	1	2009	4	2010
- Oakhanger-C RBC integration/testing/Gov't acceptance	1	2009	2	2011
- Thule-C RBC integration/testing	2	2011	4	2011
- Guam-B RBC integration/testing/Gov't acceptance	1	2009	1	2011
- S Band/Dual Band High Power Amplifier development	2	2010	4	2011
- Electronic Scheduling & Dissemination (ESD) upgrade development/preliminary design review	1	2009	2	2010

UNCLASSIFIED

R-1 Line Item #188

Page 10 of 10

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305111F: <i>WEATHER SERVICE</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	45.918	33.291	32.373	0.000	32.373	32.260	33.079	32.944	33.547	Continuing	Continuing
672738: <i>Weather Service</i>	45.918	33.291	32.373	0.000	32.373	32.260	33.079	32.944	33.547	Continuing	Continuing

A. Mission Description and Budget Item Justification

This budget activity funds operational development necessary to acquire, sustain, and enhance segments of the Air Force Weather Weapon System (AFWWS). Activities also include studies and analysis to support both current program planning and execution and future program planning. The AFWWS provides timely, accurate, consistent and relevant space and terrestrial weather information for global battlespace situational awareness. The AFWWS supports worldwide operations of Air Force and Army warfighters, Special Operation Forces (SOF), and other government agencies with weather observing and forecasting capabilities at in-garrison and deployed locations as well as centralized, reach-back capabilities. Air Force Weather (AFW) programs align under the five capability areas of Weather Data Collection (WDC), Weather Data Analysis (WDA), Weather Forecasting, Product Tailoring/Warfighter Applications (PT/WA), and Weather Dissemination (presently relies on Commercial-off-the-Shelf products and so does not use RDT&E funding). Through this alignment, AFW ensures an integrated and systems-oriented approach to program management decisions.

WDC provides automated terrestrial and space environmental sensing capabilities at fixed and deployed locations worldwide. WDA provides a net-centric infrastructure that assimilates worldwide sources of terrestrial and space weather data and produces decision-quality information for warfighters. Weather Forecasting provides advanced scientific numerical weather prediction capabilities for automated, high resolution forecast products for mission planning, rehearsal, and execution. Additionally, WDA and Forecasting capabilities will be expanded to integrate and exploit data from a new generation of environmental sensing satellites. PT/WA provides timely, local and regional target-scale weather information to operational commanders for a given Area of Responsibility, and at tactical levels, provides front-line weather information to warfighters in support of combat operations. PT/WA supports the 'train as you fight' concept by assuring fixed and deployable systems have a similar look and feel.

In February 2009 the Land Information System (LIS) achieved Initial Operational Capability, beginning replacement of 20+ year old legacy systems. LIS software unifies surface characterizations from multiple sources and provides consistent, high resolution soil profile, moisture, and temperature information needed to support, for example, Army tactical decisions aids and initialization of weather forecast models. In August 2009 implementation of the Joint Meteorology and Oceanography (METOC) Space Environment and Solar Segment (JMSESS) database replaced legacy databases and marked an initial step toward net-centric capabilities for space environmental monitoring and command and control operators vital to space situational awareness. Fielding of the Joint Environmental Toolkit (JET), Increment 1, by the Electronic Systems Center continued during FY 2009 with more than 140 sites installed by the end of September. JET is enhancing the availability of weather

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305111F: <i>WEATHER SERVICE</i>
--	---

information for use in Wings, Squadrons, and Air and Space Operations Centers, integration with Army decision processes, and exploitation of weather at global, regional, and tactical levels.

This effort is in Budget Activity 7, Operational System Development, because it supports operational software development and system tests associated with the upgrade and replacement of currently operational systems, systems already in production, and systems with approved production funds in the DoD budget.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	45.918	33.531	0.000	0.000	0.000
Current President's Budget	45.918	33.291	32.373	0.000	32.373
Total Adjustments	0.000	-0.240	32.373	0.000	32.373
• Congressional General Reductions		-0.240			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	32.373	0.000	32.373

Change Summary Explanation

In FY11: funding decreases from FY09 due to higher Air Force priorities.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305111F: <i>WEATHER SERVICE</i>	PROJECT 672738: <i>Weather Service</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
672738: <i>Weather Service</i>	45.918	33.291	32.373	0.000	32.373	32.260	33.079	32.944	33.547	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This budget activity funds operational development necessary to acquire, sustain, and enhance segments of the Air Force Weather Weapon System (AFWWS). Activities also include studies and analysis to support both current program planning and execution and future program planning. The AFWWS provides timely, accurate, consistent and relevant space and terrestrial weather information for global battlespace situational awareness. The AFWWS supports worldwide operations of Air Force and Army warfighters, Special Operation Forces (SOF), and other government agencies with weather observing and forecasting capabilities at in-garrison and deployed locations as well as centralized, reach-back capabilities. Air Force Weather (AFW) programs align under the five capability areas of Weather Data Collection (WDC), Weather Data Analysis (WDA), Weather Forecasting, Product Tailoring/Warfighter Applications (PT/WA), and Weather Dissemination (presently relies on Commercial-off-the-Shelf products and so does not use RDT&E funding). Through this alignment, AFW ensures an integrated and systems-oriented approach to program management decisions.

WDC provides automated terrestrial and space environmental sensing capabilities at fixed and deployed locations worldwide. WDA provides a net-centric infrastructure that assimilates worldwide sources of terrestrial and space weather data and produces decision-quality information for warfighters. Weather Forecasting provides advanced scientific numerical weather prediction capabilities for automated, high resolution forecast products for mission planning, rehearsal, and execution. Additionally, WDA and Forecasting capabilities will be expanded to integrate and exploit data from a new generation of environmental sensing satellites. PT/WA provides timely, local and regional target-scale weather information to operational commanders for a given Area of Responsibility, and at tactical levels, provides front-line weather information to warfighters in support of combat operations. PT/WA supports the 'train as you fight' concept by assuring fixed and deployable systems have a similar look and feel.

In February 2009 the Land Information System (LIS) achieved Initial Operational Capability, beginning replacement of 20+ year old legacy systems. LIS software unifies surface characterizations from multiple sources and provides consistent, high resolution soil profile, moisture, and temperature information needed to support, for example, Army tactical decisions aids and initialization of weather forecast models. In August 2009 implementation of the Joint Meteorology and Oceanography (METOC) Space Environment and Solar Segment (JMSESS) database replaced legacy databases and marked an initial step toward net-centric capabilities for space environmental monitoring and command and control operators vital to space situational awareness. Fielding of the Joint Environmental Toolkit (JET), Increment 1, by the Electronic Systems Center continued during FY 2009 with more than 140 sites installed by the end of September. JET is enhancing the availability of weather

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0305111F: <i>WEATHER SERVICE</i>		PROJECT 672738: <i>Weather Service</i>		
<p>information for use in Wings, Squadrons, and Air and Space Operations Centers, integration with Army decision processes, and exploitation of weather at global, regional, and tactical levels.</p> <p>This effort is in Budget Activity 7, Operational System Development, because it supports operational software development and system tests associated with the upgrade and replacement of currently operational systems, systems already in production, and systems with approved production funds in the DoD budget.</p> <p>B. Accomplishments/Planned Program (\$ in Millions)</p>						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: WDC provides automated terrestrial and space environmental sensing capabilities at fixed and deployed locations worldwide.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Participation with National Weather Service and Federal Aviation Administration in Product Improvement Plans for automated weather sensors and the Next Generation Weather Radar.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Participation with National Weather Service and Federal Aviation Administration in Product Improvement Plans for automated weather sensors and the Next Generation Weather Radar.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Participation with National Weather Service and Federal Aviation Administration in Product Improvement Plans for automated weather sensors and the Next Generation Weather Radar.</p> <p><i>FY 2011 OCO Plans:</i> In FY2011 OCO: N/A</p>		0.338	0.270	0.270	0.000	0.270
<p>MAJOR THRUST: WDA provides a net-centric infrastructure that assimilates worldwide sources of terrestrial and space weather data and produces decision-quality information for warfighters.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Continues incremental software development and integration of enhanced analysis capabilities including processing of data from a new generation of environmental sensing satellites.</p>		8.546	8.128	9.207	0.000	9.207

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305111F: <i>WEATHER SERVICE</i>	PROJECT 672738: <i>Weather Service</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: PT/WA provides timely, local and regional target-scale weather information to operational commanders for a given Area of Responsibility, and at tactical levels, provides front-line w...</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Continues software development and integration of regional and tactical weather systems and integration with warfighter C4I systems.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continues software development and integration of regional and tactical weather systems and integration with warfighter C4I systems.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continues software development and integration of regional and tactical weather systems and integration with warfighter C4I systems.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>					
Accomplishments/Planned Programs Subtotals	45.918	33.291	32.373	0.000	32.373

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0305111F: <i>Weather Service, (OPAF)</i>	74.853	39.049	37.743	0.000	37.743	37.160	35.253	35.044	35.013	0.000	0.000
	140.917	141.158	137.638	0.000	137.638	126.179	135.213	137.455	139.924	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305111F: <i>WEATHER SERVICE</i>	PROJECT 672738: <i>Weather Service</i>
--	---	--

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0305111F (1): <i>Weather Service, (O&M)</i>											

D. Acquisition Strategy

AFWWS employs an incremental development strategy with a series of incremental Initial Operational Capabilities (IOCs) and software releases to enable rapid development and fielding of capabilities using full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305111F: <i>WEATHER SERVICE</i>	PROJECT 672738: <i>Weather Service</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Northrop Grumman	C/CPAF	Northrop Grumman Bellevue, NE	22.706	4.802	Jan 2010	5.835	Jan 2011	0.000		5.835	Continuing	Continuing	Continuing
Raytheon Technical Services	C/CPFF	Raytheon Long Beach, CA	5.542	7.354	Mar 2010	6.467	May 2011	0.000		6.467	Continuing	Continuing	Continuing
Raytheon Information & Intelligence Systems	C/CPAF	Raytheon Bellevue, NE	44.473	7.429	Feb 2010	5.671	Oct 2010	0.000		5.671	Continuing	Continuing	Continuing
National Center for Atmospheric Research	MIPR	NCAR Boulder, CO	19.214	4.408	Feb 2010	5.381	Jan 2011	0.000		5.381	Continuing	Continuing	Continuing
National Aeronautics & Space Administration	MIPR	NASA Greenbelt, MD	3.722	1.700	Feb 2010	1.050	Jan 2011	0.000		1.050	Continuing	Continuing	Continuing
Various	Various/ Various	Various Various	3.704	2.885	Oct 2009	2.494	Oct 2010	0.000		2.494	Continuing	Continuing	Continuing
Subtotal			99.361	28.578		26.898		0.000		26.898			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Electronic Systems Center	TBD/TBD	ESC	6.162	4.683	Oct 2009	5.445	Oct 2010	0.000		5.445	Continuing	Continuing	Continuing

UNCLASSIFIED

R-1 Line Item #189

Page 8 of 11

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305111F: <i>WEATHER SERVICE</i>				PROJECT 672738: <i>Weather Service</i>					

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		Hanscom AFB, MA											
Space & Missile Systems Center	TBD/TBD	SMC Los Angeles AFB, CA	0.020	0.030	Oct 2009	0.030	Oct 2010	0.000		0.030	Continuing	Continuing	Continuing
Air Force Weather Agency	TBD/TBD	AFWA Offutt AFB, NE	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			6.182	4.713		5.475		0.000		5.475			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	105.543	33.291	32.373	0.000	32.373			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

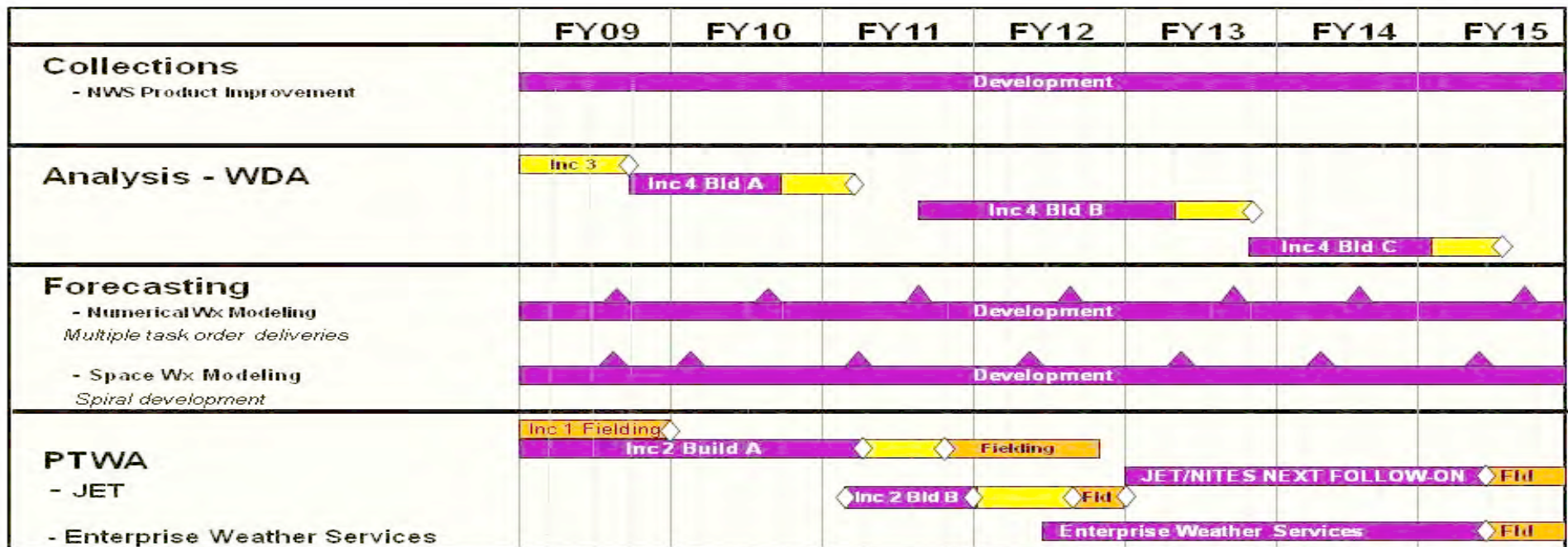
APPROPRIATION/BUDGET ACTIVITY
 3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0305111F: *WEATHER SERVICE*

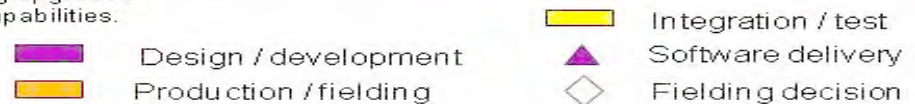
PROJECT
 672738: *Weather Service*

PE 0305111F Weather Service

As of Feb 10



Note: AF Weather Weapon System, aligned with NWS product improvements, Forecasting, and Space Weather Modeling are operational and being upgraded through incremental development activities improving operational capabilities.



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305111F: <i>WEATHER SERVICE</i>	PROJECT 672738: <i>Weather Service</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
WDC NWS Product Improvement Effort (Note 1)	1	2009	4	2011
WDA Increment 3 Delivery	3	2009	3	2009
WDA Increment 4 Build A Delivery	1	2011	1	2011
Forecasting Tasks	1	2009	4	2011
PT/WA - JET Increment 1 Fielding Complete	4	2009	4	2009
PT/WA - JET Increment 2 Build A Fielding Begins	4	2011	4	2011
JET Increment 2 Build B	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305114F: <i>Air Traffic Control/Approach/Landing System (ATCALs)</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	8.796	11.313	33.268	0.000	33.268	57.727	7.525	2.690	2.734	Continuing	Continuing
673587: <i>Air Traffic Control Systems</i>	8.796	11.313	33.268	0.000	33.268	57.727	7.525	2.690	2.734	Continuing	Continuing

A. Mission Description and Budget Item Justification

To support the Air Force worldwide flying mission, this program element funds research, development and management of new air traffic control surveillance, positioning, and precision approach landing systems. When applicable, this includes joint efforts with the Federal Aviation Administration (FAA) and coordination with the International Civil Aviation Organization (ICAO) and the North Atlantic Treaty Organization (NATO). FY11 funding focuses on three main efforts as follows:

Deployable Instrument Landing System (D-ILS). This effort develops a deployable version of the fixed base ILS which is the standard precision approach and landing system for conducting Air Force contingency operations and humanitarian or domestic disaster restoral operations in adverse weather conditions. The current Air Force mobile precision approach radar system (PAR) used to support operations at deployed locations are highly limited and have a decreasing operational availability. Only about 16% of the mobile PAR systems, which were procured in the 1970s and are manpower intensive and logistically unsupportable, are operational. Development and deployment of D-ILS will support increased operations in the AOR, allow phase out of the currently obsolete legacy systems and will provide interoperability with the Civil Reserve Air Fleet (CRAF). FY11 funds continue development and deployment of the D-ILS. Related OPAF funds are in PE 0305114F.

Deployable Radar Approach Control (D-RAPCON). D-RAPCON will replace the 40 year old AN/MPN-14K and AN/TPN-19 Airport Surveillance Radar (ASR) and Operations Shelter (OPS) subsystems with state of the art digital systems. Modification and overhaul of the existing systems have proven to be ineffective due to diminishing manufacturing sources over the 40 years for some of the components and subsystems. The D-RAPCON will be used to provide both a terminal and enroute surveillance capability. The D-RAPCON may also be used with a precision approach landing system and control tower to provide a complete ATC capability. The D-RAPCON will support tactical military operations and also provide a capability to support domestic disaster relief. The new digital technology will also provide the capability to transmit and display surveillance radar data to/from other sensors and command and control nodes. The primary surveillance radar coverage (non-cooperative targets) is out to 60 nautical miles (nm) and the secondary surveillance radar coverage (cooperative targets) is out to 120 nm. FY11 funds will support the award of an engineering and manufacturing development contract for the D-RAPCON. Related OPAF funds are in PE 0305114F.

Next Generation Air Transportation System (NextGen): This is an interagency effort designed to enable the transition from a ground infrastructure dominated Air Traffic Management capability for the U.S. National Airspace System (NAS) to a capability that leverages advances in Performance Based Navigation (PBN), non-radar based surveillance services, transition from voice communications to digital data exchange, as well as advances in weather forecast delivery systems.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
3600: <i>Research, Development, Test & Evaluation, Air Force</i>	PE 0305114F: <i>Air Traffic Control/Approach/Landing System (ATCALs)</i>
BA 7: <i>Operational Systems Development</i>	

NextGen will be built on key elements from existing programs and technologies and on new systems under development. FY11 efforts will focus on preparations leading to the implementation of new surveillance technologies including Automatic Dependent Surveillance - Broadcast (ADS-B) and multilateration systems utilizing transponder technologies. Both will improve the display of aircraft position to air traffic managers and will enhance flight safety. Early efforts will focus on analysis and demonstration of technologies to enable the seamless integration of Remotely Piloted Aircraft (RPA) into the NAS and the airspaces of other nations. Design studies and engineering analysis will be initiated to ensure ground system upgrades are coordinated and fielded concurrently with aircraft avionics capabilities that are acquired and integrated into Air Force aircraft and RPA; these efforts will run in close parallel with the Communication, Navigation and Surveillance/Air Traffic Management (CNS/ATM) program.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	10.796	9.006	0.000	0.000	0.000
Current President's Budget	8.796	11.313	33.268	0.000	33.268
Total Adjustments	-2.000	2.307	33.268	0.000	33.268
• Congressional General Reductions		-0.093			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		2.400			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-2.000	0.000	33.268	0.000	33.268

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 673587: *Air Traffic Control Systems*

Congressional Add: *Continues development and testing of the Tactical Transponder Landing System (TTLS).*

Congressional Add Subtotals for Project: 673587

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	4.000	2.400
	4.000	2.400
	4.000	2.400

Change Summary Explanation

FY11 funds programmed for NextGen system development. Congressional add of \$2.400M for Tactical Transponder Landing System (TTLS)

UNCLASSIFIED

R-1 Line Item #190

Page 2 of 12

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305114F: *Air Traffic Control/Approach/Landing System (ATCALs)*

FY11 D-RAPCON and D-ILS fully funded based on updated cost estimates and revised schedules

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305114F: <i>Air Traffic Control/Approach/ Landing System (ATCALs)</i>				PROJECT 673587: <i>Air Traffic Control Systems</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
673587: <i>Air Traffic Control Systems</i>	8.796	11.313	33.268	0.000	33.268	57.727	7.525	2.690	2.734	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

To support the Air Force worldwide flying mission, this program element funds research, development and management of new air traffic control surveillance, positioning, and precision approach landing systems. When applicable, this includes joint efforts with the Federal Aviation Administration (FAA) and coordination with the International Civil Aviation Organization (ICAO) and the North Atlantic Treaty Organization (NATO). FY11 funding focuses on three main efforts as follows:

Deployable Instrument Landing System (D-ILS). This effort develops a deployable version of the fixed base ILS which is the standard precision approach and landing system for conducting Air Force contingency operations and humanitarian or domestic disaster restoral operations in adverse weather conditions. The current Air Force mobile precision approach radar system (PAR) used to support operations at deployed locations are highly limited and have a decreasing operational availability. Only about 16% of the mobile PAR systems, which were procured in the 1970s and are manpower intensive and logistically unsupportable, are operational. Development and deployment of D-ILS will support increased operations in the AOR, allow phase out of the currently obsolete legacy systems and will provide interoperability with the Civil Reserve Air Fleet (CRAF). FY11 funds continue development and deployment of the D-ILS. Related OPAF funds are in PE 0305114F.

Deployable Radar Approach Control (D-RAPCON). D-RAPCON will replace the 40 year old AN/MPN-14K and AN/TPN-19 Airport Surveillance Radar (ASR) and Operations Shelter (OPS) subsystems with state of the art digital systems. Modification and overhaul of the existing systems have proven to be ineffective due to diminishing manufacturing sources over the 40 years for some of the components and subsystems. The D-RAPCON will be used to provide both a terminal and enroute surveillance capability. The D-RAPCON may also be used with a precision approach landing system and control tower to provide a complete ATC capability. The D-RAPCON will support tactical military operations and also provide a capability to support domestic disaster relief. The new digital technology will also provide the capability to transmit and display surveillance radar data to/from other sensors and command and control nodes. The primary surveillance radar coverage (non-cooperative targets) is out to 60 nautical miles (nm) and the secondary surveillance radar coverage (cooperative targets) is out to 120 nm. FY11 funds will support the award of an engineering and manufacturing development contract for the D-RAPCON. Related OPAF funds are in PE 0305114F.

Next Generation Air Transportation System (NextGen): This is an interagency effort designed to enable the transition from a ground infrastructure dominated Air Traffic Management capability for the U.S. National Airspace System (NAS) to a capability that leverages advances in Performance Based Navigation (PBN), non-radar based surveillance services, transition from voice communications to digital data exchange, as well as advances in weather forecast delivery systems.

UNCLASSIFIED

R-1 Line Item #190

Page 4 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0305114F: <i>Air Traffic Control/Approach/ Landing System (ATCALs)</i>		PROJECT 673587: <i>Air Traffic Control Systems</i>				
<p>NextGen will be built on key elements from existing programs and technologies and on new systems under development. FY11 efforts will focus on preparations leading to the implementation of new surveillance technologies including Automatic Dependent Surveillance - Broadcast (ADS-B) and multilateration systems utilizing transponder technologies. Both will improve the display of aircraft position to air traffic managers and will enhance flight safety. Early efforts will focus on analysis and demonstration of technologies to enable the seamless integration of Remotely Piloted Aircraft (RPA) into the NAS and the airspaces of other nations. Design studies and engineering analysis will be initiated to ensure ground system upgrades are coordinated and fielded concurrently with aircraft avionics capabilities that are acquired and integrated into Air Force aircraft and RPA; these efforts will run in close parallel with the Communication, Navigation and Surveillance/Air Traffic Management (CNS/ATM) program.</p>								
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: Continues efforts to implement NextGen efficiencies and capabilities. Current efforts focus on integrating Remotely Piloted Aircraft (RPAs) in to the NAS and multilateration technol...</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: N/A</p> <p><i>FY 2010 Plans:</i> In FY 2010: Begin analysis of Ground Based Sense and Avoid (GBSAA) technology to support seamless integration of RPAs into civil airspace and conduct multilateration system demonstrations to evaluate system set-up times, logistics/airlift footprint, aircraft surveillance coverage area, and supportability.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: NextGen: Continue GBSAA analysis and complete multilateration demonstration.</p> <p><i>FY 2011 OCO Plans:</i> IN FY 2011 OCO: N/A</p>				0.000	2.180	4.874	0.000	4.874
<p>MAJOR THRUST: Preparation of acquisition documentation and conduct of associated contract award tasks leading to FY11 contract award for new Deployable Radar Approach Control (D-RAPCON).</p>				0.354	3.002	16.053	0.000	16.053

UNCLASSIFIED

R-1 Line Item #190

Page 5 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0305114F: <i>Air Traffic Control/Approach/ Landing System (ATCALs)</i>		PROJECT 673587: <i>Air Traffic Control Systems</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> In FY 2011: N/A <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A								
Accomplishments/Planned Programs Subtotals				4.796	8.913	33.268	0.000	33.268
				FY 2009	FY 2010			
Congressional Add: Continues development and testing of the Tactical Transponder Landing System (TTLS). <i>FY 2009 Accomplishments:</i> In FY 2009: Conducted concept and technology assessment of current TTLS capabilities and how it could be used under military conditions. Effort focused on increasing system capacity to include guidance for up to four aircraft in terminal area at the same time. The current system is limited to two aircraft. <i>FY 2010 Plans:</i> In FY 2010: Continue FY09 effort.				4.000	2.400			
Congressional Adds Subtotals				4.000	2.400			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305114F: <i>Air Traffic Control/Approach/ Landing System (ATCALs)</i>	PROJECT 673587: <i>Air Traffic Control Systems</i>
--	---	--

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0305114F: <i>Air Traffic Control and Landing Systems (OPAF)</i>	9.620	22.521	6.543	3.900	10.443	35.421	83.190	96.287	82.473	0.000	0.000

D. Acquisition Strategy

Award multiple, competitive contract vehicles emphasizing off-the-shelf technology and maximizing the use of non-developmental items (NDIs).

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305114F: <i>Air Traffic Control/Approach/ Landing System (ATCALs)</i>	PROJECT 673587: <i>Air Traffic Control Systems</i>
--	---	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	0.000	0.000	0.000			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

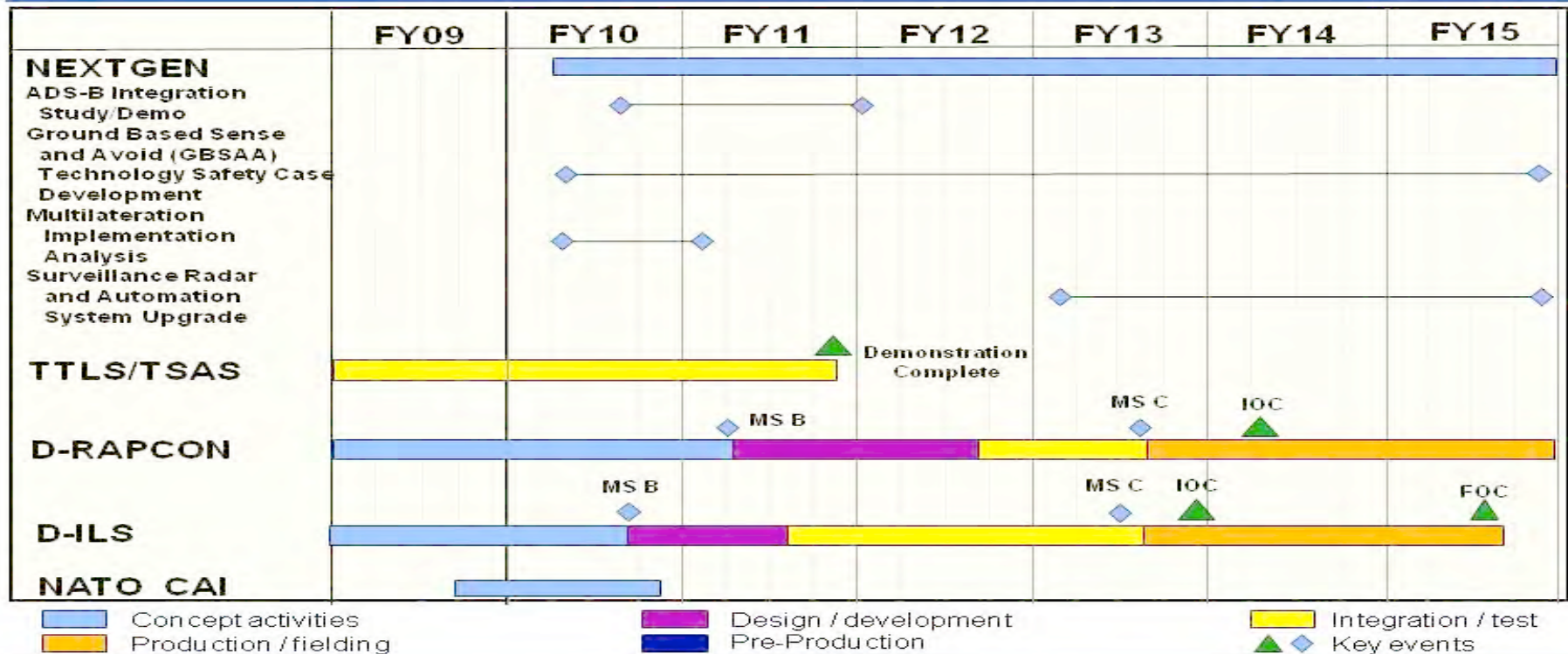
PE 0305114F: Air Traffic Control/Approach/
Landing System (ATCALs)

PROJECT

673587: Air Traffic Control Systems



Air Traffic Control and Landing Systems (ATCALs)



Depicted by installation/production flow

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305114F: <i>Air Traffic Control/Approach/ Landing System (ATCALs)</i>	PROJECT 673587: <i>Air Traffic Control Systems</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Next Generation Air Transportation System (NextGen)	3	2010	4	2011
ADS-B Integration Study/Demo	3	2010	4	2011
Ground Based Sense and Avoid Technology	2	2010	4	2011
Multilateration Implementation Analysis	2	2010	1	2011
TTLS/TSAS	1	2009	4	2011
D-RAPCON	1	2009	4	2011
D-ILS	1	2009	4	2011
NATO CAI	3	2009	4	2010

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305116F: <i>AERIAL TARGETS</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	10.970	54.807	63.573	0.000	63.573	39.581	30.525	25.094	35.092	Continuing	Continuing
675136: <i>Target Systems Development</i>	10.970	4.018	3.472	0.000	3.472	3.976	4.271	5.369	5.443	Continuing	Continuing
675366: <i>QF-16</i>	0.000	50.789	60.101	0.000	60.101	35.605	26.254	19.725	29.649	Continuing	Continuing

A. Mission Description and Budget Item Justification

Full-scale and subscale targets assure warfighters weapon systems will perform effectively against real-world enemy fighters and cruise missiles. Aerial targets support adherence to public law Title 10, Section 2366, which requires major systems and munitions programs to conduct survivability and lethality testing before full-rate production. The Aerial Targets program provides drones to satisfy "Live Fire/Lethality" developmental/operational test requirements. Target drones are used to validate operational missile/weapon system effectiveness and fighter operational flight program (OFP) updates. Target drones are also essential for developmental/operational testing for all air-to-air and ground-to-air missiles, and for the F-22A, F-35, F-16, F-15, etc., aircraft. This program element funds development, improvements, and updates of full-scale/subscale aerial targets and target control systems to ensure aerial targets represent enemy threat airborne systems. Specialized target payload subsystems are developed for requirements to include but not limited to missile scoring, electronic attack and infrared (IR) countermeasures, radar and IR signature augmentation, and chaff and flare dispensing systems.

This program is in budget activity 7 - RDT&E Operational System Development because it provides aerial targets, target payloads, and target control systems in support of operational and developmental testing.

Note: In FY10, QF-16 was separated from the Target Systems Development BPAC (675136) in RDT&E funding only.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305116F: <i>AERIAL TARGETS</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	34.683	54.807	0.000	0.000	0.000
Current President's Budget	10.970	54.807	63.573	0.000	63.573
Total Adjustments	-23.713	0.000	63.573	0.000	63.573
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-23.713	0.000	63.573	0.000	63.573

Change Summary Explanation

FY2009 changes include congressional rescission in the FY10 Congressional marks and reprogrammings for higher Air Force priorities. The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0305116F: <i>AERIAL TARGETS</i>				PROJECT 675136: <i>Target Systems Development</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675136: <i>Target Systems Development</i>	10.970	4.018	3.472	0.000	3.472	3.976	4.271	5.369	5.443	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Full-scale and subscale targets assure warfighters weapon systems will perform effectively against real-world enemy fighters and cruise missiles. The BQM-167A Air Force Subscale Aerial Target (AFSAT) is a jet powered drone aircraft measuring approximately 20 feet long with a mission to simulate threat aircraft for testing and evaluation of surface-to-air, ship-to-air, or air-to-air missiles. The target accomplishes this mission through the use of optional payloads including chaff and flare, electronic attack, and infrared devices.

The 691 ARSS, in consultation with the system operators and maintainers, has implemented a continuing system improvement process. Funding will continue improvement of launch phase performance and overall reliability improvement efforts. In addition, efforts are on-going to determine ways to improve the efficiency of BQM-167A maintenance processes. Results of on-going system improvement efforts are evaluated to determine which improvements will be incorporated into the BQM-167A. Also funds development, improvements, and updates of target control systems and specialized target payload subsystems for requirements to include but not limited to missile scoring, electronic attack and infrared (IR) countermeasures, radar and IR signature augmentation, and chaff and flare dispensing systems.

Note: Note: In FY10, QF-16 was separated from the Target Systems Development BPAC (675136) in RDT&E funding only.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: QF-16 Development <i>FY 2009 Accomplishments:</i> In FY 2009: F-16 aircraft withdrawal and refurbishment, engine maintenance and refurbishment, acquisition of support equipment, programmatic efforts in support of QF-16 development program. QF-16 funding moved to new BPAC 675336 starting in FY2010.	9.565	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0305116F: <i>AERIAL TARGETS</i>		PROJECT 675136: <i>Target Systems Development</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Not Applicable.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Not Applicable.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>								
<p>MAJOR THRUST: Continue improvement of performance, reliability, and maintenance for BQM-167A.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Product improvements for the Air Force Subscale Aerial Target (AFSAT) program include payload and propulsion improvements, and other objective requirements/enhancements; continue system acquisition and engineering support which includes studies, upgrades for the target control system, the weapon scoring system, payload systems and other aerial targets support systems and basic operating support.</p> <p><i>FY 2010 Plans:</i> In FY 2010: AFSAT product enhancements to include Alternate Launch Study, and other objective enhancements. Spares and production will be focus of contractor in FY10.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continue AFSAT product enhancements to include Radar Cross Section (RCS) augmentation, Alternate Launch Study, and other objective enhancements.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>				1.405	4.018	3.472	0.000	3.472
Accomplishments/Planned Programs Subtotals				10.970	4.018	3.472	0.000	3.472

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305116F: <i>AERIAL TARGETS</i>	PROJECT 675136: <i>Target Systems Development</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (16285): <i>PE0305116F, Aerial Targets APAF, 3010 Total</i>	80.135	90.870	101.599	0.000	101.599	80.745	181.152	204.910	282.011	0.000	0.000
• PE Not Provided (16297): <i>PE0305116F, Aircraft Procurement</i>	70.364	74.473	85.505	0.000	85.505	65.687	165.940	189.533	266.442	0.000	0.000
• PE Not Provided (16309): <i>PE0305116F, Initial Spares</i>	0.544	0.521	0.523	0.000	0.523	0.532	0.539	0.549	0.559	0.000	0.000
• PE Not Provided (16321): <i>PE0305116F, Munitions</i>	0.095	5.713	5.311	0.000	5.311	4.207	4.277	4.350	4.432	0.000	0.000
• PE Not Provided (16333): <i>PE0305116F, Electronic Attack Pods</i>	9.132	10.163	10.260	0.000	10.260	10.319	10.396	10.478	10.578	0.000	0.000

D. Acquisition Strategy

The AFSAT acquisition strategy is sole source follow-on to a competitive award, with fixed price and time and materials contracts.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305116F: <i>AERIAL TARGETS</i>				PROJECT 675136: <i>Target Systems Development</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AFSAT P3I Efforts	SS/FFP	Composite Engineering Inc Sacramento CA	0.646	4.018	Jan 2010	3.472	Jan 2011	0.000		3.472	0.000	8.136	0.000
QF-16 Risk Reduction activities	MIPR	691 ARSS Eglin AFB, FL, AMARG: Tucson, AZ, 162d ANG, Tu...	9.565	0.000		0.000		0.000		0.000	0.000	9.565	0.000
Subtotal			10.211	4.018		3.472		0.000		3.472	0.000	17.701	0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mission Support	Various/ Various	691 ARSS Eglin AFB, FL	0.759	0.000		0.000		0.000		0.000	0.000	0.759	0.000
Subtotal			0.759	0.000		0.000		0.000		0.000	0.000	0.759	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305116F: <i>AERIAL TARGETS</i>	PROJECT 675136: <i>Target Systems Development</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	10.970	4.018	3.472	0.000	3.472	0.000	18.460	0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

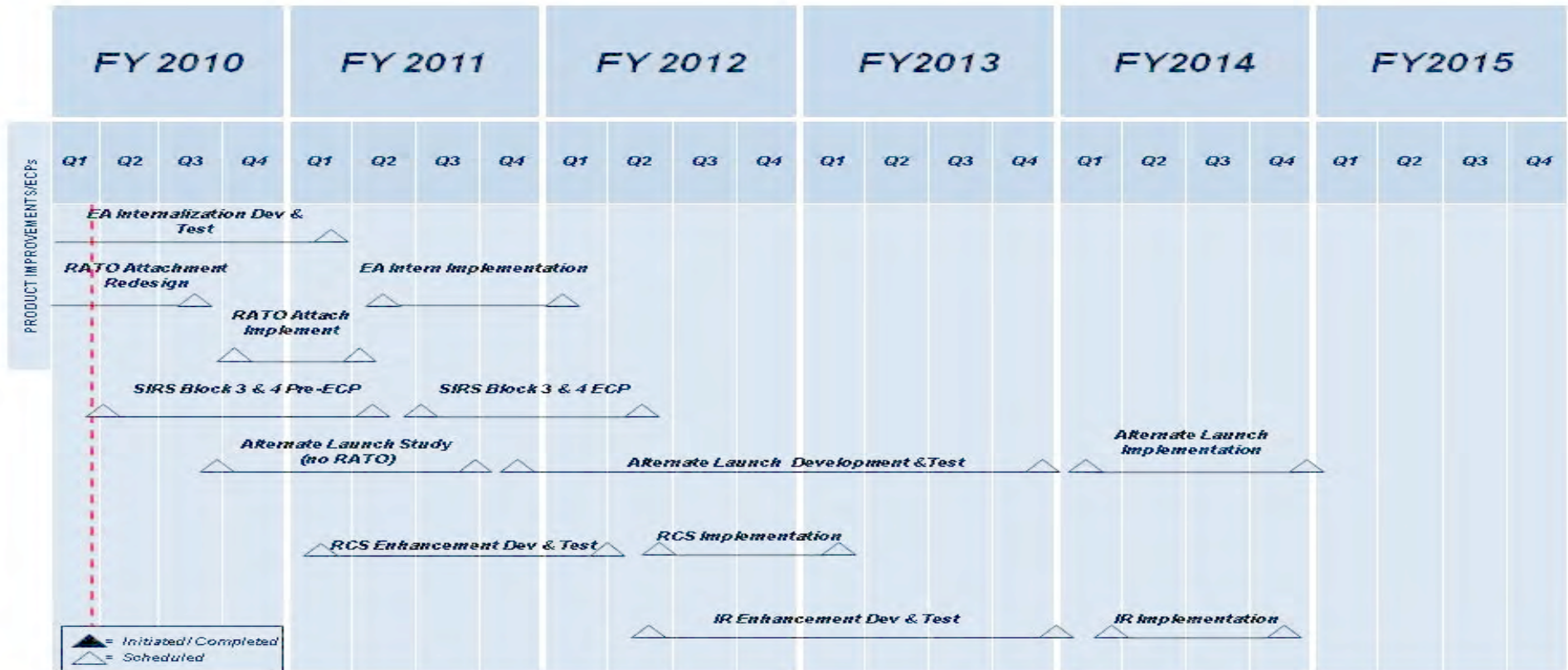
R-1 ITEM NOMENCLATURE

PE 0305116F: AERIAL TARGETS

PROJECT

675136: Target Systems Development

AFSAT Schedule



UNCLASSIFIED

R-1 Line Item #191

Page 8 of 16

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305116F: *AERIAL TARGETS*

PROJECT

675136: *Target Systems Development*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Product Improvements	2	2009	4	2011
RCS Enhancement, contractor NAWC/ATSO	1	2011	4	2011
Alternate Launch, contractor CEi	4	2010	4	2011

UNCLASSIFIED

R-1 Line Item #191

Page 9 of 16

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305116F: <i>AERIAL TARGETS</i>	PROJECT 675366: <i>QF-16</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675366: <i>QF-16</i>	0.000	50.789	60.101	0.000	60.101	35.605	26.254	19.725	29.649	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Note: In FY10, QF-16 was separated from the Target Systems Development BPAC (675136) in RDT&E funding only.

A. Mission Description and Budget Item Justification

Full-scale targets assure warfighters weapon systems perform effectively against real-world enemy fighters and cruise missiles. Aerial targets support adherence to Public Law Title 10, Section 2366, which requires major systems and munitions programs to conduct survivability and lethality testing before full-rate production. The Aerial Targets program provides drones to satisfy "Live Fire/Lethality" developmental/operational test requirements. Target drones are used to validate operational missile/weapon system effectiveness and fighter operational flight program (OFP) updates. Target drones are also essential for developmental/operational testing for all air-to-air and ground-to-air missiles, and for the F-22A, F-35, F-16, F-15, etc., aircraft. The United States Air Force's (USAF) Air Superiority Modernization/Mission Area Plan has identified aerial targets as a capability shortfall. The QF-16 program will fulfill this requirement. Funding supports continued development of the follow-on full scale aerial target (QF-16), development, improvements, and updates of target control systems and specialized target payload subsystems for requirements such as: missile scoring, electronic attack and infrared (IR) countermeasures, radar and IR signature augmentation, and chaff and flare dispensing systems.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: QF-16 Development Program <i>FY 2009 Accomplishments:</i> In FY 2009: Not Applicable.	0.000	33.903	43.026	0.000	43.026

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305116F: <i>AERIAL TARGETS</i>	PROJECT 675366: <i>QF-16</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Accomplishments/Planned Programs Subtotals	0.000	50.789	60.101	0.000	60.101

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (16555): <i>PE0305116F, Aerial Targets APAF, 3010 Total</i>	80.135	90.870	101.599	0.000	101.599	80.745	181.152	204.910	282.011	0.000	0.000
• PE Not Provided (16567): <i>PE0305116F, Aircraft Procurement</i>	70.364	74.473	85.505	0.000	85.505	65.687	165.940	189.533	266.442	0.000	0.000
• PE Not Provided (16579): <i>PE0305116F, Initial Spares</i>	0.544	0.521	0.523	0.000	0.523	0.532	0.539	0.549	0.559	0.000	0.000
• PE Not Provided (16591): <i>PE0305116F, Munitions</i>	0.095	5.713	5.311	0.000	5.311	4.207	4.277	4.350	4.432	0.000	0.000
• PE Not Provided (16603): <i>PE0305116F, Electronic Attack Pods</i>	9.132	10.163	10.260	0.000	10.260	10.319	10.396	10.478	10.578	0.000	0.000

D. Acquisition Strategy

The QF-16 acquisition strategy is competitive with planned fixed price incentive firm, time and materials and fixed price production contracts.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0305116F: <i>AERIAL TARGETS</i>					PROJECT 675366: <i>QF-16</i>				

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development of Drone Peculiar Equipment	C/TBD	TBD TBD	0.000	33.903	Mar 2010	43.026		0.000		43.026	0.000	76.929	0.000
Airframe/Engine GFE	MIPR	691 ARSS Eglin AFB, FL, AMARG: Tucson, AZ, 162d ANG: Tu...	0.000	10.814		11.500		0.000		11.500	0.000	22.314	0.000
Subtotal			0.000	44.717		54.526		0.000		54.526	0.000	99.243	0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
QF-16 Program Support	MIPR	691 ARSS Eglin AFB, FL, AMARG: Tucson, AZ, 162d ANG: Tu...	0.000	6.072		5.575		0.000		5.575	0.000	11.647	0.000
Subtotal			0.000	6.072		5.575		0.000		5.575	0.000	11.647	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305116F: <i>AERIAL TARGETS</i>	PROJECT 675366: <i>QF-16</i>
--	--	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	50.789	60.101	0.000	60.101	0.000	110.890	0.000

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

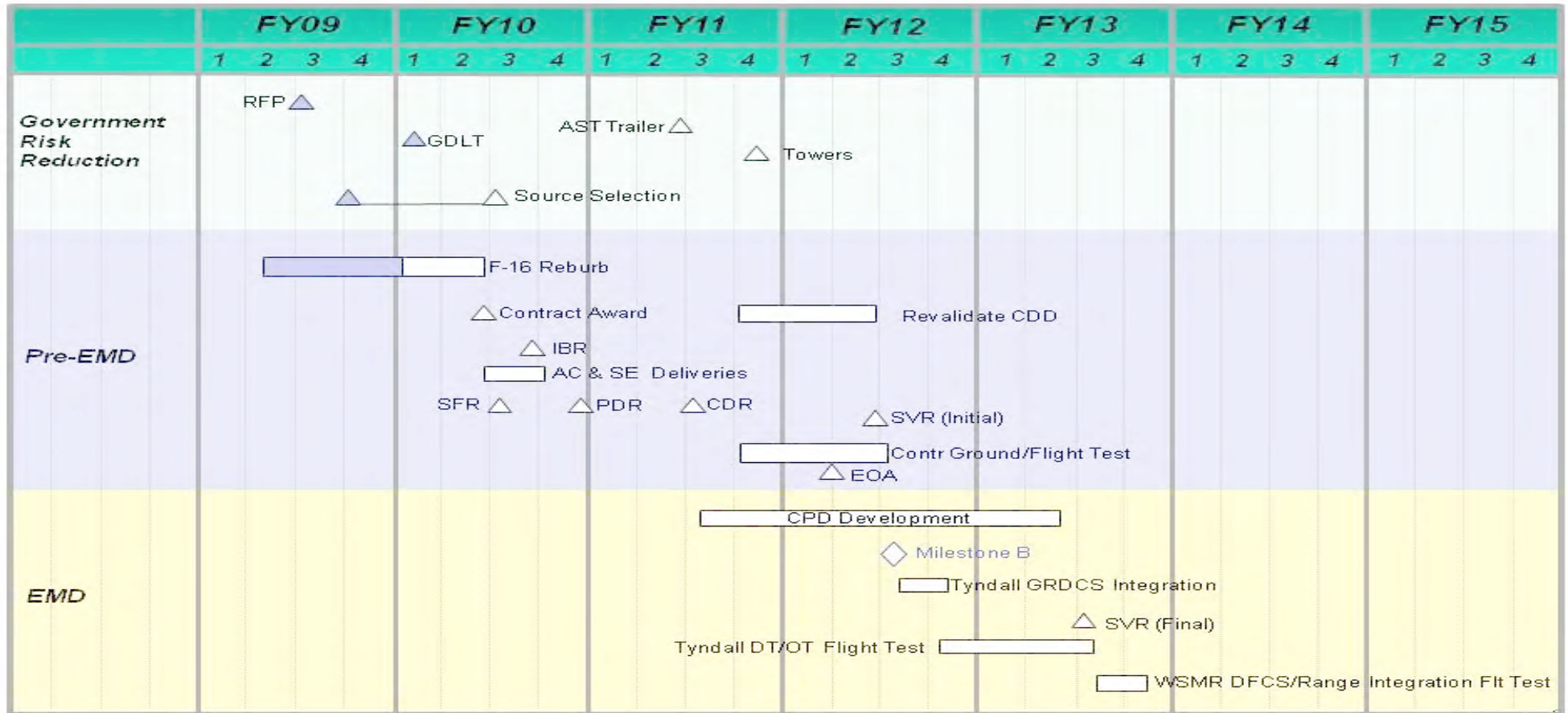
R-1 ITEM NOMENCLATURE

PE 0305116F: *AERIAL TARGETS*

PROJECT

675366: *QF-16*

QF-16 Program Schedule



As of 28 Sep 09

UNCLASSIFIED

R-1 Line Item #191

Page 15 of 16

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305116F: *AERIAL TARGETS*

PROJECT

675366: *QF-16*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
QF-16 Development Contract Award	2	2010	2	2010

UNCLASSIFIED

R-1 Line Item #191

Page 16 of 16

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305128F: <i>Security And Investigative Activities</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	1.962	0.742	0.469	0.000	0.469	0.464	0.471	0.479	0.486	Continuing	Continuing
671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>	1.962	0.742	0.469	0.000	0.469	0.464	0.471	0.479	0.486	Continuing	Continuing

A. Mission Description and Budget Item Justification

Air Force Office of Special Investigations (AFOSI) conducts specialized investigative activities and force protection support for Air Force (AF) commanders worldwide. This assists AF commanders in protecting their people and resources. AFOSI's mission includes investigating criminal matters affecting AF personnel, contract fraud and economic crimes involving AF weapons systems and spare parts, the investigation of environmental crime, counterdrugs, computer intrusion detection and forensic media analysis of computer crimes. This element supports Technical Surveillance Countermeasures (TSCM), Computer Crime Investigations (CCI), and technical support to criminal and counterintelligence investigations and operations conducted by AFOSI. AFOSI's TSCM mission conducts counterintelligence investigations for both AF and DoD facilities and programs in order to deter and detect technical surveillance operations conducted by Foreign Intelligence Services to compromise classified or sensitive information. The purpose of CCI research is to improve AF and DoD Information Operations capability by enhancing AFOSI's ability to deter or prevent spies, hackers, or saboteurs from manipulating, damaging, or stealing sensitive war fighting data or systems. Failing that, to investigate, identify, and prosecute those who do. While most research to meet operational requirements is Operational System Development, there is also research in the category of Engineering and Manufacturing Development due to a need for modifications to present technology.

The equipment required to provide technical support to investigations is unique and complex. This equipment must be continually updated to provide state-of-the-art capabilities to detect and neutralize criminal activities targeted against the AF and DoD. In an era of advancing technology, reduced manning, and increasingly high level fraud, environmental crime and computer crime investigations, technical investigative equipment must be continuously updated to enable AFOSI special agents to have the most cost effective and best possible means of thwarting criminal acts. The evolution of a new wave of computer crimes has made AFOSI responsible for the collection, investigative analysis, national level law enforcement coordination, and dissemination of hacker activity and intrusion incidents for the Air Force. AFOSI's computer crime equipment must stay on the leading edge of technology to collect criminal information as well as pursue and apprehend criminals through a global medium. AFOSI must continually update its existing high tech computer surveillance equipment to support ongoing and future investigative operations to identify hackers and hacker groups, as well as potential hostile government activities targeting Air Force communication and control systems.

Critical Infrastructure Protection identifies weaknesses in the Air Force Critical infrastructure, highlights critical countermeasures and acquires and deploys cost-effective solutions. The intent is to provide an Air Force-wide review of current infrastructure vulnerabilities; prioritize AF protection planning and integrate with existing programs; identify gaps based on AF needs; direct studies to refine AF requirements.

UNCLASSIFIED

R-1 Line Item #194

Page 1 of 9

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305128F: <i>Security And Investigative Activities</i>
--	---

This program is in Budget Activity 7, Operational System Development, because its products are primarily for use in investigative activity of an operational nature.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.784	0.755	0.000	0.000	0.000
Current President's Budget	1.962	0.742	0.469	0.000	0.469
Total Adjustments	1.178	-0.013	0.469	0.000	0.469
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	1.178	-0.013	0.469	0.000	0.469

Change Summary Explanation

FY11: The FY2010 President's Budget submittal did not reflect FY2011 through FY2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305128F: <i>Security And Investigative Activities</i>				PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>	1.962	0.742	0.469	0.000	0.469	0.464	0.471	0.479	0.486	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Air Force Office of Special Investigations (AFOSI) conducts specialized investigative activities and force protection support for Air Force (AF) commanders worldwide. This assists AF commanders in protecting their people and resources. AFOSI's mission includes investigating criminal matters affecting AF personnel, contract fraud and economic crimes involving AF weapons systems and spare parts, the investigation of environmental crime, counterdrugs, computer intrusion detection and forensic media analysis of computer crimes. This element supports Technical Surveillance Countermeasures (TSCM), Computer Crime Investigations (CCI), and technical support to criminal and counterintelligence investigations and operations conducted by AFOSI. AFOSI's TSCM mission conducts counterintelligence investigations for both AF and DoD facilities and programs in order to deter and detect technical surveillance operations conducted by Foreign Intelligence Services to compromise classified or sensitive information. The purpose of CCI research is to improve AF and DoD Information Operations capability by enhancing AFOSI's ability to deter or prevent spies, hackers, or saboteurs from manipulating, damaging, or stealing sensitive war fighting data or systems. Failing that, to investigate, identify, and prosecute those who do. While most research to meet operational requirements is Operational System Development, there is also research in the category of Engineering and Manufacturing Development due to a need for modifications to present technology.

The equipment required to provide technical support to investigations is unique and complex. This equipment must be continually updated to provide state-of-the-art capabilities to detect and neutralize criminal activities targeted against the AF and DoD. In an era of advancing technology, reduced manning, and increasingly high level fraud, environmental crime and computer crime investigations, technical investigative equipment must be continuously updated to enable AFOSI special agents to have the most cost effective and best possible means of thwarting criminal acts. The evolution of a new wave of computer crimes has made AFOSI responsible for the collection, investigative analysis, national level law enforcement coordination, and dissemination of hacker activity and intrusion incidents for the Air Force. AFOSI's computer crime equipment must stay on the leading edge of technology to collect criminal information as well as pursue and apprehend criminals through a global medium. AFOSI must continually update its existing high tech computer surveillance equipment to support ongoing and future investigative operations to identify hackers and hacker groups, as well as potential hostile government activities targeting Air Force communication and control systems.

Critical Infrastructure Protection identifies weaknesses in the Air Force Critical infrastructure, highlights critical countermeasures and acquires and deploys cost-effective solutions. The intent is to provide an Air Force-wide review of current infrastructure vulnerabilities; prioritize AF protection planning and integrate with existing programs; identify gaps based on AF needs; direct studies to refine AF requirements.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305128F: <i>Security And Investigative Activities</i>	PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>
--	---	---

This program is in Budget Activity 7, Operational System Development, because its products are primarily for use in investigative activity of an operational nature.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Next Generation Technical Surveillance Countermeasures (TSCM) receiver <i>FY 2009 Accomplishments:</i> In FY09: N/A <i>FY 2010 Plans:</i> In FY10: N/A <i>FY 2011 Base Plans:</i> In FY11: N/A <i>FY 2011 OCO Plans:</i> In FY11 OCO: N/A	1.448	0.270	0.269	0.000	0.269
MAJOR THRUST: Continue development of Computer Crimes Investigative (CCI) Equipment & Software <i>FY 2009 Accomplishments:</i> In FY09: N/A <i>FY 2010 Plans:</i> In FY10: N/A <i>FY 2011 Base Plans:</i> In FY11: N/A	0.273	0.250	0.200	0.000	0.200

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305128F: <i>Security And Investigative Activities</i>	PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> In FY11 OCO: N/A					
MAJOR THRUST: Next Generation TSCM receiver continuing development <i>FY 2009 Accomplishments:</i> In FY09: N/A <i>FY 2010 Plans:</i> In FY10: N/A <i>FY 2011 Base Plans:</i> In FY11: N/A <i>FY 2011 OCO Plans:</i> In FY11 OCO: N/A	0.241	0.222	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	1.962	0.742	0.469	0.000	0.469

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (16904): <i>Other Procurement/Technical Surveillance Countermeasures Equipment 3080/WSC 846030</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.250	0.265	0.270	0.000	0.270	0.285	0.287	0.280	0.280	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305128F: <i>Security And Investigative Activities</i>	PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>
--	---	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (16916): <i>Other Procurement/Heavily Armored Vehicle 3080/WSC 821700</i>											

D. Acquisition Strategy

Market Research is accomplished jointly within the DoD, Counterintelligence, and Law Enforcement communities with the various government laboratories and major defense contractors to identify locations with the ability to develop investigative tools unique to our mission needs, these technologies, capabilities, and limitations of current and future investigative tools is sometimes highly sensitive or classified.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305128F: <i>Security And Investigative Activities</i>	PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Sandia Natl Lab	MIPR	TBD TBD	0.386	0.400	Mar 2010	0.108	Mar 2011	0.000		0.108	Continuing	Continuing	Continuing
AFWIC	MIPR	TBD TBD	1.378	0.220	Mar 2010	0.218	Mar 2011	0.000		0.218	Continuing	Continuing	Continuing
Other Agency	MIPR	TBD TBD	0.198	0.122	Apr 2010	0.143	Mar 2011	0.000		0.143	Continuing	Continuing	Continuing
Subtotal			1.962	0.742		0.469		0.000		0.469			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.962	0.742		0.469		0.000		0.469			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305128F: *Security And Investigative Activities*

PROJECT

671931: *TECH SURVEIL COUNTER MEAS EQPT*

Fiscal Year	FY08				FY09				FY10				FY12				FY13				FY14				FY15			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
CCI Software Items	[]				[]				[]				[]				[]				[]				[]			
TSCM Receiver	[]				[]				[]				[]				[]				[]				[]			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305128F: <i>Security And Investigative Activities</i>	PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
TSCM Receiver	2	2009	4	2010
CCI Software/Equipment	2	2009	4	2010

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305146F: <i>Defense Joint Counter Intelligence Program</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.039	0.039	0.040	0.000	0.040	0.041	0.042	0.043	0.043	Continuing	Continuing
671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>	0.039	0.039	0.040	0.000	0.040	0.041	0.042	0.043	0.043	0.000	0.000

A. Mission Description and Budget Item Justification

This effort encompasses protection of defense critical technology and infrastructure, personnel, and operations from foreign intelligence services, terrorists and other covert and clandestine threats. There are five sub-projects; CI Support to Force Protection, CI Support to Combatant Commands and Defense Agencies, Research Critical Technology Protection, CI Information Infrastructure Protection and CI Technical Services.

This project is in Budget Activity 07, Operational System Development, because it supports research and development activities for fielded weapon systems.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.039	0.040	0.000	0.000	0.000
Current President's Budget	0.039	0.039	0.040	0.000	0.040
Total Adjustments	0.000	-0.001	0.040	0.000	0.040
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	-0.001	0.040	0.000	0.040

Change Summary Explanation

Funding for the Air Force CounterIntelligence (CI) mission.

UNCLASSIFIED

R-1 Line Item #196

Page 1 of 6

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0305146F: <i>Defense Joint Counter Intelligence Program</i>				PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>					
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost	
671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>	0.039	0.039	0.040	0.000	0.040	0.041	0.042	0.043	0.043	0.000	0.000	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0			
A. Mission Description and Budget Item Justification												
This effort encompasses protection of defense critical technology and infrastructure, personnel, and operations from foreign intelligence services, terrorists and other covert and clandestine threats. There are five sub-projects; CI Support to Force Protection, CI Support to Combatant Commands and Defense Agencies, Research Critical Technology Protection, CI Information Infrastructure Protection and CI Technical Services.												
B. Accomplishments/Planned Program (\$ in Millions)												
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total		
MAJOR THRUST: Funds manpower authorizations, support equipment, necessary facilities and associated costs. <i>FY 2009 Accomplishments:</i> In FY09: Continuation of above <i>FY 2010 Plans:</i> In FY10: Continuation of above <i>FY 2011 Base Plans:</i> In FY11: Continuation of above <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.						0.039	0.039	0.040	0.000	0.040		
Accomplishments/Planned Programs Subtotals						0.039	0.039	0.040	0.000	0.040		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305146F: <i>Defense Joint Counter Intelligence Program</i>	PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (17120): <i>PE35128F, Security/Investigative Activities</i>	0.793	0.804	0.809	0.000	0.809	0.823	0.841	0.830	0.830	0.000	0.000

D. Acquisition Strategy

Accomplished jointly within the DoD, Counterintelligence, and Law Enforcement communities with the various government laboratories, and major defense contractors to identify locations with the ability to develop investigative tools unique to our mission needs.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305146F: <i>Defense Joint Counter Intelligence Program</i>	PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Technical Services	Various	Various Various	0.039	0.039	Mar 2010	0.040	Mar 2011	0.000		0.040	Continuing	Continuing	Continuing
Subtotal			0.039	0.039		0.040		0.000		0.040			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	0.039	0.039		0.040	0.000	0.040		

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

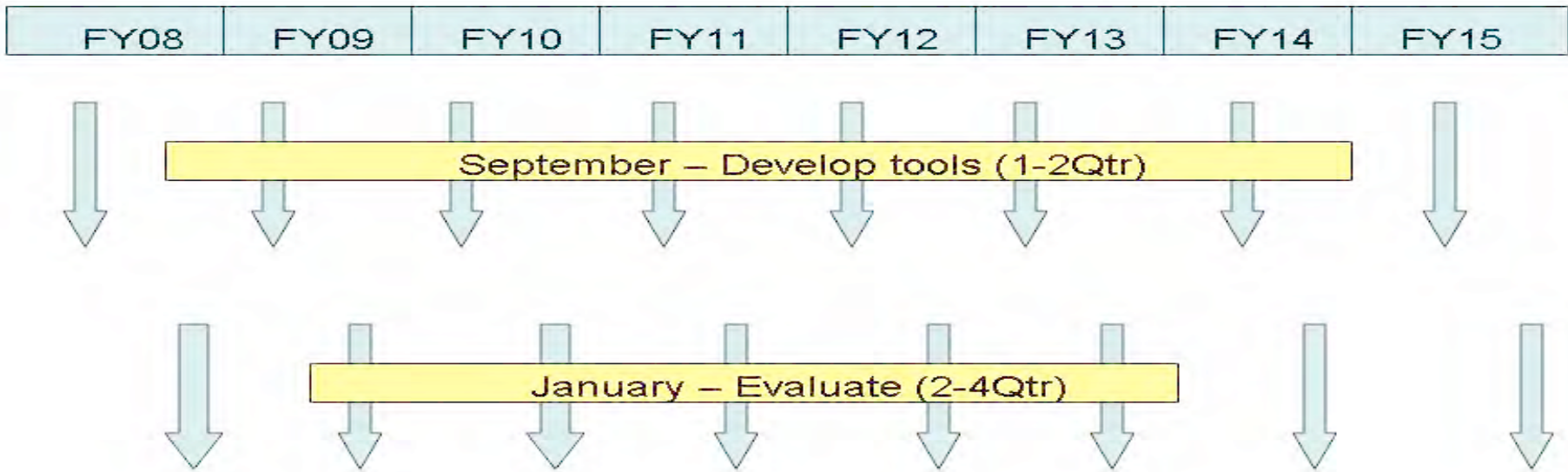
R-1 ITEM NOMENCLATURE

PE 0305146F: Defense Joint Counter Intelligence Program

PROJECT

671931: TECH SURVEIL COUNTER MEAS EQPT

Defense Joint Counterintelligence Program



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305146F: <i>Defense Joint Counter Intelligence Program</i>	PROJECT 671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>
--	--	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Develop tools	1	2009	2	2011
Test and Evaluate	2	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305164F: <i>NAVSTAR Global Positioning System User Equipment Space</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	121.798	137.163	165.936	0.000	165.936	137.950	120.084	128.755	130.730	Continuing	Continuing
673028: <i>Navstar GPS</i>	121.798	137.163	165.936	0.000	165.936	137.950	120.084	128.755	130.730	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Global Positioning System (GPS) is a space-based radio Positioning, Navigation, and Time (PNT) distribution system. GPS User Equipment (UE) consists of standardized receivers, antennas, antenna electronics, etc., grouped together in sets to derive navigation and time information transmitted from GPS satellites. These receiver sets are used by DoD. RDT&E funds UE development, test, and analysis for new PNT receiver capabilities in Navigation Warfare (Navwar) across all military platforms using GPS services. Additionally, it funds the integration with service nominated Military GPS User Equipment (MGUE) lead platforms, development of software upgrades, product improvement studies, GPS UE test and evaluation and mission support.

Due to increasing military dependence on GPS and emerging Electronic Warfare (EW) threat, the Navwar program was established to address EW solutions for GPS. Key elements of Navwar include protecting U.S. military and allies' use of GPS, preventing hostile exploitation of GPS, and preserving civil use of GPS outside the area of operations (AO). Military GPS User Equipment (MGUE) will continue the proof of concept work accomplished by the Modernized User Equipment (MUE) effort which laid the foundation for the next generation of air and ground GPS UE that will receive Y-code, Military (M)-code, and Coarse Acquisition code (YMCA).

This program element is in Budget Activity 7 - Operational System Development, because UE supports operational systems.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305164F: <i>NAVSTAR Global Positioning System User Equipment Space</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	126.712	137.692	0.000	0.000	0.000
Current President's Budget	121.798	137.163	165.936	0.000	165.936
Total Adjustments	-4.914	-0.529	165.936	0.000	165.936
• Congressional General Reductions		-0.529			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-4.914	0.000	165.936	0.000	165.936

Change Summary Explanation

-\$4.914M in FY09 reprogrammed for higher DoD priorities. -\$0.529M in FY10 for FFRDC. The FY2010 President's Budget submittal did not reflect FY2011 through FY2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305164F: <i>NAVSTAR Global Positioning System User Equipment Space</i>	PROJECT 673028: <i>Navstar GPS</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
673028: <i>Navstar GPS</i>	121.798	137.163	165.936	0.000	165.936	137.950	120.084	128.755	130.730	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Global Positioning System (GPS) is a space-based radio Positioning, Navigation, and Time (PNT) distribution system. GPS User Equipment (UE) consists of standardized receivers, antennas, antenna electronics, etc., grouped together in sets to derive navigation and time information transmitted from GPS satellites. These receiver sets are used by DoD. RDT&E funds UE development, test, and analysis for new PNT receiver capabilities in Navigation Warfare (Navwar) across all military platforms using GPS services. Additionally, it funds the integration with service nominated Military GPS User Equipment (MGUE) lead platforms, development of software upgrades, product improvement studies, GPS UE test and evaluation and mission support.

Due to increasing military dependence on GPS and emerging Electronic Warfare (EW) threat, the Navwar program was established to address EW solutions for GPS. Key elements of Navwar include protecting U.S. military and allies' use of GPS, preventing hostile exploitation of GPS, and preserving civil use of GPS outside the area of operations (AO). Military GPS User Equipment (MGUE) will continue the proof of concept work accomplished by the Modernized User Equipment (MUE) effort which laid the foundation for the next generation of air and ground GPS UE that will receive Y-code, Military (M)-code, and Coarse Acquisition code (YMCA).

This program element is in Budget Activity 7 - Operational System Development, because UE supports operational systems.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Development and testing, studies and engineering to assist User Equipment integration, software upgrades, product improvement studies, commercial GPS UE test and evaluation and missio...	121.798	137.163	165.936	0.000	165.936
<i>FY 2009 Accomplishments:</i> In FY 2009: Military User Equipment (MUE) proof of concept efforts to provide technical foundation for next generation air, ground, space based and handheld GPS UE that will receive Y-code, Military (M)-code, and Coarse Acquisition code (YMCA).					

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305164F: <i>NAVSTAR Global Positioning System User Equipment Space</i>	PROJECT 673028: <i>Navstar GPS</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Military User Equipment (MUE) proof of concept efforts to provide technical foundation for next generation air, ground, and handheld GPS UE that will receive Y-code, Military (M)-code, and Coarse Acquisition code (YMCA). Source selection for next generation Military GPS User Equipment (MGUE).</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Military GPS User Equipment (MGUE) contract award for efforts for development of a Common GPS Module (CGM) to provide core signal processing functions within a secure module, and receiver cards for each domain (ground, air, maritime and handheld).</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	121.798	137.163	165.936	0.000	165.936

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (17291):	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<i>Related Activities:</i>											
• PE 0305164F: <i>GPS User Equipment (O&M)</i>	3.194	4.830	1.387	0.000	1.387	0.945	0.839	0.938	1.098	0.000	0.000
• PE 0305164F (1): <i>GPS User Equipment (APAF)</i>	9.568	19.122	8.198	0.000	8.198	10.222	9.551	9.916	10.304	0.000	0.000
	5.707	5.705	5.180	0.000	5.180	2.046	2.035	2.065	2.097	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305164F: <i>NAVSTAR Global Positioning System User Equipment Space</i>	PROJECT 673028: <i>Navstar GPS</i>
--	--	--

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0305164F (2): <i>GPS User Equipment (OPAF)</i>											

D. Acquisition Strategy

The GPS Wing acquisition strategy is to continue the development of GPS user equipment (UE) to support current warfighter activities and execute concept definition and technology risk reduction programs that will define and mature technologies needed for GPS Modernization. The GPS UE program will continue Selective Availability Anti-Spoofing Module (SAASM) receiver development /production and work with platforms/users to identify requirements and upgrade paths for GPS enhancements. Additionally, several anti-jam technology risk reduction efforts will be pursued to mature technologies and prepare for technology insertion to combat the potential threat that U.S. forces may be denied the use of GPS signals.

The Modernized User Equipment (MUE) program awarded three contracts to produce demonstration YMCA capable receiver cards, and constitutes the technology development phase of the Military GPS User Equipment (MGUE) program. MUE is scheduled to deliver cards in FY10 with testing and certification to follow to demonstrate Technology Readiness Level (TRL) 6. The MGUE effort will include development of a Common GPS Module (CGM), that provides the core GPS signal processing functions within a secure module, and receiver cards for each domain (ground, air, maritime, and handheld). MGUE will meet the ASD/NII GPS user equipment policy memo and draft Capability Development Document (CDD) requirement.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305164F: <i>NAVSTAR Global Positioning System User Equipment Space</i>	PROJECT 673028: <i>Navstar GPS</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Receiver Technology	Various/ Various	Various Various	20.062	7.000	Nov 2009	6.500	Nov 2010	0.000		6.500	Continuing	Continuing	0.000
Advanced Antenna Technology	Various	Various Various	86.692	6.640	Nov 2009	5.609	Nov 2010	0.000		5.609	Continuing	Continuing	0.000
DOE Sandia (SAASM)	MIPR	Sandia National Labs Kirtland AFB, NM	52.440	0.600	Nov 2009	0.700	Nov 2010	0.000		0.700	Continuing	Continuing	0.000
Various (SAASM/GB-GRAM)	Various/ Various	Various Various	32.594	0.300	Nov 2009	0.400	Nov 2010	0.000		0.400	Continuing	Continuing	0.000
Various (Modernized UE)	Various/ Various	Various Various	428.984	79.472	Nov 2009	103.993	Nov 2010	0.000		103.993	Continuing	Continuing	0.000
Holloman AFB (Integration)	PO	46th Test Group Holloman AFB, NM	7.184	0.700	Nov 2009	0.800	Nov 2010	0.000		0.800	Continuing	Continuing	0.000
Completed UE Product Development Efforts	Various/ Various	Various Various	197.840	0.000		0.000		0.000		0.000	0.000	197.840	0.000
Subtotal			825.796	94.712		118.002		0.000		118.002			0.000

Remarks

UNCLASSIFIED

R-1 Line Item #198

Page 6 of 10

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305164F: <i>NAVSTAR Global Positioning System User Equipment Space</i>	PROJECT 673028: <i>Navstar GPS</i>
--	--	--

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Wing Support	Various/ Various	Various Various	71.224	33.188	Nov 2009	38.416	Nov 2010	0.000		38.416	Continuing	Continuing	0.000
SE/Program Spt/Joint Navwar Center (JNWC)	Various/ Various	Various Various	116.461	7.746	Nov 2009	7.978	Nov 2010	0.000		7.978	Continuing	Continuing	0.000
Completed Support Efforts	Various/ Various	Various Various	62.490	0.000		0.000		0.000		0.000	0.000	62.490	0.000
Subtotal			250.175	40.934		46.394		0.000		46.394			0.000

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
User Equipment Development & Production Testing	PO	46th Test Group Holloman AFB, NM	59.343	1.517	Nov 2009	1.540	Nov 2010	0.000		1.540	Continuing	Continuing	0.000
Subtotal			59.343	1.517		1.540		0.000		1.540			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305164F: <i>NAVSTAR Global Positioning System User Equipment Space</i>	PROJECT 673028: <i>Navstar GPS</i>
--	--	--

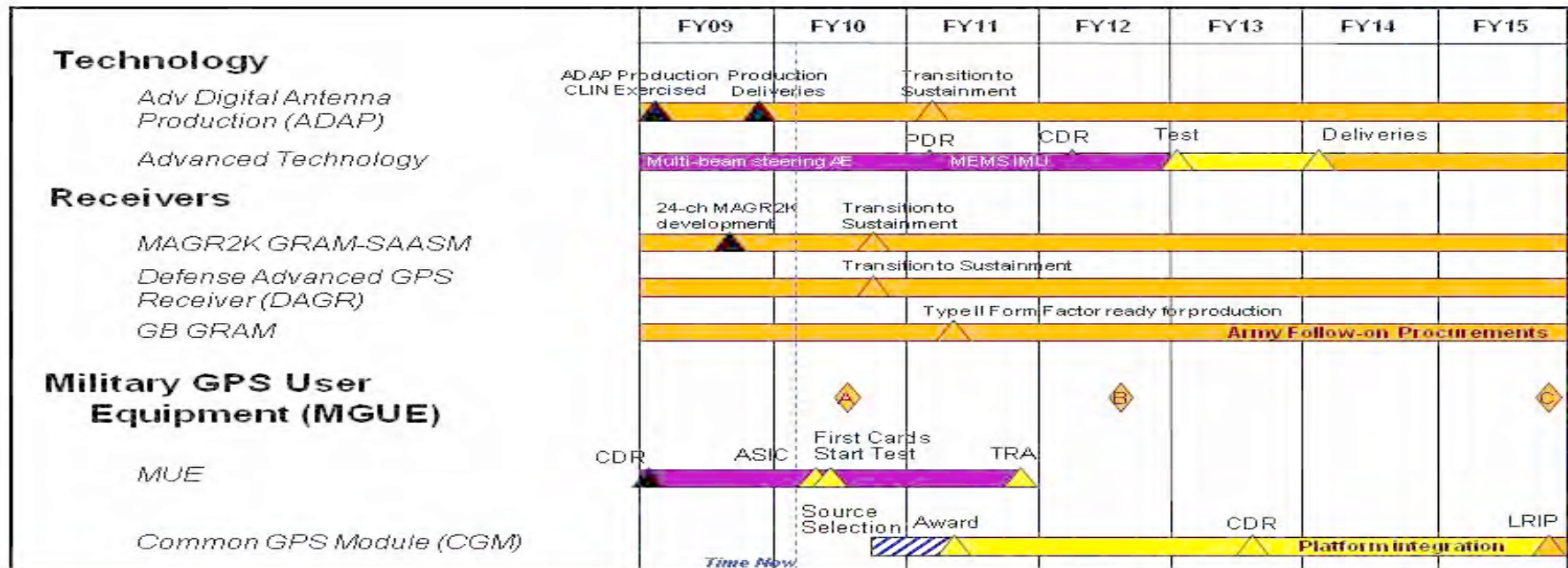
	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,135.314	137.163	165.936	0.000	165.936			0.000

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305164F: <i>NAVSTAR Global Positioning System User Equipment Space</i>	PROJECT 673028: <i>Navstar GPS</i>



AE – Antenna Electronics
 ASIC – Application Specific Integrated Circuit
 CDR – Critical Design Review
 GB – Ground Based
 GRAM – GPS Receiver Applications Module

LRIP – Low Rate Initial Production
 MAGR2K – Miniaturized Airborne GPS 2000
 MEMS IMU – Micro-Electronic Mechanical Inertial Measurement Unit
 SAASM – Selective Availability Anti-Spoofing Module
 TRA – Technical Readiness Assessment

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305164F: <i>NAVSTAR Global Positioning System User Equipment Space</i>	PROJECT 673028: <i>Navstar GPS</i>
--	--	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Advanced Digital Antenna Production (ADAP) Contract Award	1	2009	1	2009
Military User Equipment (MUE) Critical Design Review (CDR)	1	2009	1	2009
ADAP Deliveries Begin	4	2009	4	2009
Begin Military GPS User Equipment (MGUE) Technical Development Cards Delivery	2	2010	2	2010
MGUE Milestone A	3	2010	3	2010
MGUE Contract Award	2	2011	2	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
3600: <i>Research, Development, Test & Evaluation, Air Force</i>			PE 0305165F: <i>NAVSTAR GPS (Space)</i>								
BA 7: <i>Operational Systems Development</i>											
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	86.648	51.197	34.471	0.000	34.471	17.953	15.016	0.000	0.000	Continuing	Continuing
673030: <i>NAVSTAR GPS (Space & Control)</i>	86.648	51.197	34.471	0.000	34.471	17.953	15.016	0.000	0.000	0.000	2,033.521

A. Mission Description and Budget Item Justification

This Program Element (PE) funds Research and Development (R&D) for the Navstar Global Positioning System (GPS) Space and Control segments for GPS Block II satellites. It includes, but not limited to: training simulators, Integrated Logistics Support (ILS) products, ground control segment development, procurement, and operation, sustaining engineering, space and ground segments upgrades, and R&D efforts to support GPS Block II system deployment including efforts to provide anti-jam capability through increased Military(M)-Code signal power.

The Operational Control Segment (OCS) will deliver control segment capabilities to support Block IIF satellites as well as the existing constellation of Block IIA/IIR/IIR-M satellites.

This program is in Budget Activity 7 - Operational Systems Development because it supports operational systems.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	90.711	52.039	0.000	0.000	0.000
Current President's Budget	86.648	51.197	34.471	0.000	34.471
Total Adjustments	-4.063	-0.842	34.471	0.000	34.471
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	-2.063	0.000			
• SBIR/STTR Transfer	-2.000	0.000			
• Other Adjustments	0.000	-0.842	34.471	0.000	34.471

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305165F: *NAVSTAR GPS (Space)*

Change Summary Explanation

-\$2.063M in FY09 reprogrammed for higher DoD priorities. -\$0.842M in FY10 for FFRDC. The FY2010 President's Budget submittal did not reflect FY2011 through FY2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305165F: <i>NAVSTAR GPS (Space)</i>	PROJECT 673030: <i>NAVSTAR GPS (Space & Control)</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
673030: <i>NAVSTAR GPS (Space & Control)</i>	86.648	51.197	34.471	0.000	34.471	17.953	15.016	0.000	0.000	0.000	2,033.521
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This Program Element (PE) funds Research and Development (R&D) for the Navstar Global Positioning System (GPS) Space and Control segments for GPS Block II satellites. It includes, but not limited to: training simulators, Integrated Logistics Support (ILS) products, ground control segment development, procurement, and operation, sustaining engineering, space and ground segments upgrades, and R&D efforts to support GPS Block II system deployment including efforts to provide anti-jam capability through increased Military(M)-Code signal power.

The Operational Control Segment (OCS) will deliver control segment capabilities to support Block IIF satellites as well as the existing constellation of Block IIA/IIR/IIR-M satellites.

This program is in Budget Activity 7 - Operational Systems Development because it supports operational systems.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Development of GPS Block II Operational Control System (OCS). <i>FY 2009 Accomplishments:</i> In FY 2009: Develop and deliver control segment capabilities to support Block IIF satellites as well as the existing constellation of Block IIA/IIR/IIR-M satellites. <i>FY 2010 Plans:</i> In FY 2010: Develop and deliver Selective Availability Anti-Spoofing Module (SAASM) capability for Block IIR/IIR-M/IIF satellites.	86.648	51.197	34.471	0.000	34.471

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305165F: <i>NAVSTAR GPS (Space)</i>	PROJECT 673030: <i>NAVSTAR GPS (Space & Control)</i>

B. Accomplishments/Planned Program (\$ in Millions)	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> In FY 2011: Completion of Operational Control Segment development efforts; transition to sustainment operations.					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	86.648	51.197	34.471	0.000	34.471

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (17731):	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<i>Related Activities:</i>											
• PE 0305165F: <i>GPS Space & Control (O&M)</i>	73.278	78.008	79.753	0.000	79.753	78.761	79.859	81.576	84.293	0.000	0.000
• PE 0305165F (1): <i>GPS Space & Control (MPAF)</i>	127.862	52.983	64.609	0.000	64.609	69.220	63.785	83.327	10.914	0.000	0.000
• PE 0305165F (2): <i>GPS Space & Control (OPAF)</i>	14.166	7.569	7.736	0.000	7.736	7.776	7.905	0.395	0.401	0.000	0.000

D. Acquisition Strategy
 GPS OCS upgrade was competitively awarded to a single contractor (Lockheed Martin) in July 1995. Block IIF satellite and IIF ground systems development contract was competitively awarded to a single contractor (Boeing) in April 1996. The Single Prime Initiative (SPI) consolidated these efforts and was added to the Boeing IIF contract (with Lockheed Martin as a subcontractor) on 1 Oct 1999. GPS Modernization efforts for the Block IIR were awarded sole source to Lockheed Martin under a new contract in August 2000. Modernization efforts for Block IIF were added to the existing contract in 2002 with Boeing as Engineering Change Proposals (ECPs).

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305165F: <i>NAVSTAR GPS (Space)</i>	PROJECT 673030: <i>NAVSTAR GPS (Space & Control)</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305165F: <i>NAVSTAR GPS (Space)</i>				PROJECT 673030: <i>NAVSTAR GPS (Space & Control)</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OCS Development & IIF Modernization	C/Variou	Boeing Seal Beach, CA	1,414.322	37.677	Nov 2009	18.484	Nov 2010	0.000		18.484	Continuing	Continuing	1,944.179
IIF Development	C/Variou	Boeing Seal Beach, CA	76.272	0.000		0.000		0.000		0.000	0.000	76.272	77.600
Control Segment Support	MIPR	Various Various	24.042	5.766	Nov 2009	9.841	Nov 2010	0.000		9.841	Continuing	Continuing	Continuing
Completed GPS Development Efforts	Various/ Various	Various Various	165.983	0.000		0.000		0.000		0.000	0.000	165.983	0.000
Subtotal			1,680.619	43.443		28.325		0.000		28.325			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Engineering/ Support	FFRDC	Various Various	68.437	4.370	Nov 2009	3.720	Nov 2010	0.000		3.720	Continuing	Continuing	Continuing
Completed GPS Support Efforts	Various/ Various	Various Various	46.480	0.000		0.000		0.000		0.000	0.000	46.480	0.000
Subtotal			114.917	4.370		3.720		0.000		3.720			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305165F: <i>NAVSTAR GPS (Space)</i>	PROJECT 673030: <i>NAVSTAR GPS (Space & Control)</i>
--	---	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Completed GPS T&E Efforts	Various/ Various	Various Various	4.588	0.000		0.000		0.000		0.000	0.000	4.588	0.000
Subtotal			4.588	0.000		0.000		0.000		0.000	0.000	4.588	0.000

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Management Support	FFRDC	Aerospace El Segundo, CA	59.538	3.384	Nov 2009	2.426	Nov 2010	0.000		2.426	Continuing	Continuing	Continuing
Subtotal			59.538	3.384		2.426		0.000		2.426			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	1,859.662	51.197		34.471		0.000		34.471			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305165F: <i>NAVSTAR GPS (Space)</i>	PROJECT 673030: <i>NAVSTAR GPS (Space & Control)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Selective Availability Anti-Spoofing Module (SAASM) Complete	1	2009	1	2009
GPS IIF Development Complete	4	2009	4	2009
Launch, Anomaly & Disposal Operations (LADO) Release 2 Complete	1	2010	1	2010
SAASM Capability Complete	2	2010	2	2010
Certification for SAASM Multi-Service Operational Test & Evaluation	1	2011	1	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305173F: <i>Space & Missile Test & Evaluation Center</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	1.920	3.593	4.572	0.000	4.572	1.658	1.680	1.704	1.729	Continuing	Continuing
67A014: <i>R&D Space and Missile Operations</i>	1.920	3.593	4.572	0.000	4.572	1.658	1.680	1.704	1.729	Continuing	Continuing

A. Mission Description and Budget Item Justification

The RDT&E efforts within this program focus on the Multi-Mission Satellite Operations Center (MMSOC), which the Research and Development (R&D) Space and Missile Operations (RDSMO) program started in FY 2007. The main objective of MMSOC is to develop the capability to rapidly support R&D and operational systems and to transition R&D space vehicle technology with residual military utility to operational status for immediate war-fighter support. MMSOC is a multiple-mission operation system that uses standard software (1) to perform satellite command and control (C2) in support of launch requirements; (2) to develop and test tactics, techniques, procedures and concepts to conduct operations for R&D satellites; (3) to provide a satellite C2 incremental block evolution resource for RDT&E of new systems and concepts; and (4) to deliver operational flexibility for new and currently-flying assigned satellites. MMSOC leverages demonstrated RDT&E experience to expand the capabilities of proven technologies currently in use in Air Force Space Development and Test wing facilities. MMSOC also supports all RDSMO-sustained space vehicles through existing resources.

RDSMO develops and acquires systems to: operate experimental, demonstration, and operational satellites; operate fixed and deployable satellite ground systems; perform satellite compatibility testing; act as the focal point and center of expertise for DoD experimental and demonstration space and missile operations; support space and missile R&D; and conduct/support experimental/demonstration of space and missile Developmental Test and Evaluation (DT&E) and Initial Operational Test and Evaluation (IOT&E) activities. It consists of (1) the RDT&E Support Complex (RSC) at Kirtland AFB, NM and MMSOC equipment installed in 1 SOPS at Schriever AFB, CO which operate R&D satellites; (2) the Space Test Operations organization at Kirtland AFB which is the focal point for small satellite tests, plans, programs, and policy and (3) the deployable test systems, based at Kirtland AFB, NM which deploys mobile antennas worldwide to support space RDT&E activities.

The RDT&E effort also includes the development of a mobile test system, known as the Remote Tracking Station Block Change Transportable Space Test Resource (RBC TSTR), used to verify satellite compatibility with the Air Force Satellite Control Network (AFSCN) Remote Block Change architecture, currently being fielded worldwide. System will be capable of being deployed around the world to perform compatibility testing in the factory as well as launch ranges to include Kodiak, Alaska, Wallops Island, Virginia, and Kwajalein Atoll where there is no other existing or planned capability. This was a new start in FY 2010.

This effort is in Budget Activity 7, Operational System Development, and it supports research and development of space systems.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305173F: <i>Space & Missile Test & Evaluation Center</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	1.967	3.599	0.000	0.000	0.000
Current President's Budget	1.920	3.593	4.572	0.000	4.572
Total Adjustments	-0.047	-0.006	4.572	0.000	4.572
• Congressional General Reductions		-0.006			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.047	0.000	4.572	0.000	4.572

Change Summary Explanation

Note: The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305173F: <i>Space & Missile Test & Evaluation Center</i>				PROJECT 67A014: <i>R&D Space and Missile Operations</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
67A014: <i>R&D Space and Missile Operations</i>	1.920	3.593	4.572	0.000	4.572	1.658	1.680	1.704	1.729	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The RDT&E efforts within this program will focus on the Multi-Mission Satellite Operations Center (MMSOC), which Research and Development (R&D) Space and Missile Operations (RDSMO) program will start in FY 2007. The main objective of MMSOC is to transition R&D space vehicle technology with residual military utility to operational status for immediate real world support and to perform initial operational utility assessment for future acquisition programs. MMSOC will be a multiple-mission operation system that uses standard software to (1) perform satellite command and control (C2) in support of launch requirements; (2) conduct residual operations capability for R&D satellites in order to develop/test tactics, techniques, procedures and concepts; (3) provide a satellite C2 spiral evolution resource for RDT&E of new systems and concepts; and (4) deliver new operational flexibility for currently-flying assigned satellites. MMSOC will leverage demonstrated RDT&E experience to expand the capabilities and proven technologies currently in use by other RDSMO facilities. MMSOC will also support all RDSMO-sustained space vehicles through existing resources. In addition, it will add the capability to rapidly support operational counterspace systems (such as Near-field Infrared Experiment (NFIRE), Interim Satellite as a Sensor (ISAS), and Rapid Attack Identification Detection and Reporting System (RAIDRS)).

The RDSMO Program Element also contains O&M and OPAF funds. RDSMO develops and acquires systems to: operate experimental and demonstration satellites; operate fixed and deployable satellite ground systems; perform satellite compatibility testing; act as the focal point and center of expertise for DoD experimental and demonstration space and missile operations; support space and missile R&D; and conduct/support experimental/demonstration space and missile Developmental Test and Evaluation (DT&E) and Initial Operational Test and Evaluation (IOT&E) activities. It consists of (1) the RDT&E Support Complex (RSC) at Kirtland AFB, NM which operates R&D satellites; (2) the Center for Research Support (CERES) at Schriever AFB, CO which operates residual satellites and serves as a test bed; (3) the Camp Parks Communication Annex at Dublin, CA which provides multi-band Telemetry Tracking and Commanding (TT&C), calibration and on-orbit testing; (4) the Test, Operations, and Programs at Kirtland AFB which is the focal point for tests, plans, programs, and policy and (5) the deployable test systems, based at Kirtland AFB, NM which deploys mobile antennas worldwide to support space RDT&E activities.

This effort is in Budget Activity 7, Operational System Development, and it supports research and development of space systems.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

R-1 Line Item #201

Page 3 of 9

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305173F: <i>Space & Missile Test & Evaluation Center</i>	PROJECT 67A014: <i>R&D Space and Missile Operations</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> In FY2011: Complete testing and integration and deliver the RBC TSTR system					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	1.920	3.593	4.572	0.000	4.572

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (18134): <i>OPAF, Electronics & Telecom Equipment (BA 03, PE 0305173F, P-20)</i>	10.015	11.299	3.470	0.000	3.470	3.534	3.593	3.646	3.705	0.000	0.000

D. Acquisition Strategy

The AF uses the competitively-awarded Engineering, Development, and Sustainment (EDS) Contract, managed by Space and Missile System Center, Space Development & Test Wing, to modernize and sustain MMSOC. The AF uses the competitively-awarded AFSCN RBC contract to develop RBC TSTR.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305173F: <i>Space & Missile Test & Evaluation Center</i>	PROJECT 67A014: <i>R&D Space and Missile Operations</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering, Development, and Sustainment (EDS) Follow-on Contract	C/CPAF	Lockheed Martin Kirtland, Schreiver AFB	1.920	1.627	Nov 2009	1.646		0.000		1.646	Continuing	Continuing	Continuing
Subtotal			1.920	1.627		1.646		0.000		1.646			

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Test and Engineering (STEC) Contract	C/CPAF	Kirtland AFB	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305173F: <i>Space & Missile Test & Evaluation Center</i>				PROJECT 67A014: <i>R&D Space and Missile Operations</i>					

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
RBC TSTR Contract	TBD/TBD	Honeywell Colorado Springs, CO	0.000	1.966	Jan 2010	2.926		0.000		2.926	0.000	4.892	3.923
Subtotal			0.000	1.966		2.926		0.000		2.926	0.000	4.892	3.923

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.920	3.593	4.572	0.000	4.572			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

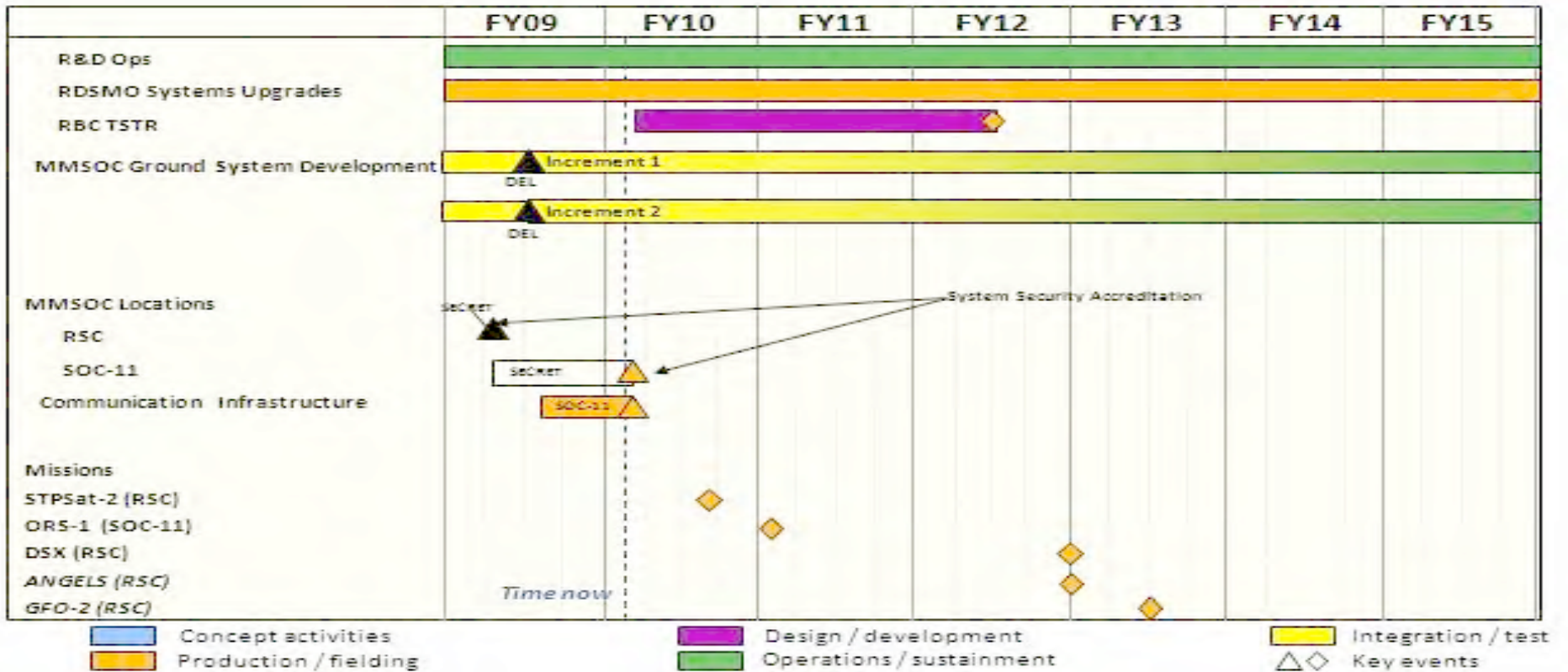
R-1 ITEM NOMENCLATURE

PE 0305173F: *Space & Missile Test & Evaluation Center*

PROJECT

67A014: *R&D Space and Missile Operations*

RDSMO Schedule



UNCLASSIFIED

R-1 Line Item #201

Page 8 of 9

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305173F: *Space & Missile Test & Evaluation Center*

PROJECT

67A014: *R&D Space and Missile Operations*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Increment 1-TT&C with Limited Mission Planning	3	2009	3	2009
Increment 2-Support 1 Mission	3	2009	3	2009
Remote Tracking Block Change Transportable Space Test Resource Contract Award	2	2010	2	2010

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305174F: <i>SPACE WARFARE CENTER</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	2.890	2.961	2.929	0.000	2.929	2.971	2.436	2.480	2.523	Continuing	Continuing
67A011: <i>Space Analysis and Application Development</i>	2.890	2.961	2.929	0.000	2.929	2.971	2.436	2.480	2.523	Continuing	Continuing

A. Mission Description and Budget Item Justification

Located at Schriever Air Force Base, Colorado, the Space Innovation and Development Center develops, evaluates, tests, and integrates space application and utility concepts, as well as new technologies, while providing combat effects to warfighters, such as aid in mission planning of Global Positioning System (GPS) aided/guided munitions. Its innovation, education, and training activities foster solutions to operational deficiencies and enhance the integration of space systems into Air Force operations, thereby enabling service and joint warfighters to realize the full potential of existing and planned space capabilities.

The Space Analysis and Application Development project develops and modifies modeling and simulation tools that Air Force Space Command's Space Analysis Center uses for operations research, military utility analyses, tradeoff studies, and other evaluations of space mission areas to guide planning, programming, requirements generation, analyses of alternatives, and other activities. Development activities incorporate changes in fielded and projected space operational capabilities, as well as technical improvements, into the group's software tools to ensure their data and technology remain current.

This effort is in Budget Activity 7, Operational System Development, because it develops and modifies software models for fielded analysis systems.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305174F: <i>SPACE WARFARE CENTER</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	2.974	3.009	0.000	0.000	0.000
Current President's Budget	2.890	2.961	2.929	0.000	2.929
Total Adjustments	-0.084	-0.048	2.929	0.000	2.929
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.084	-0.048	2.929	0.000	2.929

Change Summary Explanation

FY 2011: The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305174F: <i>SPACE WARFARE CENTER</i>	PROJECT 67A011: <i>Space Analysis and Application Development</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
67A011: <i>Space Analysis and Application Development</i>	2.890	2.961	2.929	0.000	2.929	2.971	2.436	2.480	2.523	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Located at Schriever Air Force Base, Colorado, the Space Innovation and Development Center develops, evaluates, tests, and integrates space application and utility concepts, as well as new technologies, while providing combat effects to warfighters, such as aid in mission planning of Global Positioning System (GPS) aided/guided munitions. Its innovation, education, and training activities foster solutions to operational deficiencies and enhance the integration of space systems into Air Force operations, thereby enabling service and joint warfighters to realize the full potential of existing and planned space capabilities.

The Space Analysis and Application Development project develops and modifies modeling and simulation tools that Air Force Space Command's Space Analysis Center uses for operations research, military utility analyses, tradeoff studies, and other evaluations of space mission areas to guide planning, programming, requirements generation, analyses of alternatives, and other activities. Development activities incorporate changes in fielded and projected space operational capabilities, as well as technical improvements, into the group's software tools to ensure their data and technology remain current.

This effort is in Budget Activity 7, Operational System Development, because it develops and modifies software models for fielded analysis systems.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Develops, verifies, and validates new models for space mission areas and modifies existing models to portray new capabilities. Models used by the Air Force Space Command's (AFSPC) S... <i>FY 2009 Accomplishments:</i> In FY 2009: Model modification.	1.370	1.374	1.353	0.000	1.353

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305174F: <i>SPACE WARFARE CENTER</i>	PROJECT 67A011: <i>Space Analysis and Application Development</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> In FY 2011: Validation of model change results.					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	2.890	2.961	2.929	0.000	2.929

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (18424): <i>Other Procurement, Air Force (Weapon System Code 832070, Intelligence Communications Equipment)*</i>	0.457	0.471	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE Not Provided (18436): <i>Other Procurement, Air Force (Weapon System Code 834010, Intelligence Communications Equipment)*</i>	0.000	0.000	0.478	0.000	0.478	0.491	0.500	0.509	0.519	0.000	0.000

D. Acquisition Strategy

Any new projects funded in this program will be awarded using competitive procedures to the maximum extent possible.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305174F: <i>SPACE WARFARE CENTER</i>	PROJECT 67A011: <i>Space Analysis and Application Development</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Develop/modify software tools and models	C/FP	Various Various	3.418	1.045	Jan 2010	1.035	Jan 2011	0.000		1.035	Continuing	Continuing	Continuing
Develop/modify software tools and models (1)	C/CPAF	Scitor Colorado Springs, CO	2.954	1.916	Oct 2009	1.894	Oct 2009	0.000		1.894	Continuing	Continuing	Continuing
Subtotal			6.372	2.961		2.929		0.000		2.929			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	6.372	2.961		2.929	0.000	2.929		

Remarks







Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305174F: <i>SPACE WARFARE CENTER</i>	PROJECT 67A011: <i>Space Analysis and Application Development</i>

	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Space Analysis Center <i>Modeling & simulation activities for space mission areas</i>	Modeling tool development, modification, verification, and validation						
	Operations using existing models						

- | | | |
|--|--|--|
|  Concept activities |  Design / development |  Integration / test |
|  Production / fielding |  Operations / sustainment |  Key events |

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305174F: *SPACE WARFARE CENTER*

PROJECT

67A011: *Space Analysis and Application Development*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Model modification, verification, and validation	1	2009	4	2011

UNCLASSIFIED

R-1 Line Item #202

Page 8 of 8

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305182F: <i>Spacelift Range System</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	13.322	9.915	9.933	0.000	9.933	10.061	10.224	10.366	10.524	Continuing	Continuing
674137: <i>Launch and Test Range System (LTRS) Modernization</i>	13.322	9.915	9.933	0.000	9.933	10.061	10.224	10.366	10.524	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Eastern Range (ER) at Patrick Air Force Base (AFB)/Cape Canaveral Air Force Station, FL, and the Western Range (WR) at Vandenberg AFB, CA, make up the Spacelift Range System (SLRS), also known as LTRS. They provide tracking, telemetry, communications, flight safety, and other capabilities to safely conduct national security, civil, and commercial spacelift operations; ballistic missile and missile defense evaluations; and aeronautical and guided weapons tests. Decreasing reliability of aging range systems forces the AF to use redundant assets during launches to ensure range availability, increasing operations and maintenance costs.

The AF is addressing range deficiencies in FY11 via multiple contracts. The Range Standardization and Automation (RSA) IIA contract (OPAF only in FY11) modernizes control/display and communications systems. The SLRS Contract (SLRSC) modernizes command, telemetry, and radar instrumentation; and provides systems engineering, architecture management, and system level testing. RSA IIA and SLRSC end in FY11. The AF awarded a follow-on systems engineering and integration contract in Dec 09 and will award a follow-on modernization and sustainment contract in FY11. Planned communications system upgrades will comply with OSD policies and standards for netcentricity, global information grid interface, information assurance, and test/training enabling architecture.

These upgrades to fielded systems are categorized as Budget Activity 7, Operational Systems Development.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305182F: <i>Spacelift Range System</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	12.322	9.957	0.000	0.000	0.000
Current President's Budget	13.322	9.915	9.933	0.000	9.933
Total Adjustments	1.000	-0.042	9.933	0.000	9.933
• Congressional General Reductions		-0.042			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	1.000	0.000	9.933	0.000	9.933

Change Summary Explanation

FY09: AF increase of \$1M for systems engineering.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305182F: <i>Spacelift Range System</i>	PROJECT 674137: <i>Launch and Test Range System (LTRS) Modernization</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674137: <i>Launch and Test Range System (LTRS) Modernization</i>	13.322	9.915	9.933	0.000	9.933	10.061	10.224	10.366	10.524	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Eastern Range (ER) at Patrick Air Force Base (AFB)/Cape Canaveral Air Force Station, FL, and the Western Range (WR) at Vandenberg AFB, CA, make up the Spacelift Range System (SLRS), also known as LTRS. They provide tracking, telemetry, communications, flight safety, and other capabilities to safely conduct: national security, civil, and commercial spacelift operations; ballistic missile and missile defense evaluations; and aeronautical and guided weapons tests. Decreasing reliability of aging range systems forces the AF to use redundant assets during launches to ensure range availability, increasing operations and maintenance costs.

The AF is addressing range deficiencies in FY11 via multiple contracts. The Range Standardization and Automation (RSA) IIA contract (OPAF only in FY11) modernizes control/display and communications systems. The SLRS Contract (SLRSC) modernizes command, telemetry, and radar instrumentation; and provides systems engineering, architecture management, and system level testing. RSA IIA and SLRSC end in FY11. The AF awarded a follow-on systems engineering and integration contract in Dec 09 and will award a follow-on modernization and sustainment contract in FY11. Planned communications system upgrades will comply with OSD policies and standards for netcentricity, global information grid interface, information assurance, and test/training enabling architecture.

These upgrades to fielded systems are categorized as Budget Activity 7, Operational Systems Development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Major Thrust: Modernize timing and safety systems to complete activation of Western Range (WR) Operations Control Center. Modernize telemetry, radar, and command destruct instrumentation on WR and...	12.776	9.340	3.685	0.000	3.685

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force							DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0305182F: <i>Spacelift Range System</i>			PROJECT 674137: <i>Launch and Test Range System (LTRS) Modernization</i>					
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.											
Major Thrust: Provide program support, to include System Program Office operations, SETA, and FFRDC. <i>FY 2009 Accomplishments:</i> In FY 2009: Continued engineering support from Aerospace (FFRDC). <i>FY 2010 Plans:</i> In FY 2010: Continued engineering support from Aerospace (FFRDC). <i>FY 2011 Base Plans:</i> In FY 2011: Continue engineering support from Aerospace (FFRDC). <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A						0.546	0.400	0.300	0.000	0.300	
Accomplishments/Planned Programs Subtotals						13.322	9.915	9.933	0.000	9.933	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0305182F: <i>Spacelift Range System Space, OPAF</i>	99.086	99.975	91.004	0.000	91.004	107.629	106.619	104.514	106.412	0.000	0.000
	2.948	2.948	2.978	0.000	2.978	3.032	3.082	3.126	3.178	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305182F: <i>Spacelift Range System</i>	PROJECT 674137: <i>Launch and Test Range System (LTRS) Modernization</i>
--	--	--

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0305182F (1): <i>Spares and Repair Parts, OPAF</i>											

D. Acquisition Strategy

The AF is using two competitively awarded, complementary contracts, managed by the Space and Missile Systems Center, to modernize the ranges on a minimal-interference basis as they continue to support operational launches and tests. The AF competitively awarded a follow-on systems engineering and integration contract in Dec 09 and will competitively award a follow-on modernization/improvement contract in late FY11.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305182F: <i>Spacelift Range System</i>	PROJECT 674137: <i>Launch and Test Range System (LTRS) Modernization</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Range Standardization and Automation IIA	C/CPAF	Lockheed Martin Santa Maria, CA	335.704	0.000		0.000		0.000		0.000	0.000	335.704	349.469
Spacelift Range System Contract	C/CPAF	ITT Industries Cape Canaveral, FL	169.084	9.340	Oct 2009	3.685	Oct 2010	0.000		3.685	0.000	182.109	Continuing
Follow-on modernization and improvement contract	C/CPIF	TBD TBD	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Separate systems engineering and integration contract	C/CPIF	Booz Allen and Hamilton McLean, VA	0.000	0.175	Dec 2009	5.948	Oct 2010	0.000		5.948	Continuing	Continuing	Continuing
Subtotal			504.788	9.515		9.633		0.000		9.633			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SPO Program Support (FFRDC, SETA, SPO Ops)	Various	Various Various	36.917	0.400	Oct 2009	0.300	Oct 2010	0.000		0.300	Continuing	Continuing	Continuing
	Various	Various	34.353	0.000		0.000		0.000		0.000	0.000	34.353	Continuing

UNCLASSIFIED

R-1 Line Item #203

Page 7 of 11

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0305182F: <i>Spacelift Range System</i>					PROJECT 674137: <i>Launch and Test Range System (LTRS) Modernization</i>				

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
California Space Infrastructure Program		Various											
Subtotal			71.270	0.400		0.300		0.000		0.300			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	576.058	9.915		9.933		0.000		9.933			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

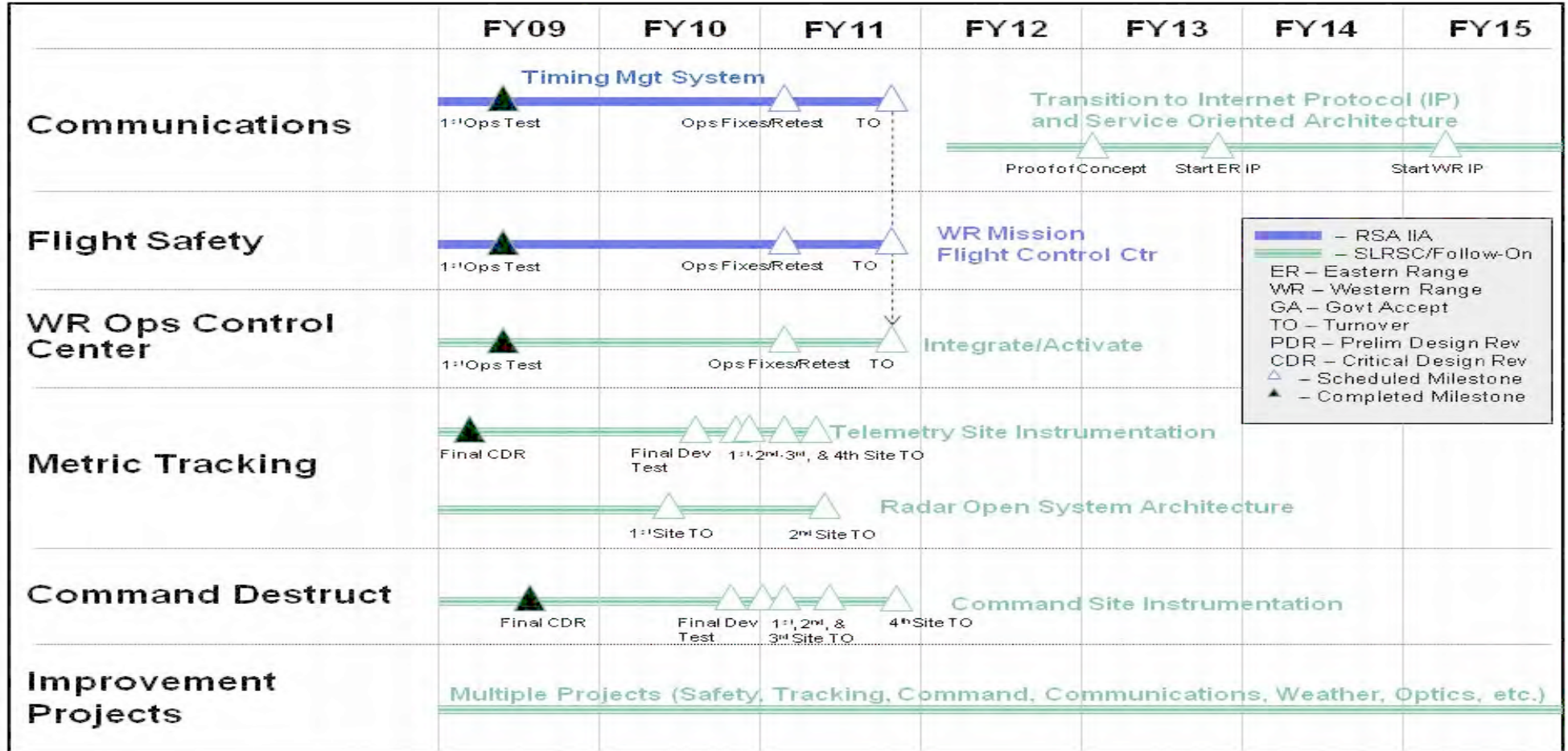
3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305182F: Spacelift Range System

PROJECT

674137: Launch and Test Range System (LTRS) Modernization



UNCLASSIFIED

R-1 Line Item #203

Page 9 of 11

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305182F: <i>Spacelift Range System</i>	PROJECT 674137: <i>Launch and Test Range System (LTRS) Modernization</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
- WR Comm Timing Mgmt System Ops Testing	1	2009	2	2009
- WR Comm Timing Mgmt System Ops Fix, Retest, Acceptance, and Turnover	1	2010	4	2011
- WR Mission Flight Control Center Ops Testing	1	2009	2	2009
- WR Mission Flight Control Center Ops Fix, Retest, Acceptance, and Turnover	1	2010	4	2011
- WR Ops Control Center (WROCC) Ops Testing	1	2009	2	2009
- WR Ops Control Center (WROCC) Ops Fix, Retest, Acceptance, and Turnover	1	2010	4	2011
- Metric Tracking (Telemetry) Final Critical Design Review	1	2009	1	2009
- Metric Tracking (Telemetry) Final Developmental Test	2	2010	3	2010
- Metric Tracking (Telemetry) 1st Site Ops Testing, Acceptance, and Turnover	3	2009	4	2010
- Metric Tracking (Telemetry) 2nd Site Ops Testing, Acceptance, and Turnover	3	2010	4	2010
- Metric Tracking (Telemetry) 3rd Site Ops Testing, Acceptance, and Turnover	3	2010	1	2011
- Metric Tracking (Telemetry) 4th Site Ops Testing, Acceptance, and Turnover	3	2010	2	2011
- Metric Tracking (Radar Open System Architecture) 1st Site Ops Testing, Acceptance, and Turnover	1	2009	2	2010
- Metric Tracking (Radar Open System Architecture) 2nd Site Ops Testing, Acceptance, and Turnover	3	2010	2	2011
- Command Destruct (Vehicle Uplink) Final Critical Design Review	1	2009	3	2009
- Command Destruct (Vehicle Uplink) Final Developmental Test	1	2010	4	2010
- Command Destruct (Vehicle Uplink) 1st Site Ops Testing, Acceptance, and Turnover	3	2010	1	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305182F: <i>Spacelift Range System</i>	PROJECT 674137: <i>Launch and Test Range System (LTRS) Modernization</i>

Event	Start		End	
	Quarter	Year	Quarter	Year
- Command Destruct (Vehicle Uplink) 2nd Site Ops Testing, Acceptance, and Turnover	4	2010	1	2011
- Command Destruct (Vehicle Uplink) 3rd Site Ops Testing, Acceptance, and Turnover	1	2011	2	2011
- Command Destruct (Vehicle Uplink) 4th Site Ops Testing, Acceptance, and Turnover	3	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305193F: <i>INTEL SPT TO INFO OPS</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	3.627	2.240	1.254	0.000	1.254	1.275	1.301	1.320	1.340	Continuing	Continuing
674871: <i>Information Operations Technology</i>	3.627	2.240	1.254	0.000	1.254	1.275	1.301	1.320	1.340	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element supports, but is not limited to intelligence activities focused on the development, integration and assessment of systems or applications in support of non-traditional and contingency warfare. This program will also develop network-centric collaborative techniques to improve situation awareness and operational-intelligence planning efforts.

Funds the Joint Task Force - Global Network Operations (JTF-GNO) Threat Incident Database (JTID) development. JTID fuses network incident and intelligence data analyzed within the context of operationally relevant information from affected commands; develops appropriate response options and detailed courses-of-action in defense of protected networks; catalogs foreign Computer Network Operations (CNO) specific intrusion threat information to DoD's command and control infrastructure in near real-time to include intentions and capabilities. JTID is interoperable with law enforcement and allied communities of interest.

This program is funded under BA-7, Operational Systems Development, because it supports intelligence efforts that involve engineering development.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305193F: <i>INTEL SPT TO INFO OPS</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	3.627	1.261	0.000	0.000	0.000
Current President's Budget	3.627	2.240	1.254	0.000	1.254
Total Adjustments	0.000	0.979	1.254	0.000	1.254
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	-0.021			
• Congressional Adds		1.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	1.254	0.000	1.254

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 674871: *Information Operations Technology*

 Congressional Add: *Classified Program*

 Congressional Add: *Open Source Research*

Congressional Add Subtotals for Project: 674871

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	2.380	0.000
	0.000	1.000
	2.380	1.000
	2.380	1.000

Change Summary Explanation

Congress added \$2.380M in FY09 for a classified program and \$1.0M in FY10 for Open Source Research.

UNCLASSIFIED

R-1 Line Item #204

Page 2 of 10

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305193F: <i>INTEL SPT TO INFO OPS</i>				PROJECT 674871: <i>Information Operations Technology</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674871: <i>Information Operations Technology</i>	3.627	2.240	1.254	0.000	1.254	1.275	1.301	1.320	1.340	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This program element supports, but is not limited to intelligence activities focused on the development, integration and assessment of systems or applications in support of non-traditional and contingency warfare. This program will also develop network-centric collaborative techniques to improve situation awareness and operational-intelligence planning efforts.

Funds the Joint Task Force - Global Network Operations (JTF-GNO) Threat Incident Database (JTID) development. JTID fuses network incident and intelligence data analyzed within the context of operationally relevant information from affected commands; develops appropriate response options and detailed courses-of-action in defense of protected networks; catalogs foreign Computer Network Operations (CNO) specific intrusion threat information to DoD's command and control infrastructure in near real-time to include intentions and capabilities. JTID is interoperable with law enforcement and allied communities of interest.

This program is funded under BA-7, Operational Systems Development, because it supports intelligence efforts that involve engineering development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Intelligence activities focused on the development, integration and assessment of systems or applications in support of non-traditional and contingency warfare. <i>FY 2009 Accomplishments:</i> In FY 2009: Accomplished modifications to near real-time database that contains foreign CNO specific threat information to DoD's command and control infrastructure, to include intentions and capabilities. Continued development of tools for production of automated intelligence reports on computer network attacks against US systems in accordance with CJCSM 6510.03. Continued to develop better incident	1.247	1.240	1.254	0.000	1.254

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305193F: <i>INTEL SPT TO INFO OPS</i>	PROJECT 674871: <i>Information Operations Technology</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
Congressional Add: Classified Program <i>FY 2009 Accomplishments:</i> In FY 2009: Classified Program <i>FY 2010 Plans:</i> In FY 2010: N/A	2.380	0.000
Congressional Add: Open Source Research <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Open Source Research	0.000	1.000
Congressional Adds Subtotals	2.380	1.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0305193F: <i>Joint Task Force - Global Network Operations, (O&M)</i>	9.903	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The JTID program is executing an incremental improvement of JTID capabilities. Systems engineering, development and initial testing will be accomplished under a full and open competition, Time & Materials (T&M) contract.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305193F: <i>INTEL SPT TO INFO OPS</i>	PROJECT 674871: <i>Information Operations Technology</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305193F: <i>INTEL SPT TO INFO OPS</i>				PROJECT 674871: <i>Information Operations Technology</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JTID GNO Analyses	TM	Northrop Grumman IT-TASC Lorton VA	1.247	1.240	Dec 2009	1.254	Dec 2010	0.000		1.254	Continuing	Continuing	Continuing
Subtotal			1.247	1.240		1.254		0.000		1.254			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Classified Program	TBD/TBD	TBD TBD	2.380	0.000		0.000		0.000		0.000	0.000	2.380	Continuing
Congressional Add	TBD/TBD	TBD TBD	0.000	1.000	Feb 2010	0.000		0.000		0.000	0.000	1.000	Continuing
Subtotal			2.380	1.000		0.000		0.000		0.000	0.000	3.380	

Remarks

Contract Method & Type; Performing Activity & Location - Classified

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305193F: <i>INTEL SPT TO INFO OPS</i>	PROJECT 674871: <i>Information Operations Technology</i>

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.627	2.240	1.254	0.000	1.254			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

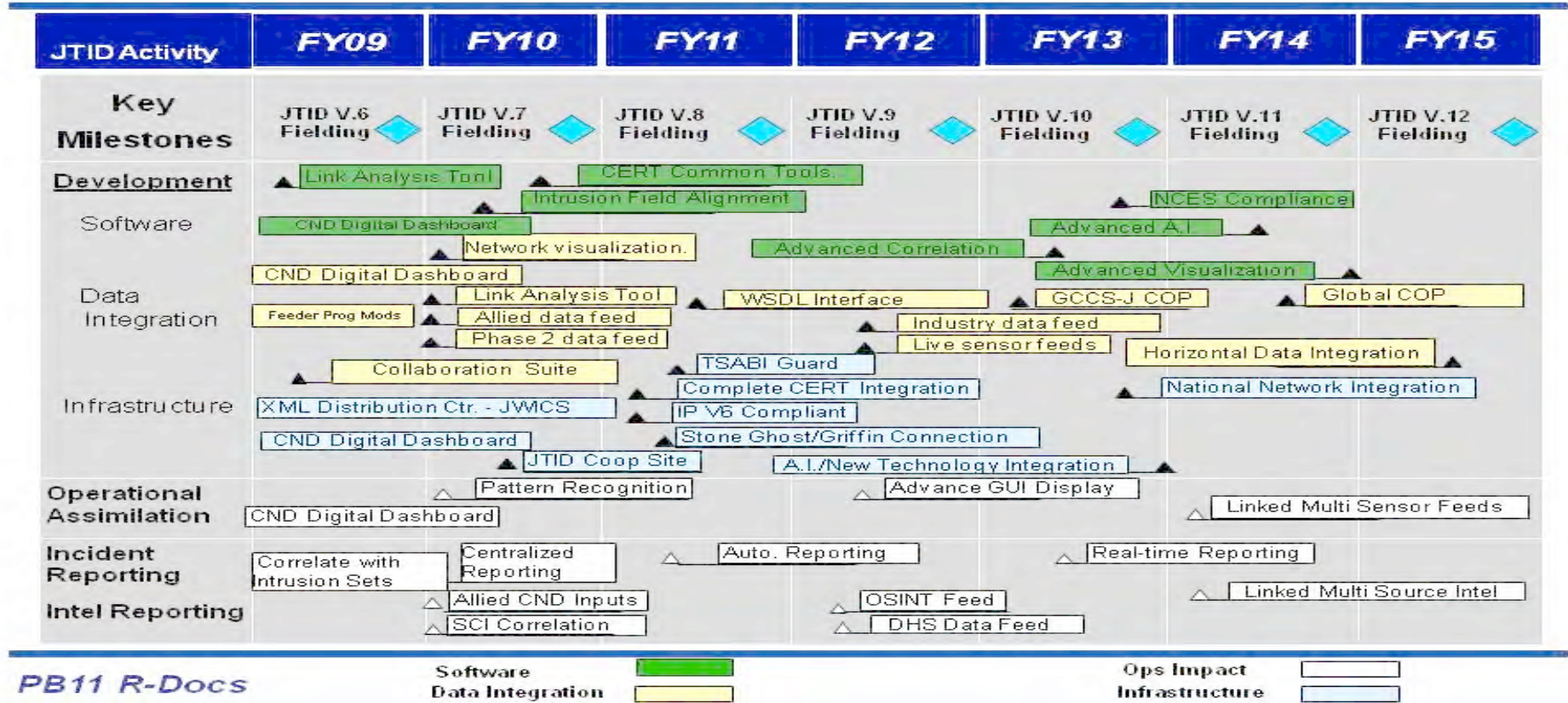
PE 0305193F: *INTEL SPT TO INFO OPS*

PROJECT

674871: *Information Operations Technology*



JTID Schedule



UNCLASSIFIED

R-1 Line Item #204

Page 9 of 10

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305193F: *INTEL SPT TO INFO OPS*

PROJECT

674871: *Information Operations Technology*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Fielding of V.6	4	2009	4	2009
Fielding of V.7	4	2010	4	2010
Fielding of V.8	4	2011	4	2011

UNCLASSIFIED

R-1 Line Item #204

Page 10 of 10

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305205F: <i>Endurance Unmanned Aerial Vehicles</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	48.736	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
675372: <i>Integrated Sensor IS Structure</i>	0.000	48.736	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	200.000

A. Mission Description and Budget Item Justification

This PE will focus USAF efforts on long endurance UAVs. Efforts can include airships and more standard aircraft structures. The USAF plan is to develop technologies which will allow days of endurance as well as their associated sensors and communications suites.

The Integrated Sensor Is Structure (ISIS) Program is developing a radar of unprecedented proportions that is fully integrated into a station-keeping stratospheric airship. The ISIS will support the nation's need for persistent wide-area surveillance, tracking, and engagement of all time-critical air and ground targets. Automated surveillance and tracking includes all air targets to the radar horizon of 600 km and all ground targets to a range of 300 km. The radar aperture also provides track data and other communications directly to users in-theater. The system is expected to be launched from CONUS locations with a multi-year operational life. No support personnel or facilities are required in-theater. Efforts will include work on the ground station and the corresponding Processing, Exploitation, and Dissemination (PED) connectivity.

Funds in any Project can also cover activities to include studies and analysis to support both current program planning and execution and future program planning.

This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305205F: <i>Endurance Unmanned Aerial Vehicles</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	73.736	0.000	0.000	0.000
Current President's Budget	0.000	48.736	0.000	0.000	0.000
Total Adjustments	0.000	-25.000	0.000	0.000	0.000
• Congressional General Reductions		-25.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

Change Summary Explanation

In FY10, Congress reduced program funding by \$25.0M.
 This program is currently being developed by DARPA. USAF will cost share development beginning in FY 10.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305205F: <i>Endurance Unmanned Aerial Vehicles</i>	PROJECT 675372: <i>Integrated Sensor IS Structure</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675372: <i>Integrated Sensor IS Structure</i>	0.000	48.736	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	200.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This PE will focus USAF efforts on long endurance UAVs. Efforts can include airships and more standard aircraft structures. The USAF plan is to develop technologies which will allow days of endurance as well as their associated sensors and communications suites.

The Integrated Sensor Is Structure (ISIS) Program is developing a radar of unprecedented proportions that is fully integrated into a station-keeping stratospheric airship. The ISIS will support the nation's need for persistent wide-area surveillance, tracking, and engagement of all time-critical air and ground targets. Automated surveillance and tracking includes all air targets to the radar horizon of 600 km and all ground targets to a range of 300 km. The radar aperture also provides track data and other communications directly to users in-theater. The system is expected to be launched from CONUS locations with a multi-year operational life. No support personnel or facilities are required in-theater. Efforts will include work on the ground station and the corresponding Processing, Exploitation, and Dissemination (PED) connectivity.

Funds in any Project can also cover activities to include studies and analysis to support both current program planning and execution and future program planning.

This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Major Thrust: Program development. <i>FY 2009 Accomplishments:</i> In FY 2009: N/A.	0.000	48.736	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305205F: <i>Endurance Unmanned Aerial Vehicles</i>	PROJECT 675372: <i>Integrated Sensor IS Structure</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: conduct studies on enabling technologies; provide Air Force share of program development costs.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: N/A.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	0.000	48.736	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0603287E: <i>DARPA (RDT&E)</i>	100.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0603286E: <i>DARPA (RDT&E)</i>	0.000	60.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The funding for the ISIS AF/DARPA effort will further efforts already underway by DARPA towards the flight demo of the technology. These efforts include work on the actual skin development and testing of the hull material, radar design/development (s/w, electronics, etc), propulsion and power systems, design of the ground station, antenna design/production calibration systems, and integration of the radar into the hull structure. Acquisition strategy varies by contract. When possible, contracts are awarded under full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305205F: <i>Endurance Unmanned Aerial Vehicles</i>	PROJECT 675372: <i>Integrated Sensor IS Structure</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prototype Development	MIPR	DARPA TBD	0.000	48.736	Feb 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.000	48.736		0.000		0.000		0.000			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	0.000	48.736		0.000	0.000	0.000		

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305205F: *Endurance Unmanned Aerial Vehicles*

PROJECT

675372: *Integrated Sensor IS Structure*



Integrated Sensor Is Structure (ISIS) Endurance UAV PE

	FY09	FY10	FY11	FY12	FY13	FY14	FY15
<p>ISIS</p> <p>System Demonstrator Development</p>		<p>USAF-DARPA Joint Efforts</p>					

Concept activities
 Production / fielding

Design / development
 Pre-Production

Integration / test
 Key events

PB11 R-Docs

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305205F: *Endurance Unmanned Aerial Vehicles*

PROJECT

675372: *Integrated Sensor IS Structure*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
USAF and DARPA system demonstrator development	2	2010	2	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	111.170	145.413	168.963	0.000	168.963	152.123	105.939	79.914	72.442	Continuing	Continuing
674818: <i>Imaging and Targeting Support</i>	20.742	52.635	13.345	0.000	13.345	12.254	13.836	13.939	14.361	Continuing	Continuing
674819: <i>Common Data Link (CDL)</i>	37.475	37.694	37.806	0.000	37.806	38.021	38.685	39.268	39.845	Continuing	Continuing
675092: <i>JTC/SIL MUSE</i>	1.653	3.470	3.374	0.000	3.374	3.388	3.473	3.488	3.500	Continuing	Continuing
675291: <i>Gorgon Stare</i>	37.500	46.000	31.833	0.000	31.833	0.000	0.000	0.000	0.000	Continuing	Continuing
675292: <i>Airborne Cueing & Exploitation Sys-Hyperspectral(ACES HY)</i>	13.800	5.614	3.894	0.000	3.894	2.908	2.893	2.944	2.930	0.000	0.000
675382: <i>Wide Area Airborne Surveillance Program of Record (WAAS POR)</i>	0.000	0.000	78.711	0.000	78.711	95.552	47.052	20.275	11.806	0.000	0.000

A. Mission Description and Budget Item Justification

The Airborne Reconnaissance Systems program coordinates the development of advanced airborne reconnaissance system technologies (sensors, data links, targeting networks and products, and quick reaction capabilities) in support of multiple airborne reconnaissance platforms, both manned and unmanned. Its objective is to develop, demonstrate, and rapidly transition advanced, interoperable, multi-platform solutions to reduce the find, fix, target, and track kill chain timeline. This program also coordinates the development of common collection, processing, and dissemination solutions for near-real time intelligence, surveillance, and reconnaissance (ISR).

This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

Funds in any project can also cover activities to include studies and analysis to support both current program planning and execution and future program planning.

UNCLASSIFIED

R-1 Line Item #206

Page 1 of 41

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	103.870	143.892	0.000	0.000	0.000
Current President's Budget	111.170	145.413	168.963	0.000	168.963
Total Adjustments	7.300	1.521	168.963	0.000	168.963
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	7.300	1.521	168.963	0.000	168.963

Change Summary Explanation

Note: Funding added for Gorgon Stare improvements (\$3.5M) and FY08 funding withhold payback (\$3.8M).

UNCLASSIFIED

R-1 Line Item #206

Page 2 of 41

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 674818: <i>Imaging and Targeting Support</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674818: <i>Imaging and Targeting Support</i>	20.742	52.635	13.345	0.000	13.345	12.254	13.836	13.939	14.361	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The purpose of the Imaging and Targeting Support (I&TS) program is to develop and demonstrate next-generation, persistent, wide area surveillance and common imagery reconnaissance sensor capabilities (radar and electro-optical systems) for multiple airborne platforms, and sensor products to aid in rapid targeting (geolocation models, sensor-based exploitation tools, sensor networking capabilities). Developmental efforts pursued are improved sensor capabilities (such as hyperspectral imagery [HSI], measurement and signature intelligence [MASINT], polarimetric imaging, ground moving target indication, foliage penetration, and other radar and electro-optical modes), increased geolocation accuracy, advanced sensor data correlation, automated target detection, network centric warfare, and other Intelligence, Surveillance, and Reconnaissance (ISR) and associated Tasking Processing Exploitation and Dissemination (TPED) capabilities to reduce both target search and kill chain timelines; as well as, supporting traditional intelligence activities. I&TS will increase interoperability among developed systems by developing common standards and tools. I&TS focuses on the following areas:

Development and integration of common radar and electro-optical sensors (Synthetic Aperture Radar [SAR], Low Frequency SAR, and antennas, Electro-Optical [EO], Infrared [IR], HSI, Low Light, Laser Radar [LADAR]) and their operational modes (High Resolution Imagery, Moving Target Indication, Persistent Surveillance, Wide Area Surveillance, Spectral Identification) for multiple airborne platforms.

Development and demonstration of advanced airborne tactical sensor and associated TPED processing algorithms and tools (automatic registration, automatic and assisted target detection, network centric warfare). Development of integrated multi-sensor capabilities to detect and identify obscured targets (OT). Development and implementation of imagery standards (Common Ground Moving Target Indicator (GMTI), National Imagery Transmission Format (NITF)). These efforts focus on reducing the find, fix and track elements of the time critical targeting kill-chain timeline while improving operator and decision-maker efficiency and effectiveness.

Enhancement of Imagery Intelligence (IMINT) product quality. Monitoring and enhancement of IMINT product quality (radar and EO/IR imagery, GMTI data, and spectral information) and timeliness throughout the image chain (from sensor to user).

ACES HY moved to new BPAC 675292 starting in FY09.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 674818: <i>Imaging and Targeting Support</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (392): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Acquisition strategy is to maximize commercial and national development efforts and investment through multiple contracting methods; including the use of Engineering Change Proposals (ECP) to modify existing contracts and new contracts that were awarded both competitively or on a sole source basis.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>				PROJECT 674818: <i>Imaging and Targeting Support</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
BAE Systems (SPIRITT)	C/CPFF	BAE Greenlawn, NY	45.435	8.000	Jan 2010	7.890	Jan 2011	0.000		7.890	Continuing	Continuing	Continuing
Essex Corp (MS-SAR)	TBD/TBD	Essex Columbia, MD	13.114	2.400	Jan 2010	2.000	Jan 2011	0.000		2.000	Continuing	Continuing	Continuing
Proxy Aviation (Multiple UAS Cooperation)	TBD/TBD	Proxy Germantown, MD	4.100	1.600	May 2010	0.000		0.000		0.000	0.000	5.700	0.000
Wide Area Surveillance Program of Record	TBD/TBD	TBD TBD	0.000	38.705	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Others	Various/ Various	Various Various	6.460	0.000		1.505	Jan 2011	0.000		1.505	Continuing	Continuing	Continuing
Subtotal			69.109	50.705		11.395		0.000		11.395			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ASC (ITS)	Various/ Various	ASC Wright Patterson, AFB	2.200	1.930	Oct 2009	1.950	Oct 2010	0.000		1.950	Continuing	Continuing	Continuing
Subtotal			2.200	1.930		1.950		0.000		1.950			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 674818: <i>Imaging and Targeting Support</i>
--	---	--

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Remarks													
			Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			71.309	52.635		13.345		0.000		13.345			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

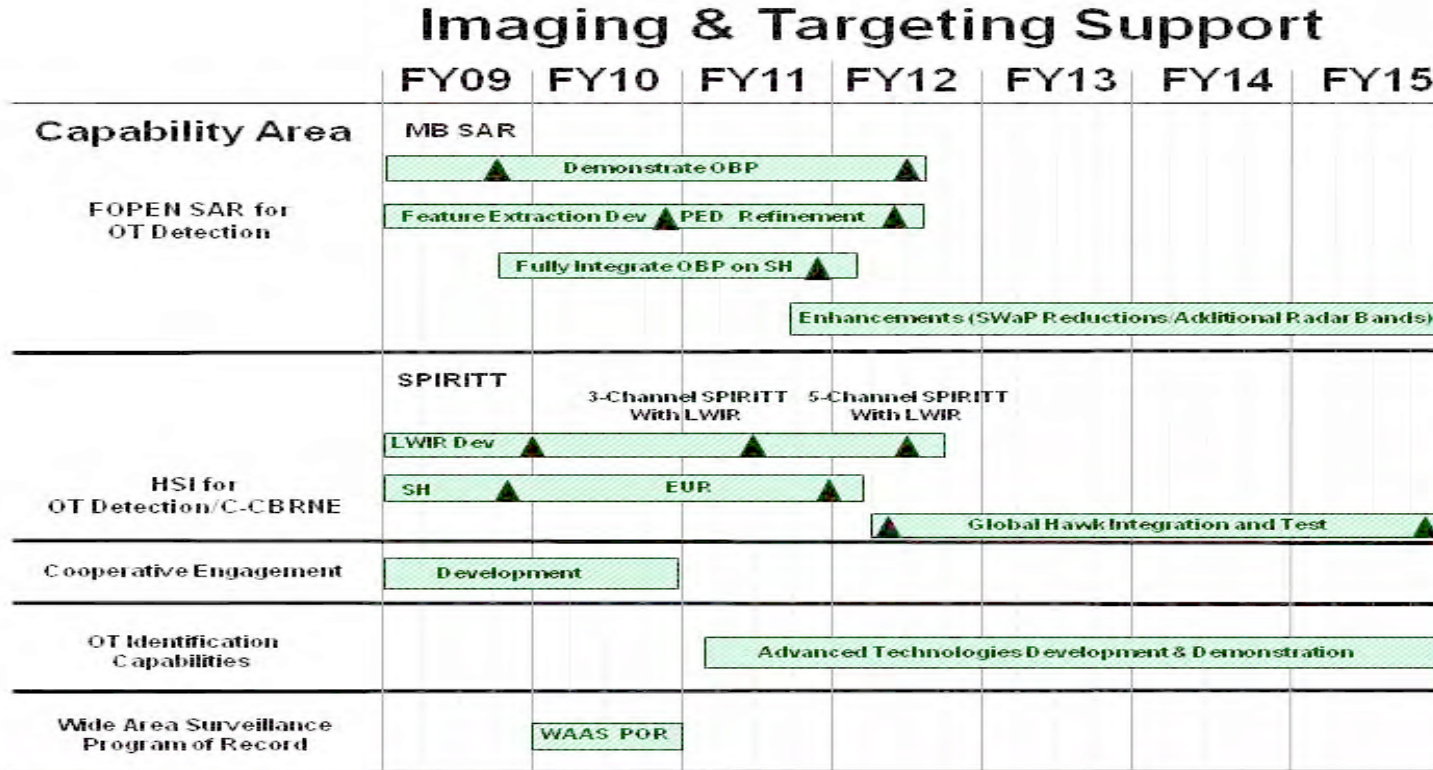
3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305206F: *Airborne Reconnaissance Systems*

PROJECT

674818: *Imaging and Targeting Support*



C-CBRNE: Counter-Chemical, Biological, Radiological, Nuclear, & Explosive EUR: Extended Use of Residuals
 FOPEN: Foliage Penetration HSI: Hyperspectral Imaging LWIR: Long-Wave InfraRed OBP: On-Board Processor
 OT: Obscured Target PED: Processing, Exploitation, & Dissemination SH: Shadow Harvest
 SPIRITT: Spectral Infrared Remote Imaging Transition Testbed SWaP: Size, Weight, & Power

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 674818: <i>Imaging and Targeting Support</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
FOPEN/GPEN SAR Development	1	2009	4	2011
HSI/SPIRITT Development	1	2009	4	2011
Obscured Targets ID Capability	1	2011	4	2011
Wide Area Surveillance Program of Record	1	2010	4	2010
Cooperative Engagement	1	2009	4	2010

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 674819: <i>Common Data Link (CDL)</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674819: <i>Common Data Link (CDL)</i>	37.475	37.694	37.806	0.000	37.806	38.021	38.685	39.268	39.845	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Common Data Link (CDL) provides an interoperable joint command, control, and communications capability for manned/unmanned Intelligence, Surveillance, and Reconnaissance (ISR) assets. As the CDL Executive Agent (EA), the Air Force oversees acquisition of developmental data-link terminals and update/maintenance of the CDL specification. CDL Military Intelligence Program (MIP) funds are used to ensure design configuration, commonality, and interoperability, including testing, among the service's ISR platforms. Updates to the CDL specification and developmental systems impact approximately 500 DoD airborne and ground ISR systems with CDL capabilities. The CDL program is also focused on complying with OSD mandates for Internet Protocol Version 6 (IPv6) incorporation, use of cryptographic (COMSEC) equipment; and direction to minimize spectrum usage and occupancy.

The CDL design permits existing and future reconnaissance assets to operate worldwide, providing sensor data directly via point-to-point or point-to-multipoint broadcast to ground sites and airborne platforms. It also provides the capability to relay data via air-to-air or satellite links when the asset and ground site are not within line-of-sight. CDL provides bandwidth to accommodate numerous sensors collecting Signals Intelligence (SIGINT) and Imagery Intelligence (IMINT) (including video) data.

Concept, technology, and developmental efforts support continuous improvements and implementation of line-of-sight and network Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) capabilities. CDL's modular design provides for future technology insertion and reduces non-recurring engineering and life-cycle costs to the user.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is categorized as Budget Activity 07 because it provides for development of technologies and capabilities in support of operational system development.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 674819: <i>Common Data Link (CDL)</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Having released Revision H of Std-CDL, continuing review of Revision A to BE-CDL, and beginning reviews of Discovery-CDL (D-CDL) and the CAPSTONE overarching specification. Continue to maintain configuration control of the CDL architecture, standards, specifications, and modules.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Will continue review of the CAPSTONE specification and complete review of the D-CDL specification. Will continue to maintain configuration control of the CDL architecture, standards, specifications, and modules.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>						
<p>MAJOR THRUST: Utilize MIP funds for CDL advanced technology insertion studies per CDL WIPT direction to the CDL EA.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Conducted advanced technology insertion studies, including development of CDL certification test equipment and implementing related joint interoperability certification.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continuing advanced technology insertion efforts include developing second-vendor capability to build BE-CDL waveforms (advanced CDL waveform development), sharing networking information with the Digital Data Link program, sending CDL over phased array antennas, and demonstrating CDL waveforms in other portions of the radio frequency spectrum.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Technology developments will continue to increase, as efforts begin on R-CDL waveform implementation and development of a high data rate CDL waveform, as well as continue on</p>		6.118	13.992	20.603	0.000	20.603

UNCLASSIFIED

R-1 Line Item #206

Page 12 of 41

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 674819: <i>Common Data Link (CDL)</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
multispectral CDL waveform portability, increased spectrum efficiency, and multi-sensor to multi-user studies. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	37.475	37.694	37.806	0.000	37.806

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (665): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The CDL Executive Agent, supported by the 653rd Electronics System Group (ELSG), in concert with other program offices and laboratories, provides for development of common, interoperable wideband ISR data links as mandated by Assistant Secretary of Defense (Networks and Information Integration) (ASD(NII)) policy. Platforms are responsible for CDL procurement, NSA/JITC certifications, integration, and installation. Acquisition strategy varies by contract. When possible, contracts are awarded under full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 674819: <i>Common Data Link (CDL)</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
L-3 Communications (Mini, MR-TCDL)	Various/ Various	L-3 Communications Salt Lake City, UT	9.370	3.710	Jan 2010	1.000	Jan 2011	0.000		1.000	Continuing	Continuing	Continuing
Rockwell Collins (Mini)	SS/CPFF	Rockwell Collins Cedar Rapids, IA	3.500	1.566	Jan 2010	1.000	Jan 2011	0.000		1.000	Continuing	Continuing	Continuing
SATCOM Interop/Other Govt Orgs	SS/Various	Various Various	0.300	0.000	Jan 2010	0.312	Jan 2011	0.000		0.312	Continuing	Continuing	0.000
Centech Group (Radar CDL)	SS/CPFF	Centech Group Arlington, VA	0.000	0.000		5.000	Jan 2011	0.000		5.000	0.000	5.000	0.000
Centech Group (CDL Spec Support Team)	SS/CPFF	Centech Group Salt Lake City, UT	1.989	2.400	Feb 2010	2.400	Feb 2011	0.000		2.400	0.000	6.789	0.000
ITT	C/TBD	ITT Beavercreek, OH	0.000	0.000		0.000		0.000		0.000	0.000	0.000	4.500
Cubic (Team Portable, AWV, AESA Demo, MultiSpectral)	C/CPFF	Cubic San Diego, CA	2.140	9.797	Feb 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Lear Siegler Services (Test Set)	TBD/TBD	LSI Shrewsbury, NJ	2.865	3.236	Jan 2010	4.500	Jan 2011	0.000		4.500	Continuing	Continuing	Continuing
Other	SS/Various	Various Various	3.873	4.171	Jan 2010	6.797	Jan 2011	0.000		6.797	Continuing	Continuing	Continuing
Subtotal			24.037	24.880		21.009		0.000		21.009			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 674819: <i>Common Data Link (CDL)</i>
--	---	---

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Various	Various/ Various	Various Various	4.121	5.323	Jan 2010	12.294	Jan 2011	0.000		12.294	Continuing	Continuing	Continuing
Subtotal			4.121	5.323		12.294		0.000		12.294			

Remarks
Advanced Technology Insertion Efforts FY 10/11 (Digital Data Link, Multi-spectral demos, High Data rate CDL)

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Joint Interoperability Test Center	TBD/TBD	JITC Fort Huachuca, AZ	0.824	1.000	Jan 2010	1.200	Jan 2011	0.000		1.200	Continuing	Continuing	Continuing
Northrop Grumman (MR-T CDL Test)	TBD/TBD	Northrup Grumman Herndon, VA	6.000	2.000	Dec 2009	0.000		0.000		0.000	0.000	8.000	0.000
Subtotal			6.824	3.000		1.200		0.000		1.200			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 674819: <i>Common Data Link (CDL)</i>
--	---	---

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Various	MIPR	Various Various	2.493	4.491	Nov 2009	3.303	Jan 2011	0.000		3.303	Continuing	Continuing	Continuing
Subtotal			2.493	4.491		3.303		0.000		3.303			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	37.475	37.694		37.806	0.000	37.806		

Remarks

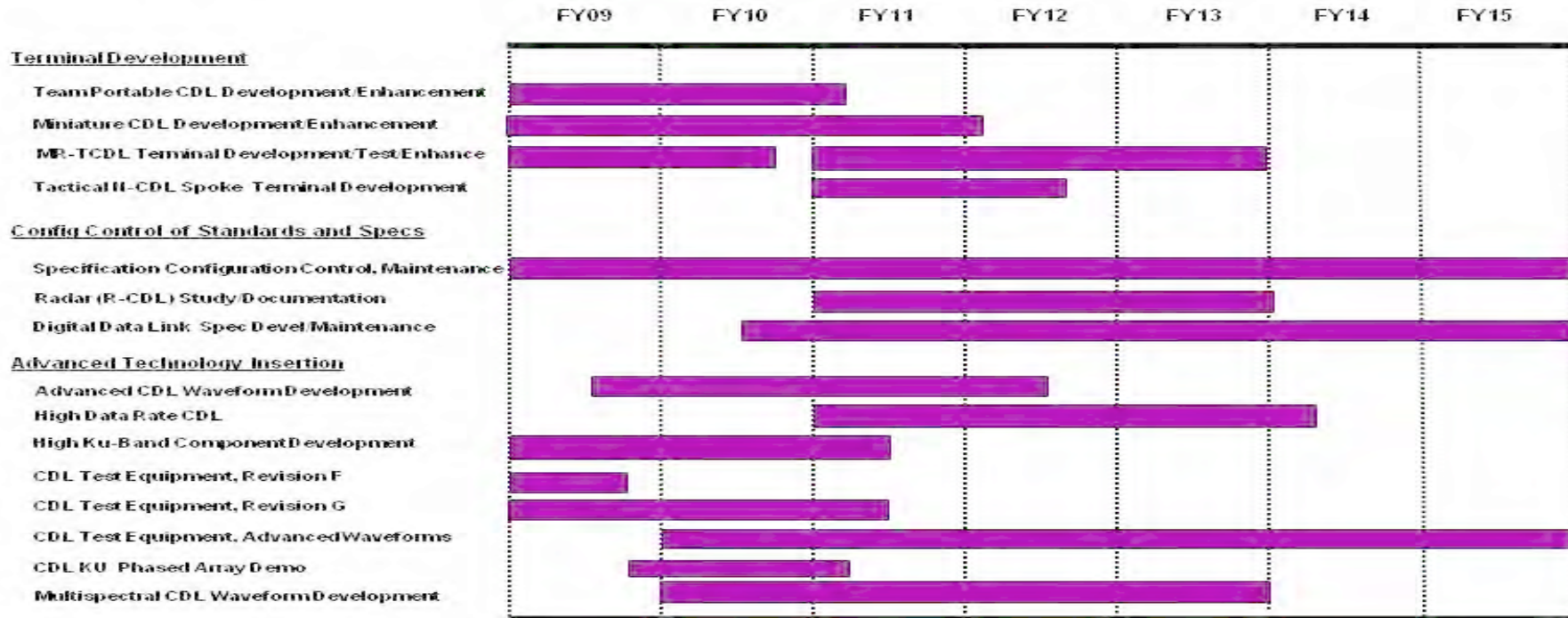
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 674819: <i>Common Data Link (CDL)</i>

Common Data Link



As-of 17 Dec 09

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 674819: <i>Common Data Link (CDL)</i>
--	---	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Team Portable CDL Development	1	2009	1	2011
Miniature CDL Development	1	2009	4	2011
MR-TCDL Development	1	2009	3	2010
MR-TCDL Development and Test	1	2011	4	2011
Tactical N-CDL Spoke Terminal Development	1	2011	4	2011
Spec Configuration Control, V&V, Updates	1	2009	4	2011
Radar CDL Study/Spec Development	1	2011	4	2011
Digital Data Link Spec Development	2	2010	4	2011
Advanced CDL Waveforms Development/Test	2	2009	4	2011
High Data Rate CDL	1	2011	4	2011
High KU-Band Component Development	1	2009	2	2011
CDL Test Equipment, Rev F	1	2009	3	2009
CDL Test Equipment Rev G	1	2009	2	2011
CDL Test Equipment Advanced Waveforms	1	2010	4	2011
CDL Ku Phased Array Demo	4	2009	1	2011
Multi-spectral CDL Development/demo	1	2010	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675092: <i>JTC/SIL MUSE</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675092: <i>JTC/SIL MUSE</i>	1.653	3.470	3.374	0.000	3.374	3.388	3.473	3.488	3.500	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Joint Technology Center/Systems Integration Laboratory (JTC/SIL) is a center of technical excellence to support all Unmanned Air Systems (UAS) programs within the services. The mission includes Service-specific and Joint UAS and Intelligence Surveillance Reconnaissance (ISR) programs throughout DoD. The JTC/SIL provides a Government test bed for rapid prototyping, technology insertion and transition, systems engineering, modeling/simulation, training and Command Control Communications Computers and Intelligence (C4I) optimization. The cornerstone of its diverse tool set is the Multiple Unified Simulation Environment (MUSE), which is the Department's simulation/training system of choice for ISR systems, sensors, and platforms. The MUSE is also known as the Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) in its Air Force application.

The Services and Warfighting Commanders have a requirement for the capability to train with a system that provides a real-time simulation environment containing multiple intelligence systems that can be integrated with larger force-on-force simulations. The MUSE creates a realistic operational environment which supports the ability to assess military utility, architecture and Concept of Operations (CONOPS) development, Tactics, Techniques, and Procedures (TTP) development and refinement, the conduct of emerging concepts experimentation and C4I optimization within warfighting exercises and experiments. The MUSE/AFSERS is the only capability within the Department that allows all Services to train with UAS and ISR assets in a Joint training environment. The MUSE also creates a realistic operational environment that supports an embedded training capability for multiple Program Managers. These tools help to minimize acquisition and life cycle cost and schedule impacts.

The MUSE is currently in use within all services and unified commands simulating PREDATOR, GLOBAL HAWK, HUNTER, Shadow 200 and PIONEER UASs, national and commercial satellite collectors, P-3 and the U-2. During warfighting exercises, the JTC/SIL integrates realistic high-fidelity imagery simulations, emulating the C4I construct. For those assets normally not available for training, the JTC/SIL provides surrogate systems and interfaces. Distributed training environments, virtually linking participants from various locations worldwide, are routinely supported within the MUSE architecture. The MUSE/AFSERS is also used as a Mission Rehearsal Tool for current on-going combat operations.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675092: <i>JTC/SIL MUSE</i>
--	---	---

The JTC/SIL is supporting the OSD Task Force Staff and the Standards and Interoperability IPT as well as the joint team working the Ground Segment Interface (GSI). The JTC/SIL is the primary custodian of this interface and in that role performs various supporting task including development of tools for helping the definition and execution of an open architecture for joint service ground control systems, developing and maintaining STANAG 45 joint interoperability tasks to be defined on an annual basis.

This program is categorized as Budget Activity 7 because it provides for the development of technologies and capabilities in support of operational system development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: DoD's simulation/training system of choice for ISR systems, sensors, and platforms (to include AFSERS, Common Ground Station Interface and infrastructure support) <i>FY 2009 Accomplishments:</i> In FY 2009: continue AFSERS development and infrastructure support <i>FY 2010 Plans:</i> In FY 2010: continue FY 2009 efforts while adding new Common Ground Station Interface effort. <i>FY 2011 Base Plans:</i> In FY 2011: continue all FY 2010 efforts. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A	1.653	3.470	3.374	0.000	3.374
Accomplishments/Planned Programs Subtotals	1.653	3.470	3.374	0.000	3.374

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675092: <i>JTC/SIL MUSE</i>
--	---	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (1097): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

All contracts are awarded after full and open competition and when situations dictate, via sole source.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675092: <i>JTC/SIL MUSE</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JTC/SIL	MIPR	Redstone Arsenal Huntsville, AL	1.653	3.470	Jan 2010	3.374	Jan 2011	0.000		3.374	Continuing	Continuing	Continuing
Subtotal			1.653	3.470		3.374		0.000		3.374			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.653	3.470	3.374	0.000	3.374			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

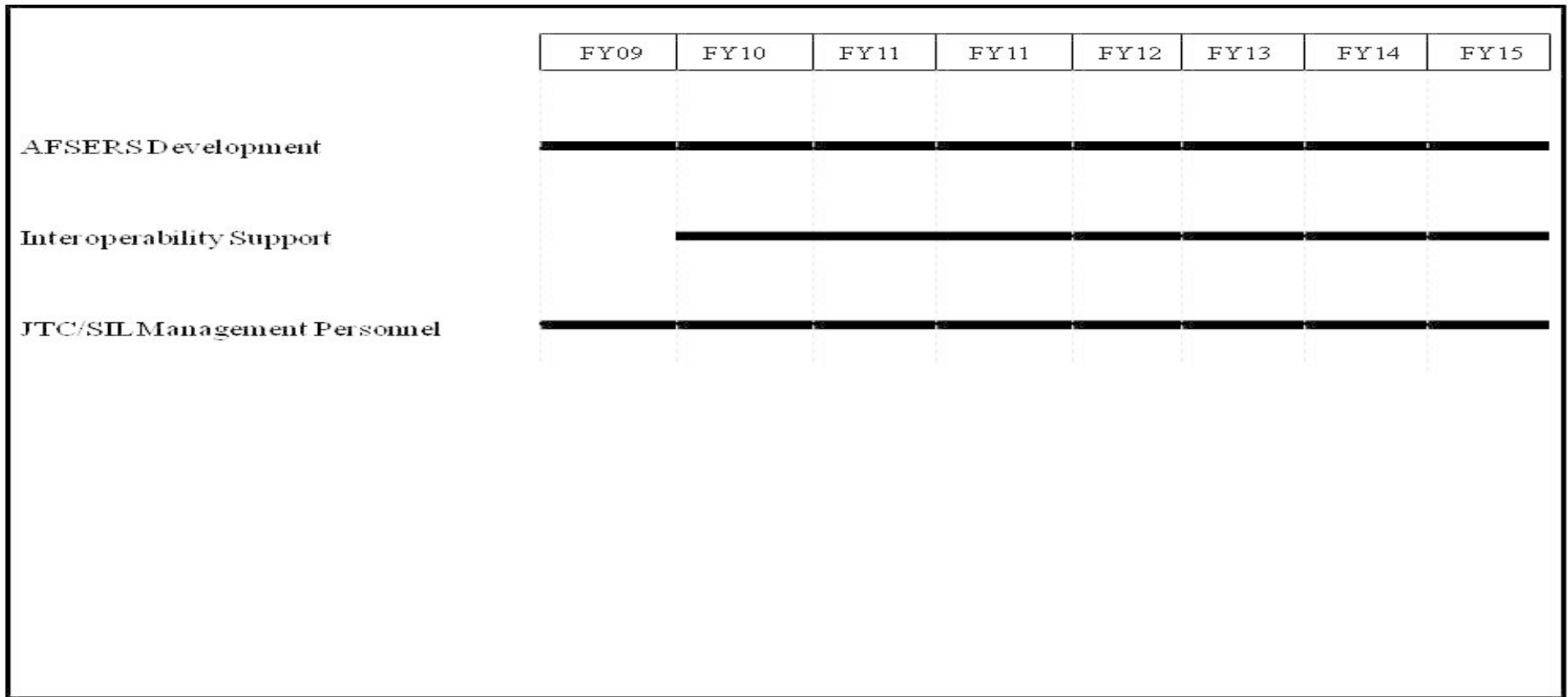
R-1 ITEM NOMENCLATURE

PE 0305206F: *Airborne Reconnaissance Systems*

PROJECT

675092: *JTC/SIL MUSE*

JTC/SIL Schedule



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675092: <i>JTC/SIL MUSE</i>
--	---	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
AFSERS Development	1	2009	4	2011
Interoperability Support	1	2010	4	2011
JTC/SIL Management Personnel	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675291: <i>Gorgon Stare</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675291: <i>Gorgon Stare</i>	37.500	46.000	31.833	0.000	31.833	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Funding will meet Combatant Commander (COCOM) Wide Area Airborne Surveillance (WAAS) urgent operational need and will be managed by the Air Force through the 645th Aeronautical Systems Group (AESG, aka BIG SAFARI), Reconnaissance Systems Wing, Aeronautical Systems Center, Air Force Material Command.

Develop a podded wide area airborne sensor suite to provide city-sized and similar broad area surveillance capability for the Combatant Commanders (COCOMs). The Joint Requirements Oversight Council Memorandum (JROCM 106-08, dated 27 May 08) approved the Air Force concept for a Wide Area Airborne Surveillance (WAAS) program plan to address Service requirements for wide area airborne sensors on existing manned and unmanned aircraft system platforms. Funding will be allocated in FY09-FY13 for this Air Force Quick Reaction Capability (QRC) program (Gorgon Stare) to meet Combatant Commander (COCOM) Wide Area Airborne Surveillance (WAAS) urgent operational need and will be managed through the 645th Aeronautical Systems Group (AESG, a.k.a. BIG SAFARI Program Office), 303rd Reconnaissance Systems Wing, Aeronautical Systems Center, Air Force Material Command.

The acquisition strategy for this Air Force QRC includes delivery of capability in two increments, with development of Increment 2 capability expanding the capabilities of Increment 1. FY11 funding is required to complete development of Increment 2 capability.

BPAC 675291, formerly WAAS, was renamed Gorgon Stare in FY11.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
	37.500	46.000	31.833	0.000	31.833

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675291: <i>Gorgon Stare</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Gorgon Stare Increment 1 and 2 development including Airborne System, C2, Tactical Dissemination, and Fixed Site processing elements. <i>FY 2009 Accomplishments:</i> In FY 2009: continue development. <i>FY 2010 Plans:</i> In FY 2010: continue development. <i>FY 2011 Base Plans:</i> In FY 2011: continue development. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	37.500	46.000	31.833	0.000	31.833

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0305206F: <i>Airborne Recon Systems, MN-9136 (APAF)</i>	43.538	19.550	115.695	0.000	115.695	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0305206F (1): <i>Airborne Recon Systems, (O&M)</i>	6.000	10.445	7.289	0.000	7.289	6.073	5.007	5.243	5.544	0.000	0.000

D. Acquisition Strategy

In response to a COCOM urgent operational need, the WAAS QRC program will be executed by the 645 AESG (BIG SAFARI Program Office) using an incremental acquisition strategy to mitigate risk, find affordable end-to-end architecture solutions and field needed capabilities quickly to address Service requirements for Wide Area Airborne Surveillance using existing manned and unmanned aircraft system platforms.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675291: <i>Gorgon Stare</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675291: <i>Gorgon Stare</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Sierra Nevada Corporation	SS/Various	SNC Sparks, NV	27.500	35.286	Dec 2009	25.333	Dec 2010	0.000		25.333	Continuing	Continuing	Continuing
General Atomics	SS/Various	GA Grey Butte	0.000	0.000		2.500		0.000		2.500	0.000	2.500	0.000
Subtotal			27.500	35.286		27.833		0.000		27.833			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Continuing	TBD/TBD	TBD TBD	2.000	2.714	Dec 2009	0.000		0.000		0.000	Continuing	Continuing	0.000
Subtotal			2.000	2.714		0.000		0.000		0.000			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675291: <i>Gorgon Stare</i>
--	---	---

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
645 AESG, AFRL, Sierra Nevada Corporation	SS/Various	SNC Multiple locations	8.000	8.000	Dec 2009	4.000		0.000		4.000	Continuing	Continuing	0.000
Subtotal			8.000	8.000		4.000		0.000		4.000			0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	37.500	46.000	31.833	0.000	31.833			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

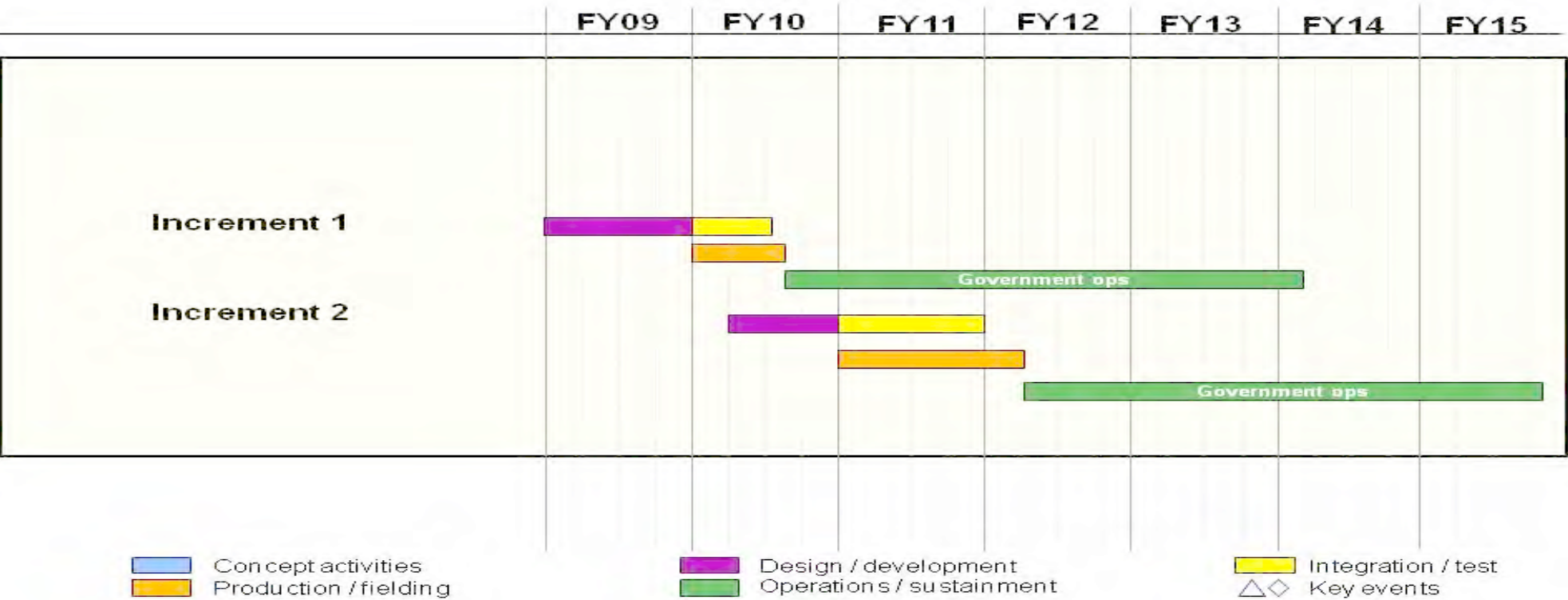
DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY
 3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0305206F: *Airborne Reconnaissance Systems*

PROJECT
 675291: *Gorgon Stare*

WAAS (Gorgon Stare QRC) Schedule



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675291: <i>Gorgon Stare</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Airborne System Element (Increment I)	1	2009	4	2011
Airborne System Element (Increment II)	2	2010	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675292: <i>Airborne Cueing & Exploitation Sys-Hyperspectral(ACES HY)</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675292: <i>Airborne Cueing & Exploitation Sys-Hyperspectral(ACES HY)</i>	13.800	5.614	3.894	0.000	3.894	2.908	2.893	2.944	2.930	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The purpose of the Airborne Cueing and Exploitation System Hyperspectral (ACES HY) project is to provide Hyperspectral Imagery (HSI) sensors and capabilities for MQ-1 Predator Unmanned Aircraft System (UAS) and other manned and unmanned aircraft. ACES HY supports the sponsoring combatant command, Central Command (CENTCOM), and other warfighter requirements.

ACES HY will initially procure multiple sensors with a target platform of MQ-1B Predator Block 15 and develop the necessary training, maintenance and fielding plans to support a working architecture.

FY08 funding (\$10.922M) was executed out of PE 0305206F, BPAC 674818.

Activities also include studies and analysis to support both current and future program planning and execution.

This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Procure three ACES HY sensors with a targeted platform of MQ-1B Predator Block 15 and provide training and support data. <i>FY 2009 Accomplishments:</i> In FY 2009: continue procurement of ACES HY sensors.	13.800	5.614	3.894	0.000	3.894

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675292: <i>Airborne Cueing & Exploitation Sys-Hyperspectral(ACES HY)</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: continue procurement of ACES HY sensors.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: continue procurement of ACES HY sensors.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	13.800	5.614	3.894	0.000	3.894

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (1420): <i>NONE</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Develop an industry partner to procure an improved, baseline deployable, supportable HSI sensor system. The system should support the joint warfighter and ensure spiral upgrade capability. Utilize the Advanced Technology Support Program process developed by OSD DMEA at McClellan, CA. The contractor should provide a disciplined design process that is the lowest risk solution (cost, schedule, and performance) and ensures logistics support with initial test spares and associated source data to support training and TO development. The MQ-1 developer will be included for interface control and plan for final MQ-1B Predator Block 15 integrations prior to fielding.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675292: <i>Airborne Cueing & Exploitation Sys-Hyperspectral(ACES HY)</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Raytheon	C/CPFF	Raytheon McKinney, TX	23.792	5.200	Dec 2009	3.480	Dec 2010	0.000		3.480	Continuing	Continuing	Continuing
Subtotal			23.792	5.200		3.480		0.000		3.480			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Management	TBD/TBD	TBD TBD	0.930	0.414		0.414		0.000		0.414	Continuing	Continuing	0.000
Subtotal			0.930	0.414		0.414		0.000		0.414			0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	24.722	5.614		3.894		0.000		3.894			

Remarks

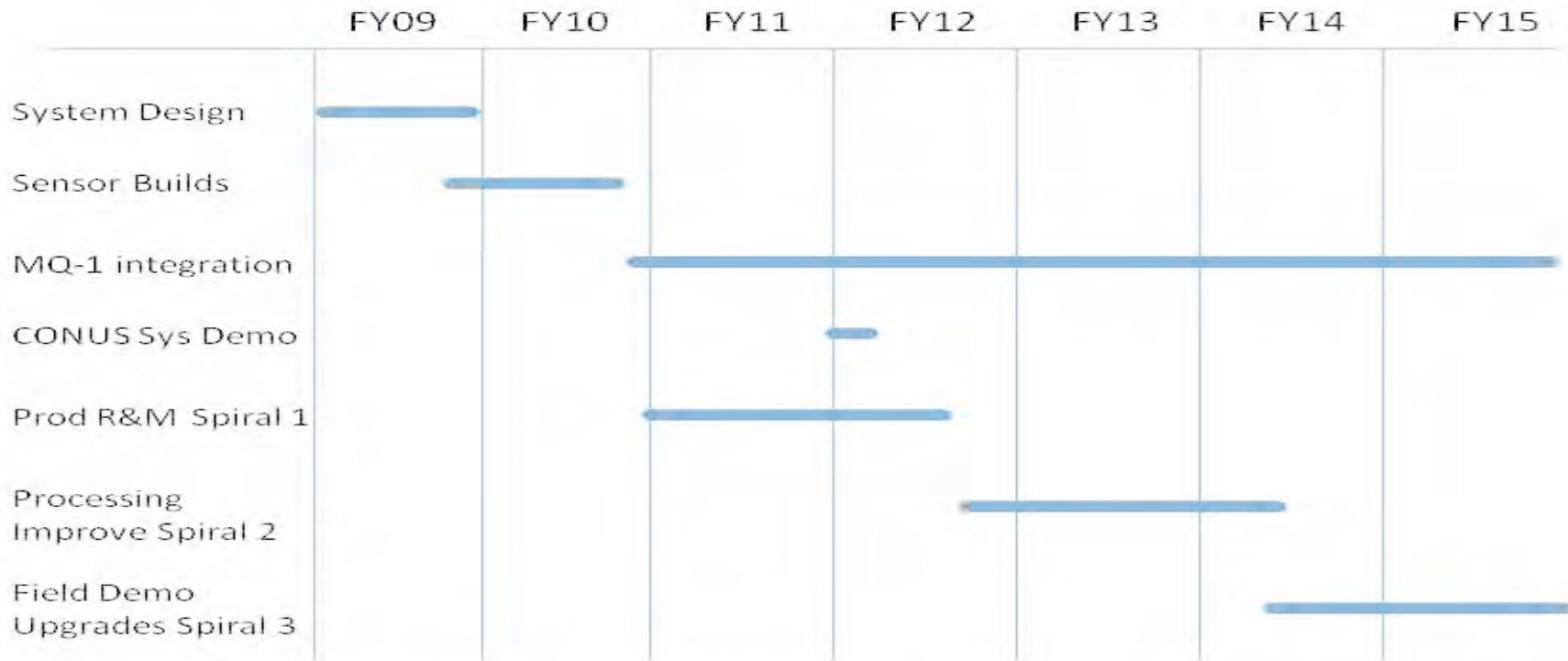
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675292: <i>Airborne Cueing & Exploitation Sys-Hyperspectral(ACES HY)</i>

ACES HY Program Schedule



Three sensor systems are scheduled to be delivered by Sept 2010

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675292: <i>Airborne Cueing & Exploitation Sys-Hyperspectral(ACES HY)</i>
--	---	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
System Design	1	2009	4	2009
Sensor Builds	4	2009	3	2010
MQ-1 Integration	1	2011	4	2011
Prod R&M Spiral 1	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675382: <i>Wide Area Airborne Surveillance Program of Record (WAAS POR)</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675382: <i>Wide Area Airborne Surveillance Program of Record (WAAS POR)</i>	0.000	0.000	78.711	0.000	78.711	95.552	47.052	20.275	11.806	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Wide Area Airborne Surveillance Program of Record (WAAS POR) will develop capabilities to support Combatant Commands' requirements for end-to-end persistent surveillance. Incremental development will provide wide area airborne sensor suites, and associated ground support elements, to provide city-sized and similar broad area surveillance capabilities on manned and unmanned aircraft. Funding will be allocated in FY10-FY15 to meet OSD Program Decision Memorandum (PDM) II direction (19 Nov 07) and COCOM urgent needs to address service requirements for wide area airborne surveillance capability on manned and unmanned aircraft system platforms. Increments will provide flexibility to support various aircraft size, weight and power configurations; sensor performance attributes; Processing, Exploitation, and Dissemination (PED) architectures, and operational missions. Funding will be managed by the Air Force.

FY10 funding (\$38.705M) was executed out of BPAC 674818.

Activities also include studies, analysis, and technology maturation and demonstration to support both current program planning and execution as well as future program planning.

This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Technology maturation, demonstration, and platform integration. <i>FY 2009 Accomplishments:</i> In FY 2009: no activity.	0.000	0.000	78.711	0.000	78.711

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675382: <i>Wide Area Airborne Surveillance Program of Record (WAAS POR)</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: initiate effort in BPAC 674818.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: continue effort.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	0.000	0.000	78.711	0.000	78.711

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0305135F: <i>Wide Area Airborne Surveillance, (APAF)</i>	0.000	0.000	0.000	0.000	0.000	15.500	166.500	292.500	461.900	0.000	936.400

D. Acquisition Strategy
In response to OSD PDM II direction (19 Nov 07) and COCOM urgent operational needs, WAAS POR will be executed by the Air Force using an incremental acquisition strategy to mitigate risk, find affordable end-to-end architecture solutions and field needed capabilities quickly to satisfy service requirements for wide area airborne sensors on manned and unmanned aircraft system platforms.

E. Performance Metrics
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675382: <i>Wide Area Airborne Surveillance Program of Record (WAAS POR)</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total		Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date			
Continuing	TBD/TBD	TBD TBD	0.000	0.000		78.711	Oct 2010	0.000		78.711	0.000	78.711	0.000	
Subtotal			0.000	0.000		78.711		0.000		78.711	0.000	78.711	0.000	

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	78.711	0.000	78.711	0.000	78.711	0.000

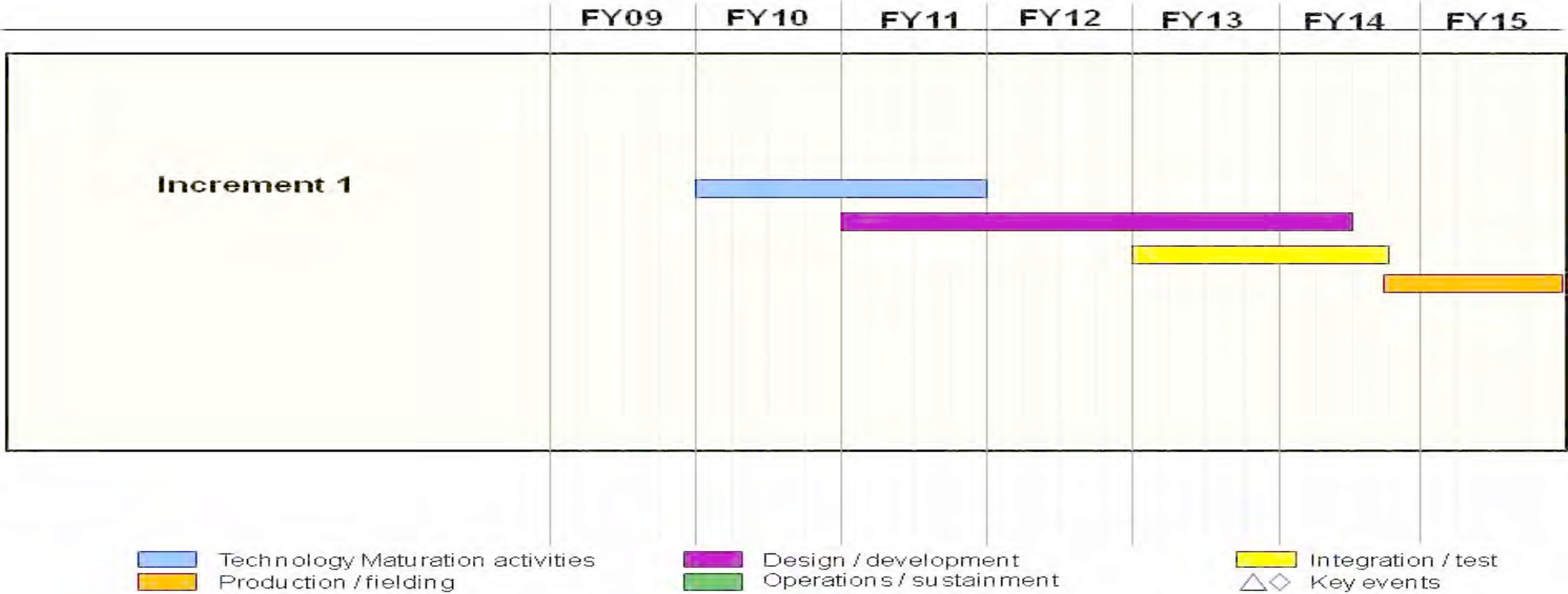
Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206F: <i>Airborne Reconnaissance Systems</i>	PROJECT 675382: <i>Wide Area Airborne Surveillance Program of Record (WAAS POR)</i>

WAAS (PoR) Schedule



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305206F: *Airborne Reconnaissance Systems*

PROJECT

675382: *Wide Area Airborne Surveillance Program of Record (WAAS POR)*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
WAAS POR (Increment I)	1	2010	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305207F: <i>Manned Reconnaissance System</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	17.811	14.846	15.337	0.000	15.337	13.092	13.350	13.554	13.753	Continuing	Continuing
674754: <i>COBRA BALL</i>	17.811	14.846	15.337	0.000	15.337	13.092	13.350	13.554	13.753	Continuing	Continuing

A. Mission Description and Budget Item Justification

The RC-135 Operational Systems Development and enhancement activities project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with the integration and modification of the RC-135 programs and their specialized mission systems - both air and ground. Extensive utilization of commercial-off the-shelf (COTS) based solutions allows rapid fielding of needed capabilities through continuous technology refresh cycles and diminishing manufacturing sources (DMS)/vanishing vendor items (VVI) logistics mitigation efforts. The results of these efforts provide for preliminary assessments of technical feasibility, operability, or military utility as well as specific engineering implementations for integration into the various systems baseline configurations.

These activities are managed by the Air Force through the 645th Aeronautical System Group (645th AESG, a.k.a. BIG SAFARI Program Office), 303rd Reconnaissance System Wing, Aeronautical Systems Center, Air Force Materiel Command, Wright Patterson AFB, OH. BIG SAFARI manages engineering, ground and support system modifications, integration, flight testing, product assurance, acceptance testing, logistics, and training activities. Aircraft, aircraft sensor systems, and associated ground support system modifications planned for FY10-FY15 include support for three distinct RC-135V/W RIVET JOINT configurations [Baselines 8, 9 & 10], two distinct RC-135U COMBAT SENT configurations [Baselines 3 & 4] and three distinct RC-135S COBRA BALL configurations [Baselines 2, 3 & 4].

The world-wide challenge of keeping pace against technologically agile targets used by both nation and non-nation-state adversaries and the rapid evolution of COTS technologies demands a responsive and adaptive acquisition strategy for fielding 'baseline capabilities' that are logistically supportable at all locations. The BIG SAFARI program office uses an incremental 'baseline' strategy to mitigate risk, find affordable solutions and field needed capabilities. Obsolescence and DMS/VVI are addressed with each baseline upgrade as well as annually as part of the sustainment responsibilities. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program effort is categorized as RDT&E budget activity 7, Operational Systems Development, because it involves Air Force R&D for technologies necessary to field essential operational capabilities.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305207F: <i>Manned Reconnaissance System</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	17.811	12.846	0.000	0.000	0.000
Current President's Budget	17.811	14.846	15.337	0.000	15.337
Total Adjustments	0.000	2.000	15.337	0.000	15.337
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		2.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	15.337	0.000	15.337

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 674754: COBRA BALL

Congressional Add: *Wideband Sensor Upgrade and ISR Network Integration*

Congressional Add: *In FY 2009: N/A*

Congressional Add Subtotals for Project: 674754

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	4.992	0.000
	0.000	2.000
	4.992	2.000
	4.992	2.000

Change Summary Explanation

FY 2010 funding includes \$2.0M Congressional Add for Service Oriented Architectures development

UNCLASSIFIED

R-1 Line Item #207

Page 2 of 9

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305207F: <i>Manned Reconnaissance System</i>	PROJECT 674754: <i>COBRA BALL</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674754: <i>COBRA BALL</i>	17.811	14.846	15.337	0.000	15.337	13.092	13.350	13.554	13.753	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The RC-135 Operational Systems Development and enhancement activities project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with the integration and modification of the RC-135 programs and their specialized mission systems - both air and ground. Extensive utilization of commercial-off the-shelf (COTS) based solutions allows rapid fielding of needed capabilities through continuous technology refresh cycles and diminishing manufacturing sources (DMS)/vanishing vendor items (VVI) logistics mitigation efforts. The results of these efforts provide for preliminary assessments of technical feasibility, operability, or military utility as well as specific engineering implementations for integration into the various systems baseline configurations.

These activities are managed by the Air Force through the 645th Aeronautical System Group (645th AESG, a.k.a. BIG SAFARI Program Office), 303rd Reconnaissance System Wing, Aeronautical Systems Center, Air Force Materiel Command, Wright Patterson AFB, OH. BIG SAFARI manages engineering, ground and support system modifications, integration, flight testing, product assurance, acceptance testing, logistics, and training activities. Aircraft, aircraft sensor systems, and associated ground support system modifications planned for FY10-FY15 include support for three distinct RC-135V/W RIVET JOINT configurations [Baselines 8, 9 & 10], two distinct RC-135U COMBAT SENT configurations [Baselines 3 & 4] and three distinct RC-135S COBRA BALL configurations [Baselines 2, 3 & 4].

The world-wide challenge of keeping pace against technologically agile targets used by both nation and non-nation-state adversaries and the rapid evolution of COTS technologies demands a responsive and adaptive acquisition strategy for fielding 'baseline capabilities' that are logistically supportable at all locations. The BIG SAFARI program office uses an incremental 'baseline' strategy to mitigate risk, find affordable solutions and field needed capabilities. Obsolescence and DMS/VVI are addressed with each baseline upgrade as well as annually as part of the sustainment responsibilities. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program effort is categorized as RDT&E budget activity 7, Operational Systems Development, because it involves Air Force R&D for technologies necessary to field essential operational capabilities.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305207F: <i>Manned Reconnaissance System</i>	PROJECT 674754: <i>COBRA BALL</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
Congressional Add: Wideband Sensor Upgrade and ISR Network Integration <i>FY 2009 Accomplishments:</i> In FY 2009: Wideband Sensor Upgrade and ISR Network Integration <i>FY 2010 Plans:</i> In FY 2010: N/A		
Congressional Add: In FY 2009: N/A <i>FY 2009 Accomplishments:</i> In FY 2010: Service Oriented Architectures <i>FY 2010 Plans:</i> In FY 2011: N/A	0.000	2.000
Congressional Adds Subtotals	4.992	2.000

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0305207F: <i>Manned Reconnaissance Systems, (APAF)</i>	149.042	161.982	149.582	0.000	149.582	209.910	214.139	221.674	225.877	0.000	0.000
• PE 0305207F (1): <i>Manned Reconnaissance Systems, (OPAF)</i>	22.857	23.062	23.296	0.000	23.296	23.775	24.222	24.578	24.979	0.000	0.000
	465.627	233.859	259.158	114.767	373.925	325.228	307.858	339.401	355.651	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305207F: <i>Manned Reconnaissance System</i>	PROJECT 674754: <i>COBRA BALL</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0305207F (2): <i>Manned Reconnaissance Systems, (O&M)</i>											

D. Acquisition Strategy

The RC-135 RIVET JOINT, COBRA BALL, and COMBAT SENT aircraft are maintained and baseline / incremental upgrades and quick reaction capabilities (QRC) developments are acquired through the 645th Aeronautical Systems Group (BIG SAFARI Program Office) in accordance with the BIG SAFARI Program Management Directive (PMD), and the BIG SAFARI Class Justification and Approval (J&A) document for acquisition of supplies and services using other than full and open competition criteria. The supplies and services procured by 645th AESG under their J&A to satisfy National Security (FAR 6.302-6) or Unusual and Compelling Urgency (FAR 6.302-2) requirements are supported by the BIG SAFARI Life Cycle Management Plan (LCMP) across the full spectrum of system life cycle management from developmental engineering to system retirement ("cradle to grave" support). Due to the rapidly changing threat environment encountered during our prolonged commitment to Overseas Contingency Operations (OCO), the acquisition program manager has the authority to redirect funding as necessary to meet current stated and emerging Combatant Commander requirements.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305207F: <i>Manned Reconnaissance System</i>				PROJECT 674754: <i>COBRA BALL</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
L-3 Communications	SS/Various	L-3 Com Greenville, TX	17.811	14.846	Dec 2009	15.337	Dec 2010	0.000		15.337	Continuing	Continuing	Continuing
Subtotal			17.811	14.846		15.337		0.000		15.337			

Remarks

All activity is based around the Programmed Depot Maintenance (PDM) airframe schedule which includes multiple contracts and organizations with overlapping and continuous periods of performance. Due to the rapidly changing threat environment encountered during our prolonged commitment to Overseas Contingency Operations (OCO), the acquisition program manager has the authority to redirect funding as necessary to meet current stated and emerging Combatant Commander requirements.

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	17.811	14.846		15.337		0.000		15.337			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

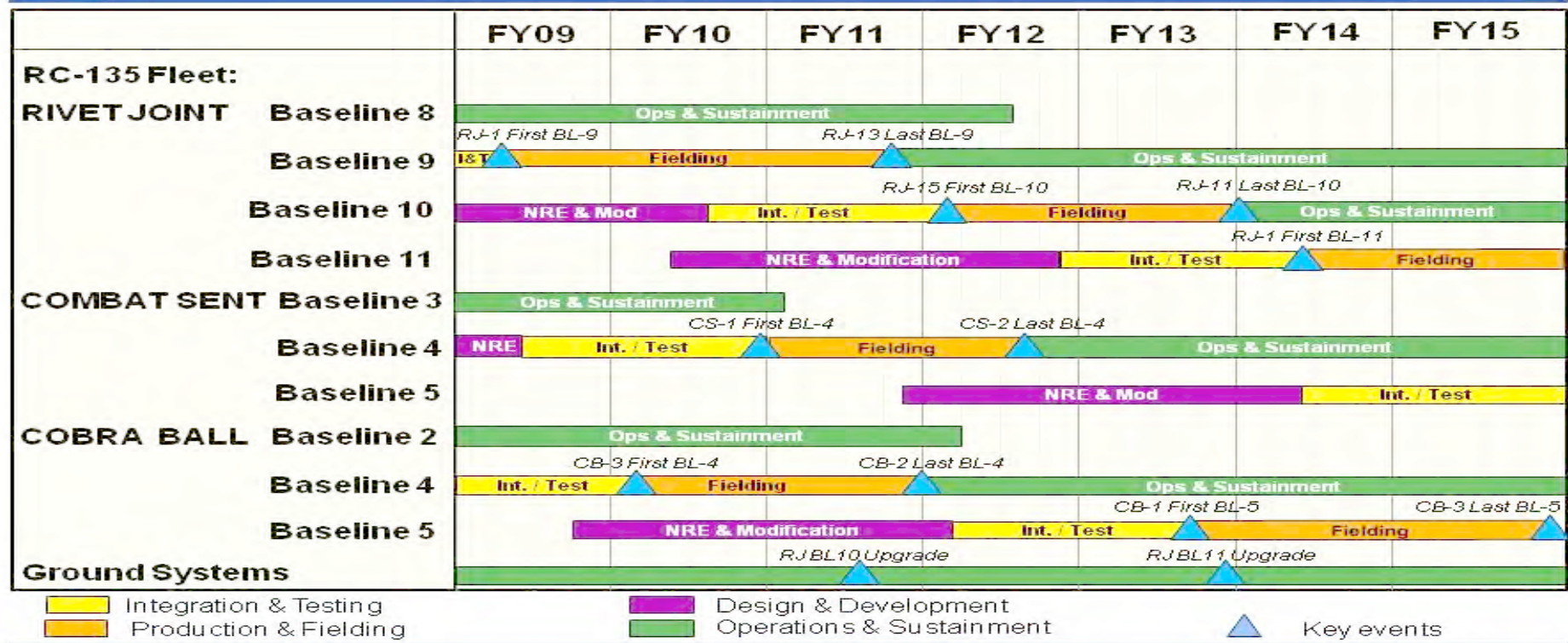
PE 0305207F: Manned Reconnaissance System

PROJECT

674754: COBRA BALL



Manned Reconnaissance (RC-135) Schedule



UNCLASSIFIED

R-1 Line Item #207

Page 8 of 9

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305207F: *Manned Reconnaissance System*

PROJECT

674754: *COBRA BALL*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Integration and test of RIVET JOINT Baseline 9	1	2009	1	2009
Development, integration and test of RIVET JOINT Baseline 10	1	2009	4	2011
Development, integration and test of RIVET JOINT Baseline 11	2	2010	4	2011
Development, integration and test of COMBAT SENT Baseline 4	1	2009	4	2010
Development, integration and test of COMBAT SENT Baseline 5	4	2011	4	2011
Development, integration and test of COBRA BALL Baseline 4	1	2009	1	2010
Development, integration and test of COBRA BALL Baseline 5	4	2009	4	2011

UNCLASSIFIED

R-1 Line Item #207

Page 9 of 9

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305208F: <i>Distributed Common Ground Systems</i>							
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	75.251	82.404	93.398	0.000	93.398	55.147	45.523	46.081	46.759	Continuing	Continuing
674826: <i>Common Imagery Ground / Surface Systems</i>	63.953	70.152	82.509	0.000	82.509	44.263	34.735	35.130	35.647	Continuing	Continuing
675265: <i>Common Imagery Processor (CIP)</i>	11.298	12.252	10.889	0.000	10.889	10.884	10.788	10.951	11.112	0.000	0.000

A. Mission Description and Budget Item Justification

The DoD Distributed Common Ground/Surface System (DCGS) Program is a cooperative effort between the Services and National Agencies to provide world-wide ground/surface systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance sensors/platforms and commercial sources. The DCGS program is developing a family of systems capable of supporting all levels of conflict, interoperable with reconnaissance platforms and sensors, and integrated into the Joint Command, Control, Communication, Computer, and Intelligence (C4I) environment. The program integrates architectures and standards from DCGS Imagery architecture for Imagery Intelligence (IMINT), Joint Airborne SIGINT Architecture (JASA) for Signals Intelligence (SIGINT), and Joint Airborne Measurement and Signature Intelligence (MASINT) Architecture (JAMA) for MASINT, and all-source analyses to Combat Air Forces and Combatant Commanders. The Air Force has been charged by DoD with developing, upgrading and managing the DCGS Integration Backbone (DIB) for all the Services to provide common DCGS enterprise services and interoperability at the data level.

AF DCGS provides the Air Force ground systems capable of tasking intelligence sensors, and receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms and commercial sources. AF DCGS is a 'system of systems' interconnected by a robust communications structure to provide data sharing capabilities between intelligence collectors, exploiters, producers, disseminators, and users. AF DCGS has five core locations: two CONUS based and three OCONUS. Several other AF DCGS systems are distributed among Air Force operational units at Numbered Air Force and Air National Guard locations, to support Joint Task Force commanders and Air and Space Operations Centers (AOC). The CONUS based systems are capable of reach back operations via data link and satellite relay connectivity to forward operating sensors.

AF DCGS provides critical data and significant support for Time Sensitive Targeting (TST) operations. This support will be enhanced with integration of software tools and data interfaces to the AOC, system changes required for new/upgraded sensors and by the transformation of AF DCGS to a net-centric, service oriented architecture construct. By converting from a stovepipe system of systems to a web-based integrated net centric Intelligence, Surveillance, and Reconnaissance (ISR) management capability, AF DCGS will provide the Joint Forces Air Component Commander (JFACC) the capability to:

- 1) Dynamically visualize and command ISR assets and the information in the AOC

UNCLASSIFIED

R-1 Line Item #208

Page 1 of 20

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208F: <i>Distributed Common Ground Systems</i>	
<p>2) Quickly and effectively synchronize AF DCGS ISR operations, collection capabilities, and information with the AOC's combat objectives to improve the TST process and reduce timelines.</p> <p>Using the DIB, AF DCGS modernization is transforming AF DCGS from a proprietary system to a net centric service oriented architecture. This modernization effort, implemented in Block 10.2, will deliver a net centric DCGS capability for the Air Force. Block 10.2 spirals the necessary technologies and tools into its architecture to provide increased capabilities and meet emerging and urgent user operational needs. These spirals will also integrate commercial and government off-the-shelf fact-of-life version upgrades to provide current technologies and achieve necessary application and services. The next series of upgrades will meet the operational need to integrate new and/or improved sensor capabilities and enhance interoperability by migrating to a service oriented architecture and improving data sharing ability in compliance with DoD direction.</p> <p>AF DCGS will continue to modernize its network management and interface capabilities by upgrading and migrating its network to a standardized interface configuration which is easy to expand and adapt to new technologies while growing capacity requirements. Efforts will also focus on network management systems and the ability to manage critical bandwidths to meet operational surges and distributed operational requirements.</p> <p>The Common Imagery Processor (CIP) is the common sensor processing element within the DCGS IMINT architecture. The function of the CIP is to accept airborne imagery data, process it into an exploitable image, and output the image to other elements within DCGS. Efforts continue to upgrade the CIP baseline to maintain currency with upgraded/new sensors.</p> <p>The DCGS-I Testbed is a mobile test environment used by Service and Combat Support Agency program offices to test interoperability interfaces with new sensors, applications, and net centric operations. This testbed also supports the integration and testing of DoD DCGS components prior to introduction into the operational environment. Upgrades to the DCGS-I Testbed will ensure it maintains currency with existing interface standards.</p> <p>AF DCGS participates in the development, testing, and implementation of international standards (to include NATO standardization agreements) to ensure joint, allied, and coalition interoperability.</p> <p>AF DCGS is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.</p>		

UNCLASSIFIED

R-1 Line Item #208

Page 2 of 20

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208F: <i>Distributed Common Ground Systems</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	105.272	82.404	0.000	0.000	0.000
Current President's Budget	75.251	82.404	93.398	0.000	93.398
Total Adjustments	-30.021	0.000	93.398	0.000	93.398
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-30.021	0.000	93.398	0.000	93.398

Change Summary Explanation

- Funding in FY2009 taken for higher AF priorities.

UNCLASSIFIED

R-1 Line Item #208

Page 3 of 20

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305208F: <i>Distributed Common Ground Systems</i>				PROJECT 674826: <i>Common Imagery Ground / Surface Systems</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674826: <i>Common Imagery Ground / Surface Systems</i>	63.953	70.152	82.509	0.000	82.509	44.263	34.735	35.130	35.647	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The DoD Distributed Common Ground/Surface System (DCGS) Program is a cooperative effort between the Services and National Agencies to provide world-wide ground/surface systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance sensors/platforms and commercial sources. The DCGS program is developing a family of systems capable of supporting all levels of conflict, interoperable with reconnaissance platforms and sensors, and integrated into the Joint Command, Control, Communication, Computer, and Intelligence (C4I) environment. The program integrates architectures and standards from DCGS Imagery architecture for Imagery Intelligence (IMINT), Joint Airborne SIGINT Architecture (JASA) for Signals Intelligence (SIGINT), and Joint Airborne Measurement and Signature Intelligence (MASINT) Architecture (JAMA) for MASINT, and all-source analyses to Combat Air Forces and Combatant Commanders. The Air Force has been charged by DoD with developing, upgrading and managing the DCGS Integration Backbone (DIB) for all the Services to provide common DCGS enterprise services and interoperability at the data level.

DCGS provides the Air Force ground systems capable of tasking intelligence sensors, and receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms and commercial sources. AF DCGS is a 'system of systems' interconnected by a robust communications structure to provide data sharing capabilities between intelligence collectors, exploiters, producers, disseminators, and users. AF DCGS has five core locations: two CONUS based and three OCONUS. Several other AF DCGS systems are distributed among Air Force operational units at Numbered Air Force and Air National Guard locations, to support Joint Task Force commanders and Air Operations Centers (AOC). The CONUS based systems are capable of reach back operations via data link relay and satellite relay connectivity to forward operating sensors.

AF DCGS provides critical data and significant support for Time Sensitive Targeting (TST) operations. This support will be enhanced with the integration of software tools and data interfaces to the AOC system changes required for new/upgraded sensors and by the transformation of AF DCGS to a net centric, service oriented architecture construct. By converting from a stovepipe system of systems to a web based integrated net centric Intelligence, Surveillance, and Reconnaissance (ISR) management capability, AF DCGS will provide the Joint Forces Air Component Commander (JFACC) the capability to:

- 1) Dynamically visualize and command ISR assets and the information in the AOC
- 2) Quickly and effectively synchronize AF DCGS ISR operations, collection capabilities, and information with the AOC's combat objectives to improve the TST process and reduce timelines.

UNCLASSIFIED

R-1 Line Item #208

Page 4 of 20

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208F: <i>Distributed Common Ground Systems</i>	PROJECT 674826: <i>Common Imagery Ground / Surface Systems</i>
--	---	--

Using the DIB, AF DCGS modernization will transform AF DCGS from its existing proprietary system to a net centric service oriented architecture. This modernization effort, implemented in Block 10.2, will deliver a net centric DCGS capability for the Air Force. Block 10.2 spirals the necessary technologies and tools into its architecture to provide increased capabilities and meet emerging and urgent user operational needs. These spirals will also integrate commercial and government fact-of-life version upgrades to provide current technologies and achieve necessary application and services. The next series of upgrades will meet the operational need to integrate new and/or improved sensor capabilities and enhance interoperability by migrating to a service oriented architecture and improving data sharing ability in compliance with DoD direction.

AF DCGS will continue to modernize its network management and interface capabilities by upgrading and migrating its network to a standardized interface configuration which is easy to expand and adapt to new technologies while growing capacity requirements. Efforts will also focus on network management systems and the ability to manage critical bandwidths to meet operational surges and distributed ops requirements.

The DCGS-I Testbed is a mobile test environment, which is used by Service and Agency program offices to test interoperability interfaces with new sensors, applications, and net centric operations. This testbed also supports the integration and testing of DoD DCGS components prior to introduction into the operational environment. Upgrades to the DCGS-I Testbed will ensure it maintains currency with existing interface standards.

AF DCGS participates in the development, testing, and implementation of international standards (to include NATO standardization agreements) to ensure joint, allied, and coalition interoperability.

AF DCGS is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Develop and integrate Block 10.2 into AF DCGS <i>FY 2009 Accomplishments:</i> In FY 2009: Completed Block 10.2 upgrades...provided required tools for AF DCGS support to the JTF Commander and below.	37.255	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208F: <i>Distributed Common Ground Systems</i>	PROJECT 674826: <i>Common Imagery Ground / Surface Systems</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A					
MAJOR THRUST: Continue to integrate commercial imagery capability into AF DCGS. <i>FY 2009 Accomplishments:</i> In FY 2009: Continued commercial imagery integration. <i>FY 2010 Plans:</i> In FY 2010: Continue commercial imagery integration. <i>FY 2011 Base Plans:</i> In FY 2011: Continue commercial imagery integration. <i>FY 2011 OCO Plans:</i> IN FY 2011 OCO: N/A	2.962	2.900	2.900	0.000	2.900
Accomplishments/Planned Programs Subtotals	63.953	70.152	82.509	0.000	82.509

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0305208F: <i>Distributed Common Ground Systems (OPAF)</i>	221.032	381.805	271.015	71.350	342.365	310.210	177.998	165.065	318.671	0.000	0.000

D. Acquisition Strategy

The Air Force has changed the AF DCGS acquisition strategy from a single block upgrade to incremental modifications during sustainment integrating mature advanced technologies and multi-intelligence exploitation tools while meeting emerging operational requirements and integrating new/upgraded sensors.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208F: <i>Distributed Common Ground Systems</i>	PROJECT 674826: <i>Common Imagery Ground / Surface Systems</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305208F: <i>Distributed Common Ground Systems</i>				PROJECT 674826: <i>Common Imagery Ground / Surface Systems</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Block 10.2 Spiral Upgrades	C/Various	Raytheon Garland, TX, Lockheed Martin: Goodyear, AZ, L3...	37.255	0.000		0.000		0.000		0.000	0.000	37.255	336.473
Modernization/ modification efforts and integration of new sensors and operational capabilities	C/Various	Various Various	5.974	50.208	Oct 2009	63.351	Oct 2010	0.000		63.351	Continuing	Continuing	Continuing
Network Communications Upgrade	C/Various	Raytheon Garland, TX, Lockheed Martin: Goodyear, AZ	3.807	2.400	May 2010	2.500		0.000		2.500	Continuing	Continuing	Continuing
DCGS IPT for USD(I)	C/Various	Science Applications Int'l Mclean, VA	2.421	2.888	Mar 2010	2.644	Mar 2011	0.000		2.644	Continuing	Continuing	Continuing
Testbed Modernization and Licenses	C/Various	Northrop Grumman Baltimore, MD, Raytheon: Garland, TX, L3: Good...	3.895	3.956	Mar 2010	4.014	Mar 2011	0.000		4.014	Continuing	Continuing	Continuing
DIB Management, Migration & Interoperability	C/Various	Raytheon Garland, TX, Integrity Applications: Washingto...	7.639	7.800	Feb 2010	7.100	Feb 2011	0.000		7.100	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208F: <i>Distributed Common Ground Systems</i>	PROJECT 674826: <i>Common Imagery Ground / Surface Systems</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Commercial Satellite Imagery	C/Various	AR Gov't Systems Group Thousand Oaks, CA	2.962	2.900	Jan 2010	2.900	Jan 2011	0.000		2.900	0.000	8.762	0.000
Subtotal			63.953	70.152		82.509		0.000		82.509			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	63.953	70.152	82.509	0.000	82.509			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305208F: *Distributed Common Ground Systems*

PROJECT

674826: *Common Imagery Ground / Surface Systems*



AF DCGS Program Element Schedule

Program	FY09				FY10				FY11				FY12				FY13				FY14				FY15			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Block 10.1 IMINT Bulk Releases																												
SIGINT Releases																												
Block 10.2																												
Test Activities																												
Site Fieldings (DGS-1,2,4 & 5 + ANG)																												
AF DCGS Modernization																												
Network Comm.																												
DCGS Integration Backbone (DIB)																												
DCGS-I Testbed																												
Commercial Satellite Imagery																												

◆ Completed Test Event ▲ Completed Fielding
◇ Scheduled Test Event △ Scheduled Fielding

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208F: <i>Distributed Common Ground Systems</i>	PROJECT 674826: <i>Common Imagery Ground / Surface Systems</i>
--	---	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Block 10.2 Developmental and Operational Testing and Site Fielding	1	2009	3	2010
AF DCGS Modernization: Emerging sensor integration and Combat Support modifications	1	2009	4	2011
Network Communications upgrades	1	2009	4	2011
DIB Version Release (1.3)	2	2009	2	2009
DIB Version Release (2.0)	3	2010	3	2010

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305208F: <i>Distributed Common Ground Systems</i>				PROJECT 675265: <i>Common Imagery Processor (CIP)</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675265: <i>Common Imagery Processor (CIP)</i>	11.298	12.252	10.889	0.000	10.889	10.884	10.788	10.951	11.112	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification											
The Common Imagery Processor (CIP) is a major interoperability initiative to develop a common sensor processing element within DCGS-Imagery architecture. The function of the CIP is to accept airborne imagery data, process it into an exploitable image, and output the image to other elements within DCGS-I. Efforts are underway to augment the CIP baseline to process data from upgraded/new sensors.											
B. Accomplishments/Planned Program (\$ in Millions)											
							FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue to develop the CIP to keep pace with growing sensor baseline. (Baseline includes Global Hawk, F/A-18, and U-2 sensors). <i>FY 2009 Accomplishments:</i> In FY 2009: Continued to evolve the CIP and its associated architecture to keep pace with growing sensor baseline to include new and upgraded sensors. Continued to investigate and implement advanced processing tools. <i>FY 2010 Plans:</i> In FY 2010: Continue to evolve the CIP and its associated architecture to keep pace with growing sensor baseline to include new and upgraded sensors. Continue to investigate and implement advanced processing tools.							11.298	12.252	10.889	0.000	10.889

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208F: <i>Distributed Common Ground Systems</i>	PROJECT 675265: <i>Common Imagery Processor (CIP)</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Continue to evolve the CIP and its associated architecture to keep pace with growing sensor baseline to include new and upgraded sensors. Continue to investigate and implement advanced processing tools.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>					
Accomplishments/Planned Programs Subtotals	11.298	12.252	10.889	0.000	10.889

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0305308F: <i>Distributed Common Ground System (OPAF)</i>	2.947	3.051	3.200	0.000	3.200	3.225	3.300	3.399	3.501	0.000	0.000

D. Acquisition Strategy

For the CIP, the Air Force uses an evolutionary acquisition approach with blocks (increments) and spirals to develop, field, and upgrade the system and structure contracts for the improved capabilities through full and open competition to the maximum extent possible.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208F: <i>Distributed Common Ground Systems</i>	PROJECT 675265: <i>Common Imagery Processor (CIP)</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CIP Software Development	C/CPFF	Northrop Grumman Baltimore MD	10.798	11.752	Dec 2010	10.389	Dec 2011	0.000		10.389	Continuing	Continuing	Continuing
Subtotal			10.798	11.752		10.389		0.000		10.389			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
303 Aeronautical Systems Wing (AESW)	C/Various	303 AESW Wright-Patterson AFB, OH	0.500	0.500		0.500		0.000		0.500	Continuing	Continuing	Continuing
Subtotal			0.500	0.500		0.500		0.000		0.500			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	11.298	12.252	10.889	0.000	10.889			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208F: <i>Distributed Common Ground Systems</i>	PROJECT 675265: <i>Common Imagery Processor (CIP)</i>
--	---	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305208F: *Distributed Common Ground Systems*

PROJECT

675265: *Common Imagery Processor (CIP)*



CIP Program Schedule

	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	
CIP Software Baseline Release	▲ 7.2	▲ 8.0 ▲ 8.1	▲	▲	▲	▲	▲	▲	▲
Sensors	Evolutionary Development								
Processors	Evolutionary Development								
Standards	Evolutionary Development								
Architecture	Evolutionary Development								

PB11 R-Docs

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208F: <i>Distributed Common Ground Systems</i>	PROJECT 675265: <i>Common Imagery Processor (CIP)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
CIP 7.2 Software Release	1	2009	1	2009
CIP 8.0 Software Release	1	2010	1	2010
CIP 8.1 Software Release	3	2010	3	2010
CIP Software Release FY11	1	2011	1	2011
CIP Software Release FY11 (1)	3	2011	3	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219F: <i>PREDATOR DEVELOPMENT/FIELDING</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	38.605	35.160	28.913	0.000	28.913	12.864	7.273	4.816	0.811	Continuing	Continuing
675143: <i>Predator</i>	38.605	35.160	28.913	0.000	28.913	12.864	7.273	4.816	0.811	Continuing	Continuing

Note

FY 2009 funding totals include \$12.4M in Congressional Adds.
 FY 2009 funding totals include \$1.7M included as part of the 2009 Omnibus reprogramming action (IR 09-26).
 FY 2010 funding totals include \$5.675M in Congressional Adds and \$11.4M appropriated for Overseas Contingency Operations.

A. Mission Description and Budget Item Justification

The basic MQ-1 system consists of the aircraft, a control station, communications equipment, support equipment, simulator and training devices, Readiness Spares Packages (RSP), technical data/training, and personnel required to operate, maintain, and sustain the system. This funding supports development and enhancements to the Predator weapon system to include: aircraft, Ground Control Stations, sensors, communication equipment, training systems and support elements. The system is designed to be modular and open-ended: mission-specific equipment is employed in a 'plug-and-play' mission kit concept allowing specific aircraft and control station configurations to be tailored to fit mission needs.

The MQ-1 aircraft is a single-engine, propeller-driven, remotely piloted aircraft (formerly called unmanned aircraft vehicle, UAV) designed to operate over-the-horizon for long endurance sorties. The aircraft is designed to provide real-time Intelligence, Surveillance, Reconnaissance, and Target Acquisition (ISR TA), and attack capability to aggressively prosecute Time Sensitive Targets (TSTs). The MQ-1 operates primarily at medium altitudes, integrating with joint aerospace, ground, and maritime forces as well as coalition and Allied forces, to execute combatant commander priority missions. The aircraft carries a Multi-spectral Targeting System (MTS) (a sensor turret that incorporates electro-optical (EO), Infra-Red (IR), laser designator, and IR illuminator) capable of transmitting real-time motion imagery throughout the operational theater. The program plans to develop a capability for Mode S and develop and incorporate encryption for its data links. Major changes will be classified as distinct blocks or Mission Design Series (MDS) updates. Activities also include studies and analysis to support both current program planning and execution and future program planning. The program will take steps to integrate a high-definition (HD) turret and transmit HD video. The aircraft is configured to carry Hellfire laser-guided missiles.

The Ground Control Station (GCS) functions as the aircraft cockpit and can control the aircraft either within line-of-sight (LOS) or beyond LOS (BLOS) via a combination of satellite relay and terrestrial communications. The GCS is either mobile to support forward operating locations or fixed at a facility to support Remote Split Operations (RSO). The GCS has the capability to perform mission planning; provide a means for manual control; allow control of multiple aircraft and payloads; allow

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219F: <i>PREDATOR DEVELOPMENT/FIELDING</i>
--	---

personnel to launch, recover, and monitor aircraft, payloads, and system communications status; secure data links to receive payload sensor data and command links; monitor threats to the aircraft; display common operation picture; and provide support functions. Additionally, GCS allows for servicing, systems checks, maintaining, launching, and recovering aircraft under LOS control for hand-off to a mobile or fixed facility GCS. The GCS will continue to evolve and upgrade its capabilities to keep pace with MQ-1 aircraft capabilities and the missions they perform.

This program is budget activity 7, Operational Systems Development, because it involves Air Force R&D to field a highly capable operational system and provide essential operational capabilities.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	36.905	18.101	0.000	0.000	0.000
Current President's Budget	38.605	35.160	28.913	0.000	28.913
Total Adjustments	1.700	17.059	28.913	0.000	28.913
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		17.075			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	-0.016			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	1.700	0.000	28.913	0.000	28.913

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 675143: *Predator*

- Congressional Add: *MQ-9 Reaper Tactical Reconnaissance Improvement*
- Congressional Add: *Sense and Avoid for Predator*
- Congressional Add: *Center for Defense UAV Education*
- Congressional Add: *Predator Mission Aircrew Training System (PMATS)*
- Congressional Add: *Predator C*

	<u>FY 2009</u>	<u>FY 2010</u>
	0.000	10.000
	5.984	3.200
	3.989	0.000
	2.393	0.000
	0.000	1.200
	12.366	14.400

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219F: <i>PREDATOR DEVELOPMENT/FIELDING</i>
--	---

Congressional Add Details (\$ in Millions, and Includes General Reductions)

	FY 2009	FY 2010
Congressional Add Subtotals for Project: 675143		
Congressional Add Totals for all Projects	12.366	14.400

Change Summary Explanation

FY 2009 \$12.4M Congressional increase includes: \$6.0M for sense and avoid work, \$4.0M for Center for UAV Excellence, and \$2.4M for PMATS upgrade.
 FY 2009 funding totals include \$1.7M included as part of the 2009 Omnibus reprogramming action (IR 09-26).
 FY 2010 funding totals include \$5.675M in Congressional Adds and \$11.4M appropriated for Overseas Contingency Operations.
 FY 2011 funding added to complete critical improvements to keep aircraft viable beyond FYDP.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219F: <i>PREDATOR DEVELOPMENT/ FIELDING</i>	PROJECT 675143: <i>Predator</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675143: <i>Predator</i>	38.605	35.160	28.913	0.000	28.913	12.864	7.273	4.816	0.811	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

FY 2009 funding totals include \$12.4M in Congressional Adds.
 FY 2009 funding totals include \$1.7M included as part of the 2009 Omnibus reprogramming action (IR 09-26).
 FY 2010 funding totals include \$5.675M in Congressional Adds and \$11.4M appropriated for Overseas Contingency Operations.

A. Mission Description and Budget Item Justification

The basic MQ-1/MQ-9 system consists of the aircraft, a control station, and the communications support equipment and personnel required to operate, maintain, and sustain the system. The system is designed to be modular and open-ended: mission-specific equipment is employed in a 'plug-and-play' mission kit concept allowing specific aircraft and control station configurations to be tailored to fit mission needs.

The MQ-1 Predator aircraft is a single-engine, propeller-driven, remotely piloted aircraft designed to operate over-the-horizon at medium altitude for long endurance sorties. The aircraft is designed to provide real-time Intelligence, Surveillance, Reconnaissance and Target Acquisition (ISR TA) and attack roles to aggressively prosecute Time Sensitive Targets (TST). The MQ-1 will operate primarily at medium altitudes, integrating with joint aerospace, ground, and maritime forces as well as coalition and Allied forces, to execute combatant commander priority missions. The aircraft carries a Multi-spectral Targeting System (MTS) (a sensor turret that incorporates electro-optical (EO), Infra-Red (IR), laser designator/range-finder, and IR illuminator) capable of transmitting real-time motion imagery throughout the operational theater. Additionally the aircraft is multi-configurable to carry either a synthetic aperture radar (SAR) or Hellfire laser-guided missiles. The MQ-1 aircraft will continue to evolve and upgrade the MQ-1's capabilities to satisfy new requirements and address reliability and maintainability (R&M) issues as they arise.

The MQ-9 Predator B aircraft is a single-engine, turbo-prop remotely piloted aircraft designed to operate over-the-horizon at medium-to-high altitude for long endurance sorties. The aircraft will be designed primarily to prosecute critical emerging TSTs as a radar-based attack asset with organic hard-kill capability (hunter-killer) and also perform ISR TA as a secondary role. In the hunter killer role, the aircraft will employ fused multi-spectral sensors to automatically find, fix, and track ground targets (Automatic Target Cueing (ATC)) and assess post-strike results. The MQ-9 is in continuing development. Flight characterization evaluation of the original off-the-shelf, prototype aircraft is complete. The next step will be to develop and test a 'baseline' capable system and includes both a risk reduction phase and a System Development & Demonstration (SDD) phase. Risk reduction started in FY03 and includes system design, drawings, specifications, and MIL-STD-1760 efforts. The SDD phase begins in FY04 and includes developing and testing the MQ-9's baseline capability. The baseline capability will include increasing the aircraft's gross

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219F: <i>PREDATOR DEVELOPMENT/ FIELDING</i>	PROJECT 675143: <i>Predator</i>
--	--	---

take-off weight; enhancing aircraft systems to include integrated redundant avionics, ice detection capability, navigation system upgrades, electrical system upgrades, secure data links, sensor/stores management computer, MIL-STD-1760 advanced weapons data bus, advanced sensor and weapons payloads, and improved human-machine interface; integrating standard 'precision' weapons (GBU-12/38); hardware and software upgrades to the GCS for MQ-9 operations; completing airworthiness certification and accreditation; and producing applicable training devices that emulate aircraft capabilities. Subsequent block upgrades will continue to evolve the MQ-9's capabilities to satisfy new requirements and address R&M issues as they arise.

Approximately 15 Predator B aircraft will be purchased prior to completion of SDD due to Congressional and OSD funding adds. To maintain a basic operational capability, these aircraft will require reliability/maintainability and P3I development to keep them viable. Much of this development will be common to MQ-1 R&M and P3I development.

The Ground Control Station (GCS) functions as the aircraft cockpit and can control the aircraft either within line-of-sight (LOS) or beyond LOS (BLOS) via a combination of satellite relay and terrestrial communications. The GCS is either mobile to support forward operating locations or at a fixed facility to support Remote Split Operations (RSO). A mobile GCS is containerized for deployability while a fixed facility GCS consists of similar capability in a permanent facility. The GCS has the capability to perform mission planning; provide a means for manual and/or autonomous control of multiple aircraft and payloads; allow personnel to launch, recover, and monitor aircraft, payloads, and system communications status; secure data links to receive payload sensor data and command links; monitor threats to the aircraft; display common operation picture; and provide support functions. Additionally, a Launch and Recover GCS (LRGCS) allows for servicing, systems checks, maintaining, launching, and recovering aircraft under LOS control for hand off to a mobile or fixed GCS. The GCS will continue to evolve and upgrade its capabilities to fully support the MQ-1 and MQ-9 aircraft and the missions they perform.

This program is budget activity 7, Operational Systems Development, because it involves Air Force R&D to field a highly capable operational system and provide essential operational capabilities.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: MQ-1 Pre-planned Product Improvement. <i>FY 2009 Accomplishments:</i> In FY 2009: Developed upgrades/integration of aircraft, sensors, data links (encryption and tactical common data link), training devices, ground station, weapons; plus experimentation	20.565	18.328	20.936	0.000	20.936

UNCLASSIFIED

R-1 Line Item #209

Page 5 of 13

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219F: <i>PREDATOR DEVELOPMENT/ FIELDING</i>	PROJECT 675143: <i>Predator</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> In FY 2011: Continue to improve EO/IR sensor <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A						
MAJOR THRUST: Vortex encryption <i>FY 2009 Accomplishments:</i> In FY 2009: Began development of Vortex encryption (Omnibus) <i>FY 2010 Plans:</i> In FY 2010: Continue development of Vortex encryption (OCO) <i>FY 2011 Base Plans:</i> In FY 2011: N/A <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.		1.700	1.400	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals		26.239	20.760	28.913	0.000	28.913
		FY 2009	FY 2010			
Congressional Add: MQ-9 Reaper Tactical Reconnaissance Improvement <i>FY 2009 Accomplishments:</i> In FY 2009: N/A		0.000	10.000			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219F: <i>PREDATOR DEVELOPMENT/ FIELDING</i>	PROJECT 675143: <i>Predator</i>
B. Accomplishments/Planned Program (\$ in Millions)		
	FY 2009	FY 2010
<i>FY 2010 Plans:</i> In FY 2010: Develop MQ-9 Reaper Tactical Reconnaissance Improvement (Added to Predator program in OCO)		
Congressional Add: Sense and Avoid for Predator <i>FY 2009 Accomplishments:</i> In FY 2009: Continued development of Sense and Avoid capability for Predator <i>FY 2010 Plans:</i> In FY 2010: Continues development of Sense and Avoid capability for Predator	5.984	3.200
Congressional Add: Center for Defense UAV Education <i>FY 2009 Accomplishments:</i> In FY 2009: Funded Center for Defense UAV Education at University of North Dakota <i>FY 2010 Plans:</i> In FY 2010: N/A	3.989	0.000
Congressional Add: Predator Mission Aircrew Training System (PMATS) <i>FY 2009 Accomplishments:</i> In FY 2009: Upgraded Predator Mission Aircrew Training System <i>FY 2010 Plans:</i> In FY 2010: N/A	2.393	0.000
	0.000	1.200

UNCLASSIFIED

R-1 Line Item #209

Page 8 of 13

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219F: <i>PREDATOR DEVELOPMENT/ FIELDING</i>	PROJECT 675143: <i>Predator</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
Congressional Add: Predator C <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Develops Predator C		
Congressional Adds Subtotals	12.366	14.400

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0305219F: <i>MQ-1A Predator UAV, (APAF)</i>	422.928	198.889	245.457	0.000	245.457	123.004	99.690	75.052	44.834	0.000	0.000
• PE 0305219F (1): <i>MQ-1A Predator UAV, (OPAF)</i>	2.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The MQ-1 Predator system will be acquired via sole-source acquisition strategies with General Atomics-ASI and Raytheon as the prime contractors.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219F: <i>PREDATOR DEVELOPMENT/ FIELDING</i>	PROJECT 675143: <i>Predator</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MQ-1/MQ-9 Development	Various/ Various	General Atomics-ASI Rancho Bernardo CA	374.995	18.328	Jan 2010	20.809	Jan 2011	0.000		20.809	Continuing	Continuing	Continuing
EO/IR	Various/ Various	Raytheon McKinney TX	4.209	0.000		7.228	Jan 2011	0.000		7.228	Continuing	Continuing	Continuing
Congressional Adds	Various/ Various	Various Various	9.974	14.400		0.000		0.000		0.000	0.000	24.374	0.000
PMATS GWOT Supplemental	SS/CPIF	L3 Comm Salt Lake City	2.393	0.000		0.000		0.000		0.000	0.000	2.393	0.000
Vortex	Various/ Various	Various Various	1.700	1.400	Jan 2010	0.000		0.000		0.000	0.000	3.100	0.000
Subtotal			393.271	34.128		28.037		0.000		28.037			

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development and Operational Test Support	TBD/TBD	TBD TBD	1.083	1.032	Mar 2010	0.876	Jan 2011	0.000		0.876	Continuing	Continuing	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219F: <i>PREDATOR DEVELOPMENT/ FIELDING</i>	PROJECT 675143: <i>Predator</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total		Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date			
Subtotal			1.083	1.032		0.876		0.000		0.876			0.000	

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	394.354	35.160		28.913		0.000		28.913			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305219F: PREDATOR DEVELOPMENT/
FIELDING

PROJECT

675143: Predator

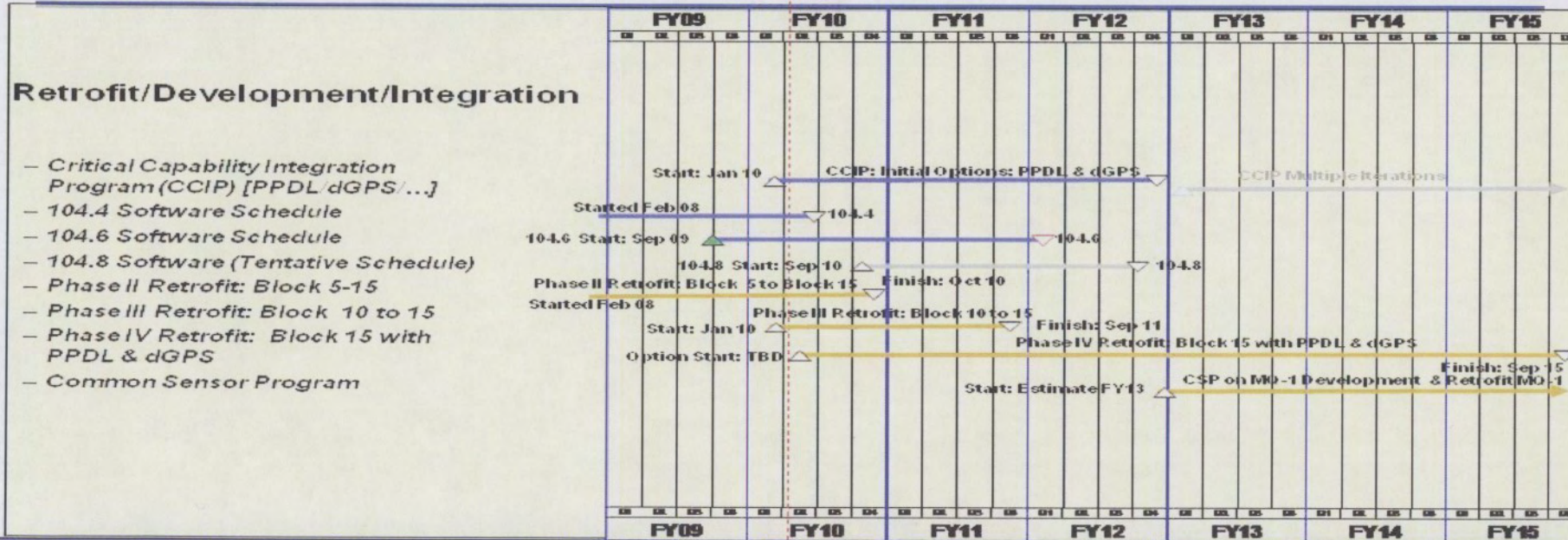


MQ-1 Predator Program Schedule



U.S. AIR FORCE

Time Now



A/C: Aircraft GCS: Ground Control Station PDDL: Predator Primary Data Link dGPS: differential Global Positioning System

CCIP: Critical Component Integration Program CSP: Common Sensor Program

▲ Contract Award ◻ Planned ■ Retrofit / Modifications Activities
■ Development/Integration Activities

Integrity - Service - Excellence

UNCLASSIFIED

R-1 Line Item #209

Page 12 of 13

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305219F: *PREDATOR DEVELOPMENT/
FIELDING*

PROJECT

675143: *Predator*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Critical Capability Integration Program Development	2	2010	4	2011
Software Version 104.4 Development	1	2009	3	2010
Software Version 104.6 Development	4	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK DEVELOPMENT/FIELDING</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	279.164	317.268	251.318	0.000	251.318	238.447	200.106	173.336	191.751	Continuing	Continuing
675144: <i>Global Hawk</i>	237.064	245.367	221.591	0.000	221.591	219.574	186.635	154.295	156.940	Continuing	Continuing
67RTIP: <i>MP-RTIP</i>	42.100	71.901	27.227	0.000	27.227	11.373	11.771	12.141	12.511	0.000	0.000
676001: <i>WBCOMM</i>	0.000	0.000	2.500	0.000	2.500	7.500	1.700	6.900	22.300	0.000	0.000

Note

In FY 2009, Project Number 5131, Airframe efforts transferred to PE0305220F, Global Hawk Development/Fielding, Project Number RTIP, MP-RTIP, in order to continue development as a separate program since the originating MP-RTIP program was cancelled.

A. Mission Description and Budget Item Justification

The Global Hawk System provides high altitude, deep look, long endurance intelligence, surveillance, and reconnaissance (ISR) capability that compliments space and other airborne collectors during peacetime, crisis, and war-fighting scenarios.

This funding procures the highly capable Global Hawk System, which is comprised of aircraft, payloads, ground segment, and support segment. The aircraft is an autonomous, high altitude, long endurance, remotely piloted aircraft (RPA). The RQ-4A is an imagery-intelligence (IMINT) RPA designed to employ 2000 pounds of payload. The RQ-4A has one configuration known as the Block 10. The Block 10 employs an IMINT system comprised of a synthetic aperture radar (SAR) sensor and an electro-optical (EO) / infrared (IR) sensor. These three sensors are called the integrated sensor suite (ISS). The RQ-4B RPA is designed to employ 3000 pounds of payload and enable multi-intelligence (multi-INT) collecting. The RQ-4B has three configurations: Block 20, Block 30, and Block 40. The Block 20 will employ upgraded SAR and EO/IR sensors known as the Enhanced ISS (EISS) in an IMINT only configuration. The Block 30 will employ the same EISS sensors as the Block 20 and will also integrate a wide spectrum signals intelligence (SIGINT) sensor called the Airborne Signals Intelligence Program (ASIP) sensor used simultaneously to create a multi-INT platform. The Block 40 will only integrate the multi-platform radar technology insertion program (MP-RTIP) radar sensor. The user will ultimately determine the optimal mix of quantities and payloads for each aircraft configuration based on operational requirements. The ground station (GS) includes the mission control element (MCE) and the launch and recovery element (LRE). The support segment includes aerospace ground equipment, tech orders, spares, support equipment, and training to enable operation of the Global Hawk System.

The Global Hawk program went through a Title 10, Section 2433 review in 2006, due to a unit cost breach (informally known as Nunn-McCurdy breach). The Department certified the program to Congress on June 5th, 2006. As a result of the review, the Department directed a program restructure to slow development and

UNCLASSIFIED

R-1 Line Item #210

Page 1 of 26

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK DEVELOPMENT/FIELDING</i>	
<p>cap the low rate initial production (LRIP) at 5 per year to reduce risk. LRIP will remain at 5 per year or less until successful completion of the initial operational test and evaluation (IOT&E).</p> <p>When judged feasible and affordable, this program will participate in the development, testing, and implementation of international standards (to include NATO standardization agreements) to enhance joint, allied, and coalition interoperability.</p> <p>The MP-RTIP was established to develop a family of modular, scalable next generation sensors for multiple platforms to support network centric operations with integrated Command and Control Intelligence, Surveillance and Reconnaissance (C2ISR) capability.</p> <p>Future MP-RTIP studies/development insertion-- includes concept exploration, program definition/risk reduction, sensor technology insertion/development. Funds continued support improvement and implementation of C2ISR capabilities enabling the joint air and missile defense architecture joint decisive operations and the AEF Task Force CONOPS. Conducts limited risk reduction activities on Battle Management Command and Control (BMC2) Mission Execution and BMC2 Kill Chain, and MP-RTIP Wide Area Surveillance (WAS) Radar Hardware Verification.</p> <p>MP-RTIP will also support NATO Alliance Ground Surveillance (AGS) conceptual design and early development activities under the Global Hawk PE.</p> <p>Starting in FY 2011, studies are planned to develop integration and installation requirements in order to integrate a Wideband SATCOM terminal on Global Hawk.</p> <p>This program is budget activity 7, Operational Systems Development, because it utilizes Air Force R&D to develop a highly capable operational system.</p>		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK DEVELOPMENT/FIELDING</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	310.664	325.732	0.000	0.000	0.000
Current President's Budget	279.164	317.268	251.318	0.000	251.318
Total Adjustments	-31.500	-8.464	251.318	0.000	251.318
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	-31.500	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	-8.464	251.318	0.000	251.318

Change Summary Explanation

FY09: \$31.5M was reprogrammed to support Battlefield Airborne Communications Node (BACN) in FY09.

UNCLASSIFIED

R-1 Line Item #210

Page 3 of 26

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK</i> <i>DEVELOPMENT/FIELDING</i>	PROJECT 675144: <i>Global Hawk</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675144: <i>Global Hawk</i>	237.064	245.367	221.591	0.000	221.591	219.574	186.635	154.295	156.940	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Global Hawk System provides high altitude, deep look, long endurance intelligence, surveillance, and reconnaissance (ISR) capability that compliments space and other airborne collectors during peacetime, crisis, and war-fighting scenarios.

This funding procures the highly capable Global Hawk System, which is comprised of aircraft, payloads, ground segment, and support segment. The aircraft is an autonomous, high altitude, long endurance, remotely piloted aircraft (RPA). The RQ-4A is an imagery-intelligence (IMINT) RPA designed to employ 2000 pounds of payload. The RQ-4A has one configuration known as the Block 10. The Block 10 employs an IMINT system comprised of a synthetic aperture radar (SAR) sensor and an electro-optical (EO) / infrared (IR) sensor. These three sensors are called the integrated sensor suite (ISS). The RQ-4B RPA is designed to employ 3000 pounds of payload and enable multi-intelligence (multi-INT) collecting. The RQ-4B has three configurations: Block 20, Block 30, and Block 40. The Block 20 will employ upgraded SAR and EO/IR sensors known as the enhanced ISS (EISS) in an IMINT only configuration. The Block 30 will employ the same EISS sensors as the Block 20 and will also integrate a wide spectrum signals intelligence (SIGINT) sensor called the Airborne Signals Intelligence Program (ASIP) sensor used simultaneously to create a multi-INT platform. The Block 40 will only integrate the multi-platform radar technology insertion program (MP-RTIP) radar sensor. The user will ultimately determine the optimal mix of quantities and payloads for each aircraft configuration based on operational requirements. The ground station (GS) includes the mission control element (MCE) and the launch and recovery element (LRE). The support segment includes aerospace ground equipment, tech orders, spares, support equipment, and training to enable operation of the Global Hawk System.

The Global Hawk program went through a Title 10, Section 2433 review in 2006, due to a unit cost breach (informally known as Nunn-McCurdy breach). The Department certified the program to Congress on June 5th, 2006. As a result of the review, the Department directed a program restructure to slow development and cap the low rate initial production (LRIP) at 5 per year to reduce risk. LRIP will remain at 5 per year or less until successful completion of the initial operational test and evaluation (IOT&E).

This program is budget activity 7, Operational Systems Development, because it utilizes Air Force R&D to develop a highly capable operational system.

UNCLASSIFIED

R-1 Line Item #210

Page 4 of 26

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK</i> <i>DEVELOPMENT/FIELDING</i>		PROJECT 675144: <i>Global Hawk</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2009 Accomplishments:</i> In FY 2009: Mission Support <i>FY 2010 Plans:</i> In FY 2010: Mission Support <i>FY 2011 Base Plans:</i> In FY 2011: Mission Support <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A								
MAJOR THRUST: Battlefield Airborne Communication Node (BACN) <i>FY 2009 Accomplishments:</i> In FY 2009: BACN Joint Operational Urgent Need Integration and Installation <i>FY 2010 Plans:</i> In FY 2010: N/A <i>FY 2011 Base Plans:</i> In FY 2011: N/A <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A				8.500	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals				237.064	245.367	221.591	0.000	221.591

UNCLASSIFIED

R-1 Line Item #210

Page 7 of 26

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK</i> <i>DEVELOPMENT/FIELDING</i>	PROJECT 675144: <i>Global Hawk</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0304260F: <i>Airborne SIGINT Enterprise, (RDT&E)</i>	41.803	29.033	15.120	0.000	15.120	6.511	6.709	11.715	11.941	0.000	0.000
• PE 0305220F: <i>Global Hawk, (MILCON)</i>	0.000	31.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0305220F (1): <i>Global Hawk, (O&M)</i>	167.528	84.236	178.875	0.000	178.875	304.452	293.376	315.229	319.406	0.000	0.000
• PE 0305220F (2): <i>Global Hawk, (MILPERS)</i>	54.530	81.620	101.635	0.000	101.635	112.079	127.331	135.873	139.816	0.000	0.000
• PE 0305220F (3): <i>Global Hawk, (APAF)</i>	813.701	800.746	859.244	0.000	859.244	929.444	789.967	688.718	596.162	0.000	0.000
• PE 0305220F (4): <i>Global Hawk, (OPAF)</i>	0.297	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The Global Hawk program uses a modernization strategy to provide the warfighter with a near-term, combat capability with increased, time-phased capability improvements as technology and risk achieve satisfactory levels.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK</i> <i>DEVELOPMENT/FIELDING</i>	PROJECT 675144: <i>Global Hawk</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
EMD	SS/CPAF	Northrop Grumman Integrated Systems San Diego, CA	1,149.146	207.521	Feb 2010	197.970	Feb 2011	0.000		197.970	Continuing	Continuing	Continuing
Subtotal			1,149.146	207.521		197.970		0.000		197.970			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Contractor Program Support	SS/CPFF	Northrop Grumman Integrated Systems San Diego, CA	24.447	7.350	Feb 2010	5.562	Feb 2011	0.000		5.562	Continuing	Continuing	Continuing
Government Program Support	Various/ Various	Various Various	17.659	3.565	Dec 2009	2.795	Dec 2010	0.000		2.795	Continuing	Continuing	Continuing
Subtotal			42.106	10.915		8.357		0.000		8.357			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK</i> <i>DEVELOPMENT/FIELDING</i>	PROJECT 675144: <i>Global Hawk</i>
--	--	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Flight Test & Evaluation	PO	AFFTC Edwards, AFB	55.254	17.949	Jan 2010	10.600	Jan 2011	0.000		10.600	Continuing	Continuing	Continuing
Subtotal			55.254	17.949		10.600		0.000		10.600			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
A&AS	Various/ Various	Various Dayton, OH	41.618	6.526	Nov 2009	3.583	Nov 2010	0.000		3.583	Continuing	Continuing	Continuing
Other Government Organizations	Various/ Various	Various Dayton, OH	11.432	2.456	Jan 2009	1.081	Jan 2009	0.000		1.081	Continuing	Continuing	Continuing
Subtotal			53.050	8.982		4.664		0.000		4.664			

Remarks

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,299.556	245.367		221.591		0.000		221.591			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK</i> <i>DEVELOPMENT/FIELDING</i>	PROJECT 675144: <i>Global Hawk</i>
--	--	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

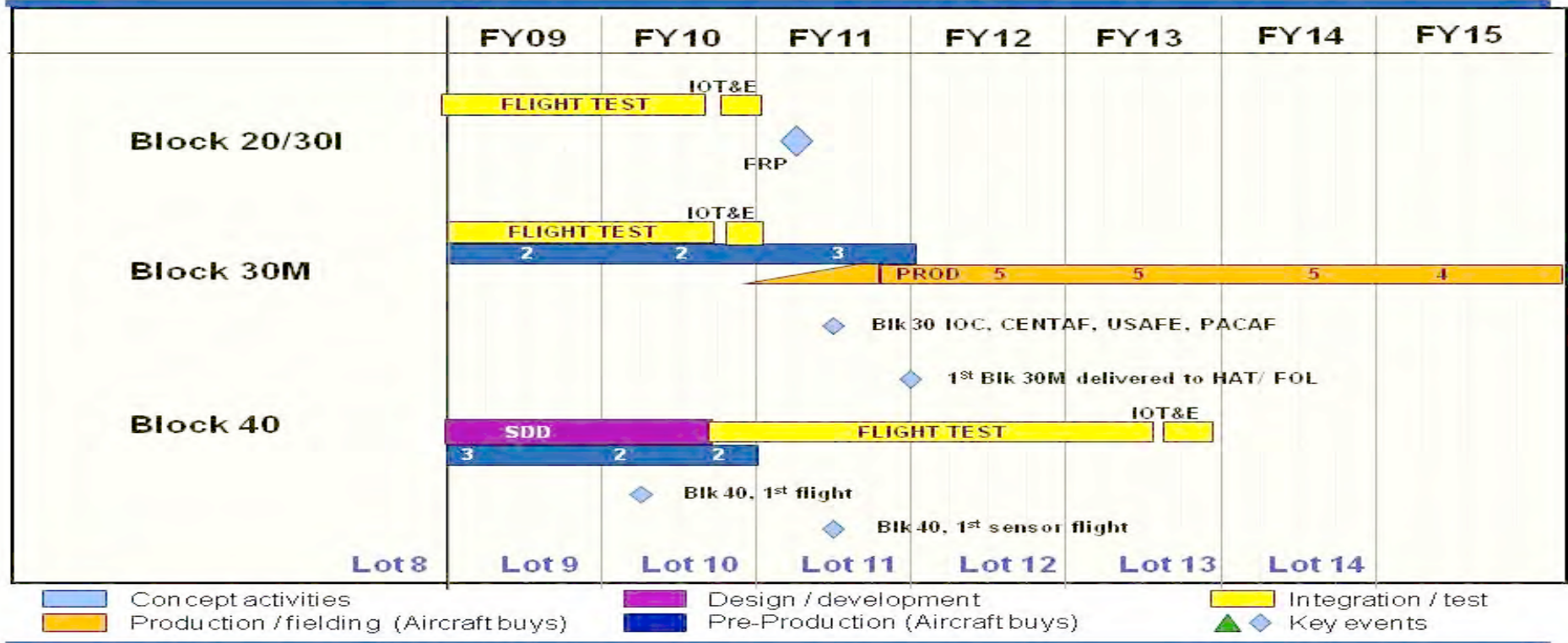
PE 0305220F: GLOBAL HAWK
DEVELOPMENT/FIELDING

PROJECT

675144: Global Hawk



Global Hawk Integrated Block Program Schedule



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK</i> <i>DEVELOPMENT/FIELDING</i>	PROJECT 675144: <i>Global Hawk</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Block 20/30 IOT&E	4	2010	4	2010
Block 30 Initial Operational Capability, PACAF	2	2011	2	2011
Block 30 Initial Operational Capability, USAFE	2	2011	2	2011
Block 30 Initial Operational Capability, CENTAF	2	2011	2	2011
Begin transition to Block 30M at Forward Operating Locations	4	2011	4	2011
First HAT Block 30	4	2011	4	2011
Block 40 First Flight	1	2010	1	2010
Block 40 First Sensor Flight	2	2011	2	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK</i> <i>DEVELOPMENT/FIELDING</i>	PROJECT 67RTIP: <i>MP-RTIP</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
67RTIP: <i>MP-RTIP</i>	42.100	71.901	27.227	0.000	27.227	11.373	11.771	12.141	12.511	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2009, Project Number 5131, Airframe efforts transferred to PE0305220F, Global Hawk Development/Fielding, Project Number RTIP, MP-RTIP, in order to continue development as a separate program since the originating MP-RTIP program was cancelled.

A. Mission Description and Budget Item Justification

The MP-RTIP sensor is designed to provide next generation capabilities to support network centric operations with integrated Command and Control Intelligence, Surveillance and Reconnaissance (C2ISR) capability.

The funding supports all MP-RTIP design, development, and integration onto the Global Hawk Block 40. Future MP-RTIP studies and development include maritime modes, airborne modes, electronic protection, and other advanced capabilities. The funding also improves and implements C2ISR capabilities enabling Air Expeditionary Force Task Force CONOPS. This effort also provides for funding of limited risk reduction activities on BMC2 Mission Execution and BMC2 Kill Chain. Other activities will include studies and analysis to support both program planning and execution and future program and system life cycle planning.

Global Hawk Block 40 carrying MP-RTIP will also support NATO AGS conceptual design and early development activities.

This program is budget activity 7, Operational Systems Development, because it utilizes Air Force R&D to develop a highly capable operational system.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: MP-RTIP sensor development for integration onto the Global Hawk platform	34.742	60.497	22.975	0.000	22.975

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK DEVELOPMENT/FIELDING</i>	PROJECT 67RTIP: <i>MP-RTIP</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A					
Accomplishments/Planned Programs Subtotals	42.100	71.901	27.227	0.000	27.227

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (3820): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The MP-RTIP program supports the acquisition of the Global Hawk Block 40 weapon system by providing sensor design and development for Global Hawk Block 40 platforms and sensor procurement.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK</i> <i>DEVELOPMENT/FIELDING</i>	PROJECT 67RTIP: <i>MP-RTIP</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MP-RTIP	SS/CPAF	Northrop Grumman Integrated Systems EI Segundo, CA	31.065	58.397	Nov 2009	21.766	Nov 2010	0.000		21.766	Continuing	Continuing	Continuing
Subtotal			31.065	58.397		21.766		0.000		21.766			

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
N/A	MIPR	Various Edwards, CA	3.677	2.100	Nov 2009	1.209	Nov 2010	0.000		1.209	Continuing	Continuing	Continuing
Subtotal			3.677	2.100		1.209		0.000		1.209			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK</i> <i>DEVELOPMENT/FIELDING</i>				PROJECT 67RTIP: <i>MP-RTIP</i>					

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
A&AS	TBD/TBD	Various Boston, MA	6.664	10.723	Nov 2009	3.857	Nov 2010	0.000		3.857	Continuing	Continuing	Continuing
Other Gov't Support	Various/ Various	Various Boston, MA	0.694	0.681	Nov 2009	0.395	Nov 2010	0.000		0.395	0.000	1.770	0.000
Subtotal			7.358	11.404		4.252		0.000		4.252			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	42.100	71.901		27.227		0.000		27.227			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

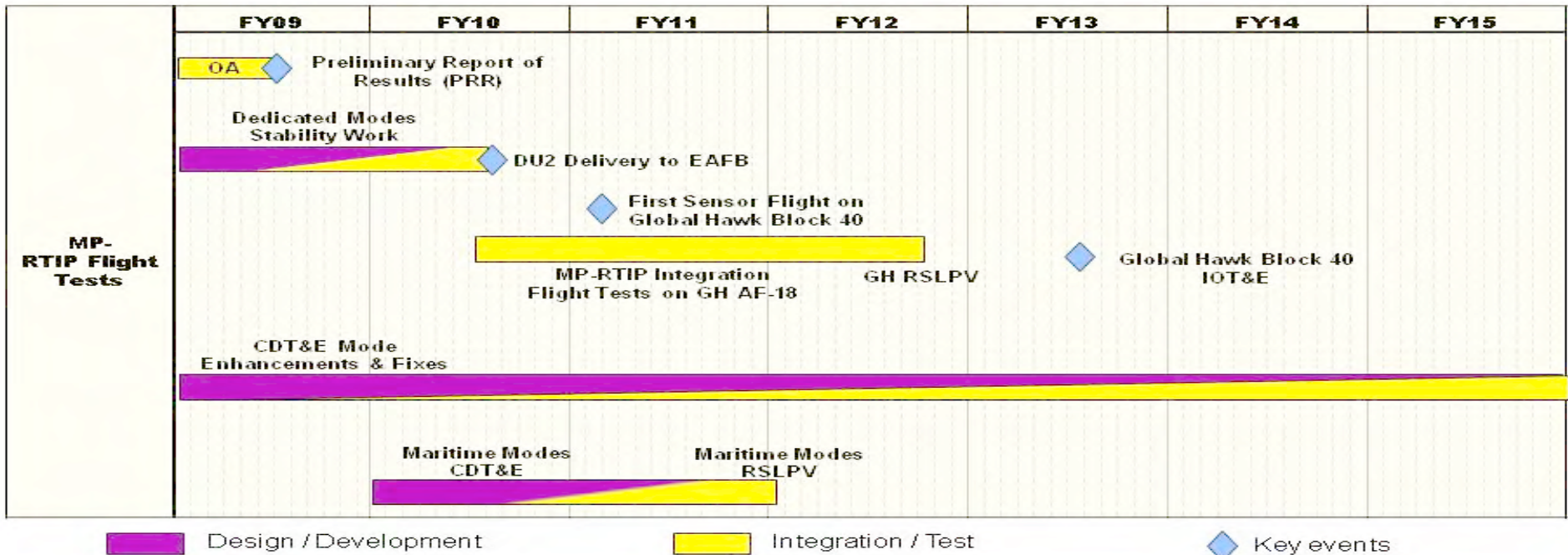
PE 0305220F: *GLOBAL HAWK*
 DEVELOPMENT/FIELDING

PROJECT

67RTIP: *MP-RTIP*



MP-RTIP Schedule



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK</i> <i>DEVELOPMENT/FIELDING</i>	PROJECT 67RTIP: <i>MP-RTIP</i>
--	--	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Operational Assessment	1	2009	2	2009
Preliminary Reports of Results (PRR)	2	2009	2	2009
MP-RTIP Integration on Global Hawk Block 40 Aircraft	3	2010	3	2011
CDT&E Additional Modes	1	2009	4	2011
RTIP First Sensor Flight on Global Hawk	1	2011	2	2011
MP-RTIP Integration Flight Test on GH AF-18	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK</i> <i>DEVELOPMENT/FIELDING</i>	PROJECT 676001: <i>WBCOMM</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
676001: <i>WBCOMM</i>	0.000	0.000	2.500	0.000	2.500	7.500	1.700	6.900	22.300	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This funding is to provide for the development and integration of Wideband SATCOM terminals onto the Global Hawk Platform.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Global Hawk Wideband SATCOM Terminals	0.000	0.000	2.500	0.000	2.500
<i>FY 2009 Accomplishments:</i> In FY 2009: N/A					
<i>FY 2010 Plans:</i> In FY 2010: N/A					
<i>FY 2011 Base Plans:</i> In FY 2011: To include requirements analysis, design and development and integration and test					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A					
Accomplishments/Planned Programs Subtotals	0.000	0.000	2.500	0.000	2.500

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK</i> <i>DEVELOPMENT/FIELDING</i>	PROJECT 676001: <i>WBCOMM</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (4030): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The Global Hawk program will use a modernization strategy to develop and integrate Wideband SATCOM Terminals onto the Global Hawk Platform to provide the warfighter required capability.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK</i> <i>DEVELOPMENT/FIELDING</i>	PROJECT 676001: <i>WBCOMM</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development and Integrate Wideband SATCOM terminals	TBD/TBD	TBD TBD	0.000	0.000		2.500	Jan 2011	0.000		2.500	0.000	2.500	0.000
Subtotal			0.000	0.000		2.500		0.000		2.500	0.000	2.500	0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
N/A	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220F: <i>GLOBAL HAWK</i> <i>DEVELOPMENT/FIELDING</i>	PROJECT 676001: <i>WBCOMM</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
N/A	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
N/A	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
	0.000	0.000		2.500		0.000		2.500	0.000	2.500	0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305220F: *GLOBAL HAWK
 DEVELOPMENT/FIELDING*

PROJECT

676001: *WBCOMM*



Global Hawk Wideband Terminal schedule

	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Global Hawk Wideband SATCOM Terminals				Reqs Anal/Review	Design/Development		Integration/Test

Concept activities

Design / development

Integration / test

PB 11 R-Docs

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305220F: *GLOBAL HAWK*
DEVELOPMENT/FIELDING

PROJECT

676001: *WBCOMM*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Begin Requirements Analysis	3	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305221F: <i>Network Centric Collaborative Targeting</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	8.783	8.160	7.267	6.100	13.367	7.372	7.559	7.671	7.781	Continuing	Continuing
675197: <i>Core Technology</i>	8.783	8.160	7.267	6.100	13.367	7.372	7.559	7.671	7.781	Continuing	Continuing

Note

FY 2011 funding totals include \$6.1M for the Overseas Contingency Operations (OCO) Supplemental Request to develop a Network Centric Collaborative Targeting (NCCT) Core Technology Ground Moving Target Indicator (GMTI) / Signals Intelligence (SIGINT) Correlator. A GMTI / SIGINT correlator for the NCCT fusion engine supports OCO real-time and forensic operations, accelerates High-Side (classified) message architecture to network OCO relevant sensor systems, and directly supports tactics, techniques and procedures (TTP) development for rapid operator use.

A. Mission Description and Budget Item Justification

Network Centric Collaborative Targeting (NCCT) is the Air Force program of record for net-centric collaborative intelligence, surveillance and reconnaissance (ISR) operations. NCCT is a networked application that uses machine-to-machine interfaces and Internet Protocol (IP) connectivity to horizontally integrate Battle Management (BM) / Command and Control (C2) / ISR assets and systems to provide timely detection, identification, and geo-location of time-sensitive and high priority targets to combatant commanders and their forces. NCCT develops and deploys the capability to automatically or manually cross-cue similar and dissimilar BM / C2 / ISR assets generating multi-source, multi-INT sensor-level data through coordinated sensor activity. This data is then rapidly correlated or fused and the results shared among the BM / C2 / ISR assets, systems and decision-making nodes. NCCT develops and refreshes software and hardware required for net-centric operations. NCCT supports Joint participant program offices with development and fielding of BM / C2 / ISR asset, system and decision-making node interfaces.

Core Technology develops the hardware and software to horizontally integrate Joint and Coalition dissimilar BM / C2 / ISR assets and systems to include, but is not limited to RC-135 RIVET JOINT, C-130 SENIOR SCOUT, EC-130H COMPASS CALL, E-8C Joint Surveillance and Target Attack Radar System (JSTARS), U-2 / ASIP / Distributive Common Ground System (DCGS), Falconer Air and Space Operations Center (AOC), and national systems. Core Technology includes, but is not limited to, network management software, operator interfaces, standard network messages and formats, correlation software and data rules of interaction, NCCT multi-level security hardware and software items, and platform specific Platform Interface Modules (PIMs). Core Technology supports the Systems Integration Lab (SIL) used to test NCCT development, modification and PIM integration.

This program is categorized as Budget Activity 7 because it provides for development of technologies in support of operational system development.

UNCLASSIFIED

R-1 Line Item #211

Page 1 of 9

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305221F: <i>Network Centric Collaborative Targeting</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	8.783	8.160	0.000	6.100	6.100
Current President's Budget	8.783	8.160	7.267	6.100	13.367
Total Adjustments	0.000	0.000	7.267	0.000	7.267
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	7.267	0.000	7.267

Change Summary Explanation

FY 2011 funding totals include \$6.1M for Overseas Contingency Operations (OCO) Supplemental Request to develop a Core Technology GMTI SIGINT Correlator.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305221F: <i>Network Centric Collaborative Targeting</i>				PROJECT 675197: <i>Core Technology</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost	
675197: <i>Core Technology</i>	8.783	8.160	7.267	6.100	13.367	7.372	7.559	7.671	7.781	Continuing	Continuing	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0			
Note In FY 2011 OCO the funding totals include \$6.1M for the development of a Core Technology GMTI SIGINT Correlator. A GMTI SIGINT Correlator will enhance on going efforts to address current GMTI operational needs.												
A. Mission Description and Budget Item Justification NCCT Core Technology develops the hardware and software to horizontally integrate Joint and Coalition dissimilar BM / C2 / ISR assets and systems to include, but is not limited to, RC-135 RIVET JOINT, C-130 SENIOR SCOUT, EC-130H COMPASS CALL, E-8C Joint Surveillance and Target Attack Radar System (JSTARS), U-2 / ASIP / Distributive Common Ground System (DCGS), Falconer Air and Space Operations Center (AOC), and national systems. NCCT Core Technology includes, but is not limited to, network management software, operator interfaces, standard network messages and formats, correlation software and data rules of interaction, NCCT multi-level security hardware and software items, and platform specific Platform Interface Modules (PIMs). Core technology supports the Systems Integration Lab (SIL) used to test NCCT development, modification and PIMs. This program is categorized as Budget Activity 7 because it provides for development of technologies in support of operational system development.												
B. Accomplishments/Planned Program (\$ in Millions)												
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total		
MAJOR THRUST: Accomplishments and planned efforts include development and update of NCCT Core Technology software; technical support to users, and management activities <i>FY 2009 Accomplishments:</i> In FY 2009: Continue development efforts						8.783	8.160	7.267	6.100	13.367		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305221F: <i>Network Centric Collaborative Targeting</i>	PROJECT 675197: <i>Core Technology</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Continue development efforts</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continue development efforts</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>					
Accomplishments/Planned Programs Subtotals	8.783	8.160	7.267	6.100	13.367

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0305221F: <i>NCCT, (O&M)</i>	7.266	19.763	15.140	0.000	15.140	6.735	6.176	6.849	6.616	0.000	0.000

D. Acquisition Strategy

The NCCT capability is maintained and baseline / incremental upgrades plus any quick reaction capabilities (QRC) developments are acquired through the 645th Aeronautical System Group (BIG SAFARI Program Office) in accordance with the BIG SAFARI Program Management Directive (PMD) and the BIG SAFARI Class Justification and Approval (J&A) document for acquisition of supplies and services using other than full and open competition criteria. The supplies and services procured by the 645th AESG under their J&A to satisfy National Security (FAR 6.302-6) or Unusual and Compelling Urgency (FAR 6.302-2) requirements are supported by the BIG SAFARI Life Cycle Management Plan (LCMP) across the full spectrum of system life cycle management from developmental engineering to system retirement ("cradle to grave" support). Due to the rapidly changing threat environment encountered during our prolonged commitment to Overseas Contingency Operations (OCO), the acquisition program manager has the authority to redirect funding as necessary to meet current stated and emerging Combatant Commander requirements.

645th Aeronautical Systems Group (645 AESG) at Wright Patterson AFB OH, manages the Cost Plus Fixed Fee contract used to develop the NCCT Core Technology. 645th AESG will provide NCCT software and common hardware to systems and platforms designated to field this ISR capability. Individual program management offices may contract directly with their prime contractors or through the 645th AESG for integration of this ISR capability on their respective systems and platforms

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305221F: <i>Network Centric Collaborative Targeting</i>	PROJECT 675197: <i>Core Technology</i>
(RC-135 RIVET JOINT, C-130 SENIOR SCOUT, EC-130 COMPASS CALL, AF DCGS, AOC, EP-3E, P-3C, Gorgon Stare / Wide Area Airborne Surveillance (WAAS), MC-12W Liberty Project Aircraft, Vehicle and Dismounted Exploitation Radar (VADER), national systems, and any potential systems in the future).		
E. Performance Metrics Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305221F: <i>Network Centric Collaborative Targeting</i>	PROJECT 675197: <i>Core Technology</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Core Technology	SS/CPFF	Software and hardware development L3 ComCept Rockwall TX	6.307	5.799	Jan 2010	5.431	Dec 2010	6.100	Dec 2010	11.531	Continuing	Continuing	Continuing
Subtotal			6.307	5.799		5.431		6.100		11.531			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Security Certification	Various/ Various	Technical support Various	1.276	1.181	Jan 2010	1.000	Dec 2010	0.000		1.000	Continuing	Continuing	Continuing
Subtotal			1.276	1.181		1.000		0.000		1.000			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305221F: <i>Network Centric Collaborative Targeting</i>	PROJECT 675197: <i>Core Technology</i>
--	---	--

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office	Various/ Various	Management activities 645 AESG Wright-Patterson AFB OH	1.200	1.180	Jan 2010	0.836	Dec 2010	0.000		0.836	Continuing	Continuing	Continuing
Subtotal			1.200	1.180		0.836		0.000		0.836			

Remarks

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.783	8.160		7.267		6.100		13.367			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

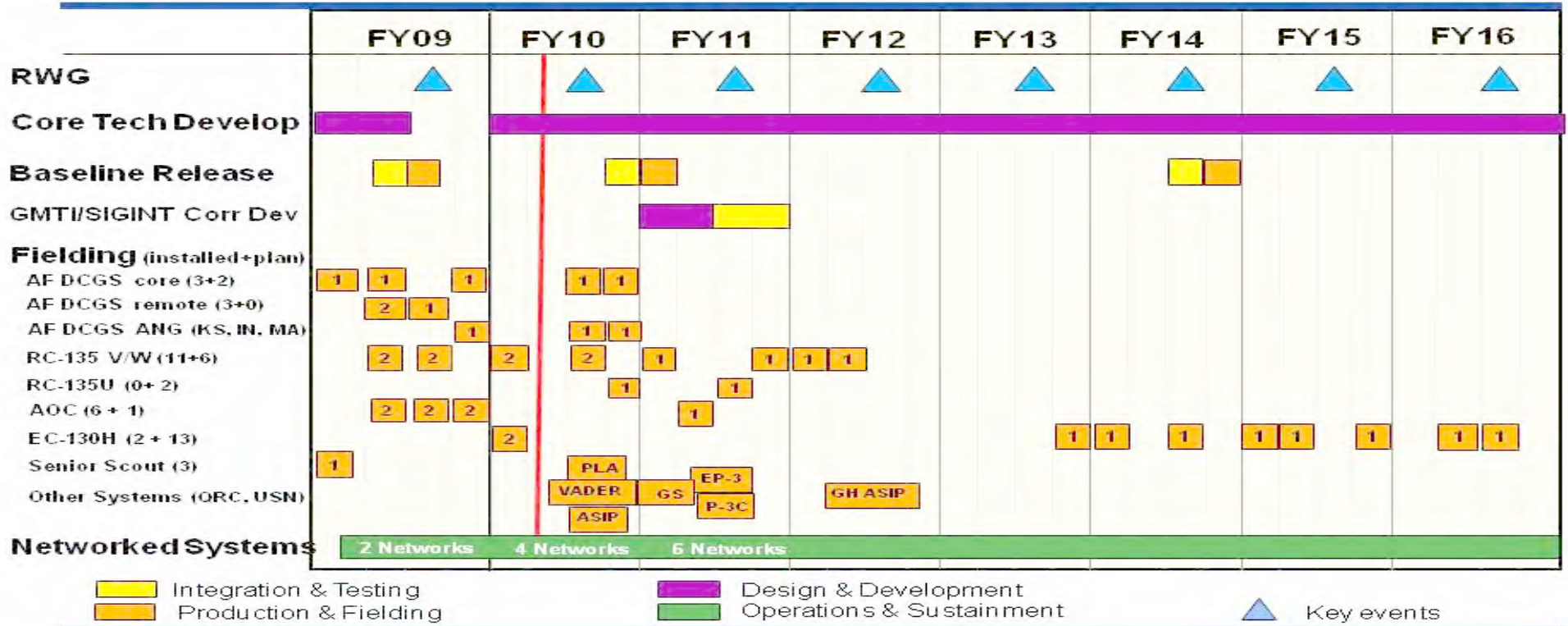
PE 0305221F: Network Centric Collaborative Targeting

PROJECT

675197: Core Technology



Network Centric Collaborative Targeting Schedule



UNCLASSIFIED

R-1 Line Item #211

Page 8 of 9

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305221F: <i>Network Centric Collaborative Targeting</i>	PROJECT 675197: <i>Core Technology</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Continued Core Technology Development and Refinement / Systems Integration Lab Operation	1	2009	4	2011
Network Controller and Operations Interface / Baseline Upgrade and Software Release	2	2009	1	2011
Platform Interface Module (PIM) Integration / Delivery	1	2009	4	2011
Core Technology Development and Integration of a GMTI SIGINT Correlator	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305265F: <i>GPS III Space Segment</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	379.046	423.466	828.171	0.000	828.171	445.207	758.161	635.655	570.340	Continuing	Continuing
67A019: <i>GPS IIIA</i>	379.046	423.466	446.304	0.000	446.304	328.153	321.364	194.825	200.073	Continuing	Continuing
67A020: <i>OCX</i>	0.000	0.000	381.867	0.000	381.867	117.054	436.797	440.830	370.267	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Navstar Global Positioning System (GPS) is a space based navigation system that fills validated Joint Service requirements for worldwide, accurate, common grid three dimensional positioning/navigation for military aircraft, ships, and ground personnel. The consistent accuracy, unaffected by location or weather and available in real time, significantly improves effectiveness of reconnaissance, weapons delivery, mine countermeasures and rapid deployment for all services. The system is composed of three segments: user equipment (funded under PE 0305164F), space, and a control network. The satellites broadcast high accuracy data using precisely synchronized signals which are received and processed by user equipment installed in military platforms. This equipment computes the platform position and velocity and provides steering vectors to target locations or navigation equipment installed in military platforms. The control segment provides daily updates to the navigation messages broadcast from the satellites to maintain system precision in three dimensions to 16 meters spherical error probable worldwide.

Additionally, GPS supports the United States Nuclear Detonation (NUDET) Detection System (NDS) mission, and provides strategic and tactical support to the following Department of Defense (DoD) missions: Joint Operations by providing capabilities for Positioning, Navigation, and Timing (PNT), Command, Control, Communications, and Intelligence, Special Operations; Military Operations in Urban Terrain, Defense-Wide Mission Support, Air Mobility, and Space Launch Orbital Support.

GPS IIIA is the next generation space vehicle supporting the Navstar GPS constellation. GPS IIIA space vehicles will deliver significant enhancements, including a new L1C (civil) Galileo-compatible signal, enhanced M-code Earth Coverage power, and a growth path to full warfighter capabilities. GPS III is in the preliminary design phase of development (Phase B). Funds in this PE will support research, development, test and evaluation of two GPS IIIA space vehicles and associated simulators through a structured systems engineering approach that matures and delivers space vehicles for launch. The program includes capability maturation and risk reduction efforts to address and mitigate program cost, schedule and technical challenges. Additionally the program also includes engineering studies and analyses, trade studies, system development, test and evaluation efforts, integrated logistics support products, on orbit support, and mission operations in support of civil applications necessary to support efforts to protect U.S. military and allies' use of GPS.

OCX is the next generation GPS control segment which includes, but is not limited to, advanced concept development, systems engineering and analysis, modernized control segment development, training simulators, Integrated Logistics Support (ILS) products, and developmental test resources. The OCX acquisition was established to 1) fly the GPS III satellites, 2) incorporate situational awareness to support Navwar and signal monitoring, and 3) enable mission capability upgrades

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305265F: <i>GPS III Space Segment</i>
--	---

to support warfighter Effects-Based Approach to Operations (EBAO). Funds will support engineering studies and analyses, architectural engineering studies, trade studies, technology needs forecasting, science and technology, technology development, systems engineering, system development, test and evaluation efforts, GPS enterprise integration and mission operations in support of upgrades and product improvements for military and civil applications necessary to support efforts to protect U.S. military and allies' use of GPS. Additionally, funds will ensure a disciplined Capability Insertion Program (CIP) plan to meet Joint Requirements Oversight Council (JROC) approved required capabilities.

This program is Budget Activity 7 - Operational System Development

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	392.276	815.095	0.000	0.000	0.000
Current President's Budget	379.046	423.466	828.171	0.000	828.171
Total Adjustments	-13.230	-391.629	828.171	0.000	828.171
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-13.230	0.000			
• Other Adjustments	0.000	-391.629	828.171	0.000	828.171

Change Summary Explanation

The FY2010 President's Budget submittal did not reflect FY2011 through FY2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

R-1 Line Item #212

Page 2 of 16

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305265F: <i>GPS III Space Segment</i>	PROJECT 67A019: <i>GPS IIIA</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
67A019: <i>GPS IIIA</i>	379.046	423.466	446.304	0.000	446.304	328.153	321.364	194.825	200.073	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This Budget Program Activity Code (BPAC) funds Research & Development (R&D) of the GPS IIIA next generation space vehicle (SV) supporting the Navstar GPS constellation. GPS IIIA SVs will deliver significant enhancements, including a new L1C (civil) Galileo-compatible signal, enhanced M-code Earth Coverage power, and a growth path to full warfighter capabilities. GPS IIIA is in the preliminary design phase of development (Phase B). Funds in this PE will support research, development, test and evaluation of two GPS IIIA space vehicles and associated simulators through a structured systems engineering approach that matures and delivers space vehicles for launch. The program includes capability maturation and risk reduction efforts to address and mitigate program cost, schedule and technical challenges. Additionally the program also includes engineering studies and analyses, trade studies, system development, test and evaluation efforts, integrated logistics support products, on orbit support, and mission operations in support of civil applications necessary to support efforts to protect U.S. military and allies' use of GPS.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Development, test and evaluation of two GPS IIIA space vehicles and associated simulators, capability maturation, risk reduction efforts, engineering studies and analyses, trade stud... <i>FY 2009 Accomplishments:</i> In FY 2009: GPS IIIA space vehicle development, System Engineering & Integration (SE&I), technical and program support, capability maturation and risk reduction. <i>FY 2010 Plans:</i> In FY 2010: GPS IIIA space vehicle development, SE&I, technical and program support, capability maturation and risk reduction.	379.046	423.466	446.304	0.000	446.304

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force							DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0305265F: <i>GPS III Space Segment</i>			PROJECT 67A019: <i>GPS IIIA</i>					
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
<p><i>FY 2011 Base Plans:</i> In FY 2011: GPS IIIA space vehicle development, SE&I, technical and program support, capability maturation and risk reduction.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>											
Accomplishments/Planned Programs Subtotals						379.046	423.466	446.304	0.000	446.304	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (4577): <i>Related Activities:</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0603423F: <i>OCX (RDT&E)</i>	289.702	289.620	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0305265F: <i>OCX (RDT&E)</i>	0.000	0.000	381.867	0.000	381.867	117.054	436.797	440.830	370.267	0.000	0.000
• PE 0305265F (1): <i>GPS III Space Segment (MPAF)</i>	0.000	0.000	122.490	0.000	122.490	680.879	496.942	790.366	700.931	0.000	0.000
• PE 0305265F (2): <i>OCX (OPAF)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.454	12.681	0.000	0.000
D. Acquisition Strategy											
<p>The Air Force is pursuing a "Block" approach to the GPS III next generation space segment to rapidly respond to warfighter capability requirements. The Block acquisition approach utilizes a disciplined systems engineering approach which focuses on mitigating cost and schedule risk through a lower risk incremental delivery of mature technologies. This approach focuses on mission success and on time delivery. The first block of GPS III satellites, GPS IIIA, will have GPS IIF capabilities plus up to a 10 dB increase in military (M-code) signal power, a new L1C civil signal compatible with the European Galileo and a satellite bus capable of supporting Block B and C capability upgrades.</p>											

UNCLASSIFIED

R-1 Line Item #212

Page 4 of 16

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305265F: <i>GPS III Space Segment</i>	PROJECT 67A019: <i>GPS IIIA</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305265F: <i>GPS III Space Segment</i>	PROJECT 67A019: <i>GPS IIIA</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Block IIIA Development	C/Various	Lockheed Martin Newtown, PA	332.150	373.140	Nov 2009	376.898	Nov 2010	0.000		376.898	Continuing	Continuing	0.000
SE&I	C/CPAF	SAIC Huntington Beach, CA	4.963	6.678	Nov 2009	5.100	Nov 2010	0.000		5.100	Continuing	Continuing	0.000
Modernization/SE & Technical Support	Various/Various	Various Various	17.657	16.110	Nov 2009	12.779	Nov 2010	0.000		12.779	Continuing	Continuing	0.000
Subtotal			354.770	395.928		394.777		0.000		394.777			0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Wing Support	Various/Various	Various Various	24.276	27.538	Nov 2009	51.527	Nov 2010	0.000		51.527	Continuing	Continuing	0.000
Subtotal			24.276	27.538		51.527		0.000		51.527			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305265F: <i>GPS III Space Segment</i>	PROJECT 67A019: <i>GPS IIIA</i>
--	---	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	379.046	423.466	446.304	0.000	446.304			0.000

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

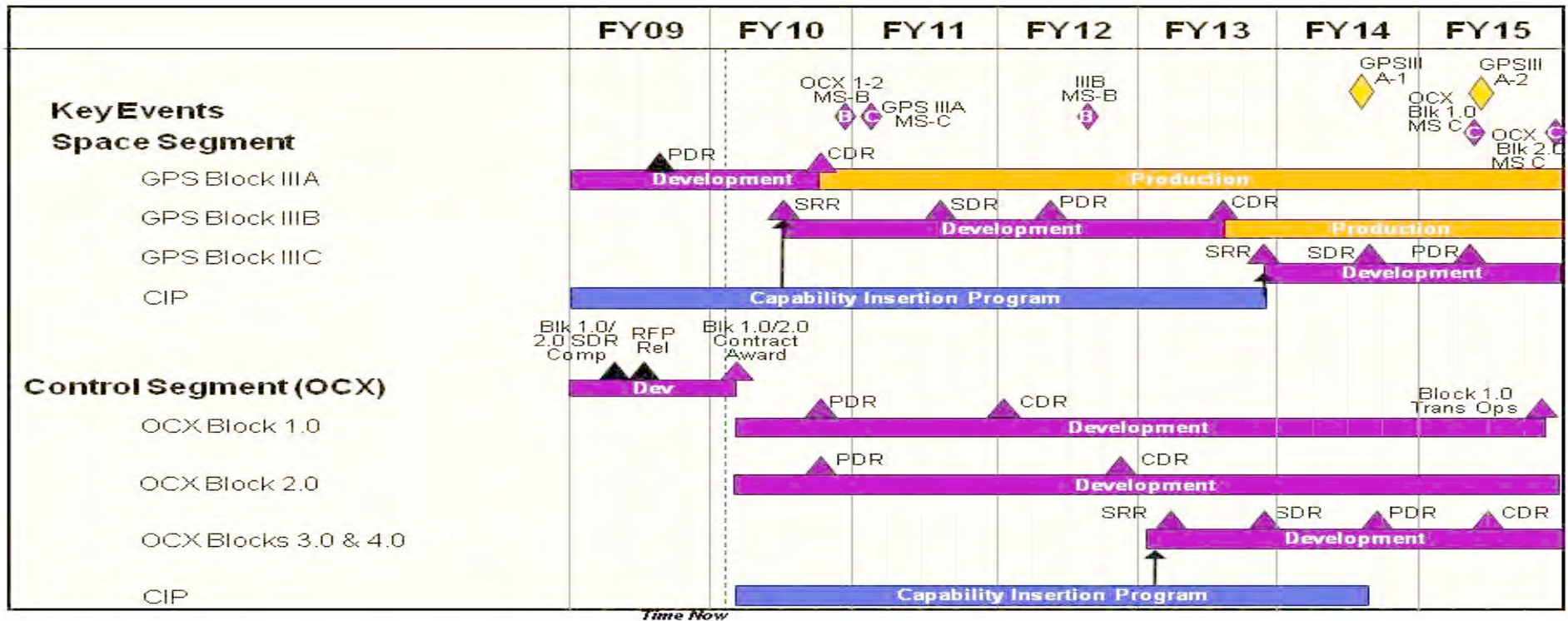
3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305265F: *GPS III Space Segment*

PROJECT

67A019: *GPS IIIA*



CDR – Critical Design Review PDR – Preliminary Design Review SDR – System Design Review
 CIP – Capability Insertion Program SRR – System Requirements Review

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305265F: *GPS III Space Segment*

PROJECT

67A019: *GPS IIIA*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
GPS IIIA Preliminary Design Review (PDR)	3	2009	3	2009
GPS IIIA Milestone C	1	2011	1	2011
GPS IIIA Critical Design Review (CDR)	4	2010	4	2010
GPS IIIB System Design Review (SDR)	3	2011	3	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305265F: <i>GPS III Space Segment</i>	PROJECT 67A020: <i>OCX</i>
--	---	--------------------------------------

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
67A020: <i>OCX</i>	0.000	0.000	381.867	0.000	381.867	117.054	436.797	440.830	370.267	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This Budget Program Activity Code (BPAC) funds Research and Development (R&D) for the next generation GPS control segment (OCX). This includes, but is not limited to, advance concept development, systems engineering and analysis, modernized control segment development, GPS enterprise integration, training simulators, Integrated Logistics Support (ILS) products, and developmental test resources. The OCX acquisition was established to 1) fly the GPS III satellites, 2) incorporate situational awareness to support Navwar and signal monitoring, and 3) enable mission capability upgrades to support warfighter Effects-Based Approach to Operations (EBAO).

Funds will support engineering studies and analyses, architecture engineering studies, trade studies, technology needs forecasting, systems engineering, systems development, test and evaluation efforts and transition to mission operations in support of upgrades and product improvements for military and civil applications necessary to support efforts to protect U.S. military and allies' use of GPS. Funds will support science and technology, technology development, systems development and GPS enterprise integration efforts.

In FY2009 and FY2010, this effort is funded in PE 0603423F, Global Positioning System III - Operational Control Segment.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Development, test and evaluation of OCX and engineering studies, technology needs forecasting, systems engineering, system development, and test and evaluation efforts. <i>FY 2009 Accomplishments:</i> In FY 2009: NA	0.000	0.000	381.867	0.000	381.867

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305265F: <i>GPS III Space Segment</i>	PROJECT 67A020: <i>OCX</i>
--	---	--------------------------------------

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2010 Plans:</i> In FY 2010: NA					
<i>FY 2011 Base Plans:</i> In FY 2011: Continued OCX Block 1-2 development System Engineering & Integration (SE&I), technical and program support.					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	381.867	0.000	381.867

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (4839): <i>Related Activities:</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0603423F: <i>OCX (RDT&E)</i>	289.702	289.620	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0305265F: <i>GPS III (RDT&E)</i>	379.046	423.466	466.304	0.000	466.304	328.153	321.364	194.825	200.073	0.000	0.000
• PE 0305265F (1): <i>GPS III Space Segment (MPAF)</i>	0.000	0.000	122.490	0.000	122.490	680.879	496.942	790.366	700.931	0.000	0.000
• PE 0305265F (2): <i>OCX (OPAF)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.454	12.681	0.000	0.000

D. Acquisition Strategy

The Air Force is pursuing a "Block" approach to the GPS III next generation control segment (OCX) to rapidly respond to warfighter capability requirements. The Block acquisition utilizes a disciplined system engineering approach which focuses on mitigating cost and schedule risk through a lower risk incremental delivery of mature technologies. This approach focuses on mission success and on time delivery. The first block of GPS III ground control segment (OCX) will provide backwards compatibility to GPS Block II mission operation and provide GPS IIIA mission operation capability.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305265F: <i>GPS III Space Segment</i>	PROJECT 67A020: <i>OCX</i>
<p>The full content of OCX Blocks 1.0 and 2.0 includes M-code and civil signal monitoring, Net Centric Global Information Grid connectivity, command and control for GPS IIIA vehicles, and will meet current Information Assurance standards. This acquisition includes a structured capability insertion program to support risk reduction for OCX Blocks 3.0 and 4.0 (associated with controlling GPS IIIB and IIIC SVs).</p> <p>E. Performance Metrics</p> <p>Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.</p>		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305265F: <i>GPS III Space Segment</i>				PROJECT 67A020: <i>OCX</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Phase B OCX Blk I & II Development	C/CPIF	TBD TBD	0.000	0.000	Nov 2009	241.754	Nov 2010	0.000		241.754	Continuing	Continuing	0.000
SE&I	C/CPAF	SAIC El Segundo, CA	0.000	0.000	Nov 2009	5.993	Nov 2010	0.000		5.993	Continuing	Continuing	0.000
SE & Technical Support	Various/ Various	Various Various	0.000	0.000	Nov 2009	9.973	Nov 2010	0.000		9.973	Continuing	Continuing	0.000
Subtotal			0.000	0.000		257.720		0.000		257.720			0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Wing Support	Various/ Various	Various Various	0.000	0.000	Nov 2009	124.147	Nov 2010	0.000		124.147	Continuing	Continuing	0.000
Subtotal			0.000	0.000		124.147		0.000		124.147			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305265F: <i>GPS III Space Segment</i>	PROJECT 67A020: <i>OCX</i>
--	---	--------------------------------------

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	381.867	0.000	381.867			0.000

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

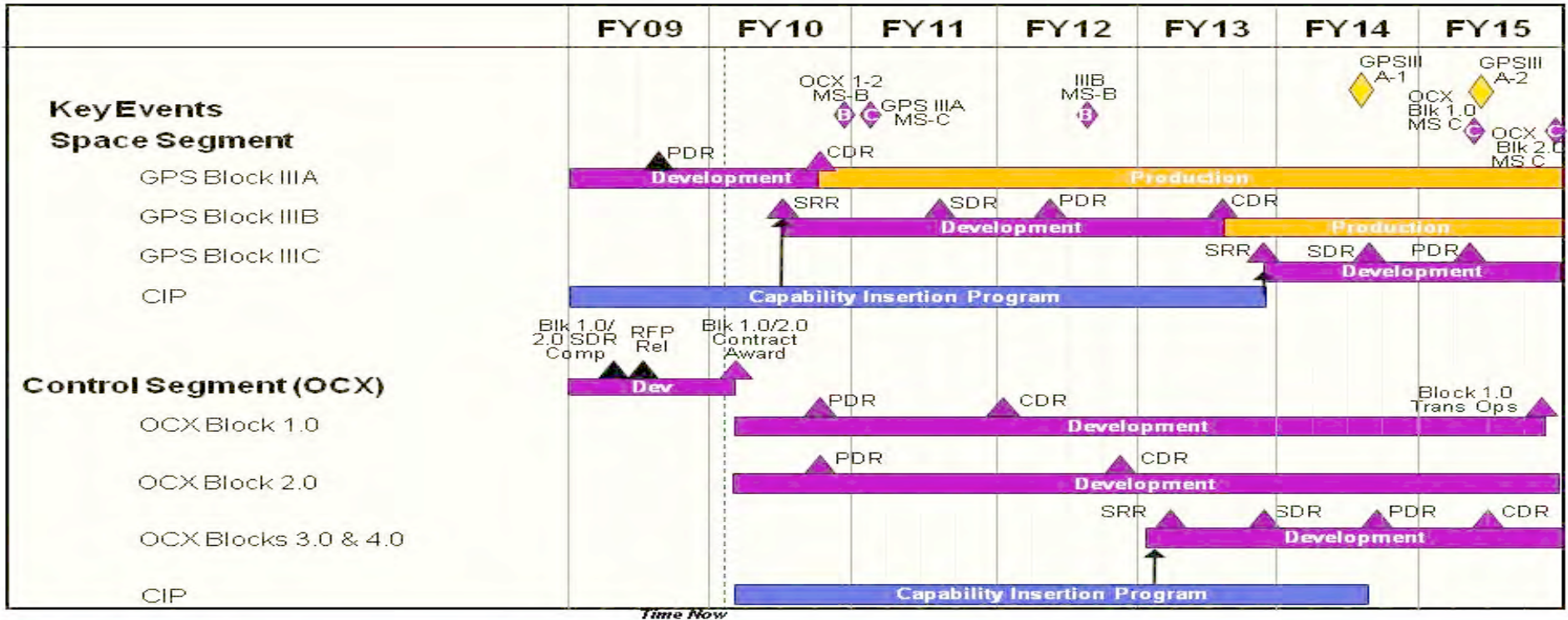
3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305265F: *GPS III Space Segment*

PROJECT

67A020: *OCX*



CDR – Critical Design Review PDR – Preliminary Design Review SDR – System Design Review
 CIP – Capability Insertion Program SRR – System Requirements Review

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305265F: <i>GPS III Space Segment</i>	PROJECT 67A020: <i>OCX</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Launch, Anomaly & Disposal Operations and LADO Authority to Proceed (ATP)	3	2011	3	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	136.271	132.706	0.000	132.706	121.764	106.408	158.135	150.862	Continuing	Continuing
67A030: <i>Infrastructure</i>	0.000	29.469	35.348	0.000	35.348	32.689	34.465	36.347	36.322	Continuing	Continuing
67A031: <i>Mission Applications</i>	0.000	87.520	79.169	0.000	79.169	73.684	46.842	91.028	85.562	Continuing	Continuing
67A032: <i>Command & Control</i>	0.000	8.085	9.907	0.000	9.907	11.851	20.679	26.523	26.506	Continuing	Continuing
67A033: <i>Data Integration</i>	0.000	11.197	8.282	0.000	8.282	3.540	4.422	4.237	2.472	Continuing	Continuing

Note

FY10 National Defense Authorization Act added Program Element funds to continue the Karnac study (a joint Air Force and Department of Energy National Laboratory effort) to improve the Joint Space Operations Center (JSpOC) capabilities (funds added to the Data Integration project line (A033)).

A. Mission Description and Budget Item Justification

Overall, the program will continue risk reduction engineering and focus on incremental releases (Information Technology BOX construct) to deploy a service-oriented architecture environment and tools to progressively advance operational capabilities toward an integrated JSpOC Mission System (JMS). This program will produce a net-centric collaborative environment, enhance and modernize space surveillance capabilities, create decision relevant views of the space environment, and enable efficient distribution of data across the space surveillance network.

JMS is responsible for Space Situational Awareness (SSA) and command & control (C2) of space forces. SSA includes the knowledge of all aspects of space related to operations to thoroughly assess threats to U.S. space assets and develop options, military and diplomatic to counter them and to establish contingency plans to ensure U.S. forces can maintain access to space assets. JMS will access intelligence on adversary space operations, process surveillance of all space objects and activities, maintain detailed reconnaissance of specific space assets; fuse space environmental data, maintain awareness of cooperative space assets; and allow the Joint Functional Component Command for Space (JFCC-Space) to conduct space forces integrated command, control, communications, processing, analysis, dissemination, and archiving activities.

Near-term focus is to provide a sustainable net-centric environment with a highly accurate, responsive, and robust SSA system migration from the rapidly aging, and sustainment-challenged Space Defense Operations Center (SPADOC) system (SPADOC design end of life was 2002). JMS will provide integrated space knowledge/information for the Command, JFCC-Space to plan, direct, coordinate, and control operations of assigned forces. JMS will provide the ability to: monitor status, activities, and environment for assigned/attached space forces; assess how space forces support the battle space, provide impacts of changes to force status, and

UNCLASSIFIED

R-1 Line Item #213

Page 1 of 28

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>
--	--

impacts of enemy forces on space assets; plan space operations to support theater and national operations; and execute Joint space tasking, track task performance, adapt tasking to changing situations, and conduct technology forecasting for emerging needs. JMS will also develop improved information capabilities for integration across SSA sensors, including exposing data when required, though data exposure will be accomplished via the Net Centric Sensors and Data Sources effort (BPAC A012) in the SSA Systems PE (0604425F).

These efforts are in Budget Activity 7, Operational System Development, because they develop new JMS capabilities

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	131.271	0.000	0.000	0.000
Current President's Budget	0.000	136.271	132.706	0.000	132.706
Total Adjustments	0.000	5.000	132.706	0.000	132.706
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	5.000	132.706	0.000	132.706

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 67A033: *Data Integration*

Congressional Add: *continues KARNAC study to improve JSpOC capabilities to include non-traditional data and three dimensional modeling and simulation.*

Congressional Add Subtotals for Project: 67A033

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	0.000	5.000
	0.000	5.000
	0.000	5.000

UNCLASSIFIED

R-1 Line Item #213

Page 2 of 28

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305614F: *JSpOC Mission System*

Change Summary Explanation

FY10: +5.0M Congressional Add to continue project KARNAC study to improve JSpOC capabilities to include non-traditional data and three dimensional modeling and simulation.

UNCLASSIFIED

R-1 Line Item #213

Page 3 of 28

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>	PROJECT 67A030: <i>Infrastructure</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
67A030: <i>Infrastructure</i>	0.000	29.469	35.348	0.000	35.348	32.689	34.465	36.347	36.322	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Infrastructure will provide a services-oriented architecture (SOA) net-centric collaborative information environment at the SAP/SAR, TS/SCI, Secret, and Unclassified levels. Efforts incorporate net-centric enterprise services and integrate incremental space mission applications services. Priority is migration off the legacy SPADOC hardware and services into a sustainable infrastructure. Effort integrates components of SSA mission applications and C2 capabilities into the JSpOC to create timely, actionable knowledge necessary for maintaining space superiority and exercising command and control of space forces.

These efforts are in Budget Activity 7, Operational System Development

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Pursue and integrate a collaborative net-centric, SOA information environment <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Develop, field, test, and accredit SOA infrastructure enclaves at SCI and Secret security levels. User Defined Operational Picture implementation. Initial core services like registry/user profiles management, collaboration expansion. Information assurance accreditation. JSpOC Integration of warfighter capabilities. System engineering integration, planning, coordination, and execution.	0.000	29.469	35.348	0.000	35.348

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>	PROJECT 67A030: <i>Infrastructure</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Continues the incorporation, fielding, and accreditation of new mission services, core services, and expands the SOA infrastructure enclaves to include releaseable information and Unclassified security levels. Continues integration and systems engineering, support, and testing of existing and updated baseline system</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>					
Accomplishments/Planned Programs Subtotals	0.000	29.469	35.348	0.000	35.348

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (5196): <i>Other Procurement, Air Force</i> <i>(PE 0305614F, JSpOC Mission System)</i>	0.000	0.000	0.000	0.000	0.000	5.874	1.563	1.361	6.304	0.000	0.000

D. Acquisition Strategy

Ongoing activities utilize existing risk reduction engineering and study efforts to rapidly deploy a SOA environment and tools to progressively advance operational capabilities toward an integrated JMS.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>	PROJECT 67A030: <i>Infrastructure</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Integration	TBD/TBD	TBD TBD	0.000	5.505	Mar 2010	11.670	Jan 2010	0.000		11.670	Continuing	Continuing	Continuing
Infrastructure Design & Development	C/Various	Various Various	0.000	20.477	Jan 2010	20.056	Dec 2010	0.000		20.056	Continuing	Continuing	Continuing
Subtotal			0.000	25.982		31.726		0.000		31.726			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Support	Various/ Various	Electronic Systems Center Hanscom AFB, MA	0.000	0.813	Nov 2009	0.838	Nov 2010	0.000		0.838	Continuing	Continuing	Continuing
Development, Review and Management	SS/FP	FFRDC Various	0.000	1.600	Nov 2009	1.648	Nov 2010	0.000		1.648	Continuing	Continuing	Continuing
Development, Review and Management (1)	C/FP	Various Various	0.000	1.074	Nov 2009	1.136	Nov 2010	0.000		1.136	Continuing	Continuing	Continuing
Subtotal			0.000	3.487		3.622		0.000		3.622			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>	PROJECT 67A030: <i>Infrastructure</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	29.469	35.348	0.000	35.348			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305614F: *JSpOC Mission System*

PROJECT

67A030: *Infrastructure*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Risk Reduction	1	2010	4	2011
IT Box Release	4	2010	4	2011

UNCLASSIFIED

R-1 Line Item #213

Page 9 of 28

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>	PROJECT 67A031: <i>Mission Applications</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
67A031: <i>Mission Applications</i>	0.000	87.520	79.169	0.000	79.169	73.684	46.842	91.028	85.562	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Mission applications will provide space services to enhancing the accuracy, sustainability, and responsiveness of space surveillance capabilities from the legacy SPADOC SSA functions onto a net-centric enterprise enabling automated, real-time correlation, integration, distribution of data, and provide the knowledge environment necessary to enable the Commander JFCC Space rapid, responsive decisions for the protection of space assets from proliferating threats (adversary as well as orbiting debris). The system will provide a high accuracy space catalog (knowledge of space objects), increased observation verification and capabilities, and improved event processing. Research, design, and development will provide SSA space catalog applications, services, space surveillance observation processing, and sensor tasking. Funding includes technical studies, systems engineering, and integration.

These efforts are in Budget Activity 7, Operational System Development

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: services/mission applications to conduct space control/situational awareness. <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: develop, field, and test mission services like sensor management and blue force status. Initiates development of satellite positional database (i.e. high accuracy catalog). Risk reduction efforts like commercial & foreign entities spacecraft information, space environmental effects, SSA web services, space C2 execution/tasking tools.	0.000	87.520	79.169	0.000	79.169

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>	PROJECT 67A031: <i>Mission Applications</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Continues development of mission high accuracy catalog and commercial and foreign entities services like maneuver processing, conjunction analysis/collision prediction, high accuracy element set generation, sensor tasking processing. Investigates, prepares, and initiates decommission of legacy system functionality.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>					
Accomplishments/Planned Programs Subtotals	0.000	87.520	79.169	0.000	79.169

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (5432): <i>Other Procurement, Air Force</i> <i>(PE 0305614F, JSpOC Mission System)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Continues existing SSA risk reduction efforts and competitively selected system developer and integrator. Rapid release prototyping approach to progressively advance capabilities towards integrated SSA envisioned by existing architectures and roadmaps.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>				PROJECT 67A031: <i>Mission Applications</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Positional Mission Apps Design and Develop	TBD/TBD	TBD TBD	0.000	25.000	Jun 2010	31.054	Nov 2010	0.000		31.054	Continuing	Continuing	Continuing
Mission Apps Design and Develop	C/TBD	Various Various	0.000	43.262	Jan 2010	25.229	Dec 2010	0.000		25.229	Continuing	Continuing	Continuing
SSA Risk Reduction	TBD/TBD	TBD TBD	0.000	6.650	Apr 2010	9.900	Jan 2011	0.000		9.900	Continuing	Continuing	Continuing
Subtotal			0.000	74.912		66.183		0.000		66.183			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Support	Various/ Various	Electronic Systems Center Hanscom AFB, MA	0.000	2.102	Nov 2009	2.165	Nov 2010	0.000		2.165	Continuing	Continuing	0.000
Development, Review & Management	SS/FP	FFRDC Various	0.000	3.083	Nov 2009	3.175	Nov 2010	0.000		3.175	Continuing	Continuing	0.000
Development, Review & Management (1)	C/FP	Various Various	0.000	7.423	Nov 2009	7.646	Nov 2010	0.000		7.646	Continuing	Continuing	0.000
Subtotal			0.000	12.608		12.986		0.000		12.986			0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>	PROJECT 67A031: <i>Mission Applications</i>
--	--	---

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	87.520	79.169	0.000	79.169			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305614F: *JSpOC Mission System*

PROJECT

67A031: *Mission Applications*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Risk Reduction	1	2010	4	2011
IT Box Releases	4	2010	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>	PROJECT 67A032: <i>Command & Control</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
67A032: <i>Command & Control</i>	0.000	8.085	9.907	0.000	9.907	11.851	20.679	26.523	26.506	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Command & Control (C2) effort will design, develop and integrate functions to create, visualize, and share decision-relevant views of space operational environment at all echelons. Functions include Space Situational Awareness and attack assessment data to provide an integrated space information environment for the JSpOC C2 node and improve deliberate attack warning/reporting, planning, tasking, course of action (COA) development capability, and situation assessment.

These efforts are in Budget Activity 7, Operational System Development

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Risk reduction/prototype development of space C2 services <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: explore JSpOC C2 human factors visualization technologies and space control efforts; e.g., master space plan, joining space tasking order, space order of battle <i>FY 2011 Base Plans:</i> In FY 2011: Continues space control services like courses of action preparation and C2 presentation <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A	0.000	8.085	9.907	0.000	9.907

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>	PROJECT 67A032: <i>Command & Control</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Accomplishments/Planned Programs Subtotals	0.000	8.085	9.907	0.000	9.907

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (5685): <i>N/A</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy
Risk reduction technology development/operational pilots to decrease uncertainties then employ competitively selected developer to produce and field incremental capabilities.

E. Performance Metrics
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>				PROJECT 67A032: <i>Command & Control</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
C2 Risk Reduction	TBD/TBD	TBD TBD	0.000	7.400	Mar 2010	9.016	Dec 2010	0.000		9.016	Continuing	Continuing	Continuing
Subtotal			0.000	7.400		9.016		0.000		9.016			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Support	Various/ Various	Electronic Systems Center Hanscom AFB, MA	0.000	0.685	Nov 2009	0.891	Nov 2010	0.000		0.891	Continuing	Continuing	Continuing
Subtotal			0.000	0.685		0.891		0.000		0.891			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	0.000	8.085		9.907		0.000		9.907			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>	PROJECT 67A032: <i>Command & Control</i>
--	--	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305614F: *JSpOC Mission System*

PROJECT

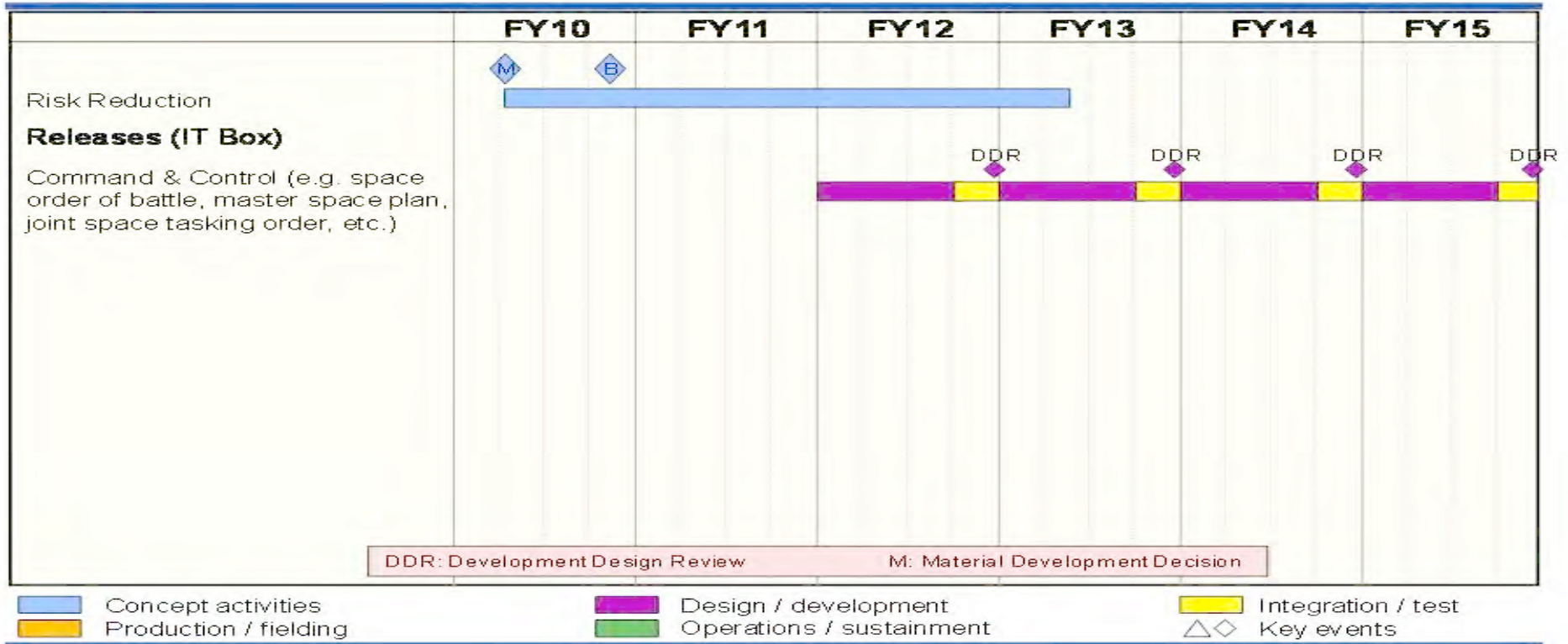
67A032: *Command & Control*



DRAFT

JSpOC Mission System

PE 0305614F Project A032 Command & Control



UNCLASSIFIED

R-1 Line Item #213

Page 20 of 28

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY
 3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0305614F: *JSpOC Mission System*

PROJECT
 67A032: *Command & Control*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Risk Reduction	2	2010	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>				PROJECT 67A033: <i>Data Integration</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost	
67A033: <i>Data Integration</i>	0.000	11.197	8.282	0.000	8.282	3.540	4.422	4.237	2.472	Continuing	Continuing	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0			
Note In FY10, a Congressional Add of \$3.2M for "COTS Technology for Space Command and Control" was added into the AOC-WS PE (0207410F), Space C2 Ops BPAC (674372) by error and will be moved into the Data Integration BPAC (67A033) of the JMS PE (0305614F)												
A. Mission Description and Budget Item Justification The Data Integration Risk reduction effort mitigates JMS risk for the integration of legacy sensors into a net-centric based enterprise enabling distribution of data obtained across traditional sensors within the space surveillance network and non-traditional sensors and data sources critical to the Joint Space Operations Center (JSpOC) mission. This effort will define and implement the operational concept, technical architecture, and support concept to provide data to enable rapid, responsive decisions by the Commander, US Strategic Command's Joint Functional Component Commander for Space and other space capability users to ensure protection of US space assets from proliferating adversary threats. This effort is vital to JSpOC modernization. These efforts are in Budget Activity 7, Operational System Development, because they develop capabilities for better integration of SSA data or develop architectures guiding associated technical and budgetary planning.												
B. Accomplishments/Planned Program (\$ in Millions)												
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total		
MAJOR THRUST: risk reduction integration of legacy/non-traditional sensors into net-centric enterprise <i>FY 2009 Accomplishments:</i> In FY 2009: N/A						0.000	6.197	8.282	0.000	8.282		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>		PROJECT 67A033: <i>Data Integration</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: engineering for common logical data model, space surveillance observations interface, and non-traditional sensors interface</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: continues data modeling and management interfaces to include Space Fence program and net-centric satellite observations for high-accuracy catalog processing</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>								
Accomplishments/Planned Programs Subtotals				0.000	6.197	8.282	0.000	8.282
				FY 2009	FY 2010			
<p>Congressional Add: continues KARNAC study to improve JSpOC capabilities to include non-traditional data and three dimensional modeling and simulation.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: N/A</p> <p><i>FY 2010 Plans:</i> In FY 2010: KARNAC study to improve JSpOC capabilities to include non-traditional data and three dimensional modeling and simulation.</p>				0.000	5.000			
Congressional Adds Subtotals				0.000	5.000			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>	PROJECT 67A033: <i>Data Integration</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (5897): <i>N/A</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Data integration focus is on supporting the migration of the space surveillance network sensors and non-traditional sensors and data sources to a net-centric architecture.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>	PROJECT 67A033: <i>Data Integration</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Concept Definition Research/Analysis	Various/ Various	Various Various	0.000	2.600	Feb 2010	2.060	Nov 2010	0.000		2.060	Continuing	Continuing	Continuing
Sensor & Data Source Integration	Various/ Various	Various Various	0.000	2.225	Mar 2010	4.559	Dec 2010	0.000		4.559	Continuing	Continuing	Continuing
Subtotal			0.000	4.825		6.619		0.000		6.619			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office/Related Support	Various/ Various	Various Various	0.000	1.372	Apr 2010	1.663	Nov 2010	0.000		1.663	Continuing	Continuing	Continuing
Subtotal			0.000	1.372		1.663		0.000		1.663			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305614F: <i>JSpOC Mission System</i>	PROJECT 67A033: <i>Data Integration</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
KARNAC Study	TBD/TBD	TBD TBD	0.000	5.000	Jan 2010	0.000	Oct 2010	0.000		0.000	0.000	5.000	0.000
Subtotal			0.000	5.000		0.000		0.000		0.000	0.000	5.000	0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	11.197	8.282	0.000	8.282			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305614F: *JSpOC Mission System*

PROJECT

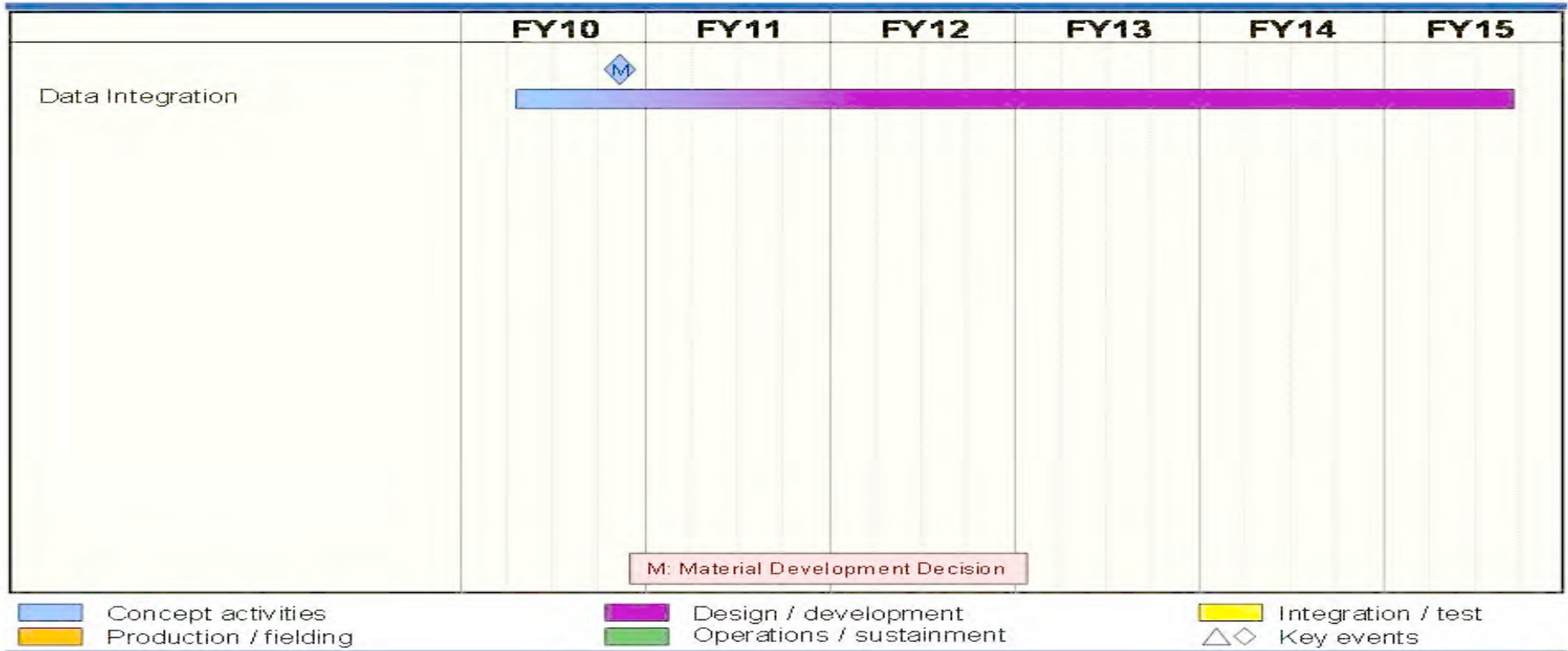
67A033: *Data Integration*



DRAFT

JSpOC Mission System

PE 0305614F Project A033 Data Integration



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305614F: *JSpOC Mission System*

PROJECT

67A033: *Data Integration*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Data Integration	2	2010	4	2011

UNCLASSIFIED

R-1 Line Item #213

Page 28 of 28

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305887F: <i>Electronic Combat Intelligence Support</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	5.251	5.220	5.512	0.000	5.512	2.474	3.302	3.684	4.067	Continuing	Continuing
670374: <i>Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt</i>	5.251	5.220	5.512	0.000	5.512	2.474	3.302	3.684	4.067	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program expedites Information Superiority (IS) Technology transition from laboratory, industry, and academia to operational platforms including the Network Attack System (NAS) via studies, rapid prototyping, technology demonstrations and other RDT&E efforts. Program efforts directly support the AF Information Operations Capabilities Plan (IOCP) and the DoD Information Operations (IO) Roadmap.

The program office investigates and selects the highest potential IO technologies to meet specific shortfalls, deficiencies, and requirements documented by major commands (MAJCOMs), unified commands, and IO agencies in Mission Area Plans (MAPs) and capabilities documents. In accordance with AF Policy on IO, the IS core capability areas to be considered are influence operations, electronic warfare operations and network warfare operations.

Planned areas of study, prototyping, and technology demonstration include, but are not limited to, exploitation of networks, telephony, Integrated Air Defense Systems (IADS), electronic warfare operations, Command and Control Systems, and applying the latest advancements in emerging physics, electronic warfare, communications, directed energy, electronic sensors, and intelligence to IS. These advancements will be used to develop and deliver cutting edge technologies to the warfighter.

The program office works directly with labs, industry, and warfighters to set priorities and find synergistic combinations of new technology, doctrine and training via multiple Network Warfare Operations Capability (NWOC) contract awards to deliver state of the art IO tools to the warfighter as well as to engineer key upgrades and modifications to the NAS. Program efforts will be prioritized and guided by the Information Operations Capabilities Team (IOCT) in support of the AF IOCP and other applicable requirements documents. Program activities are protected under the PANTHER DEN Special Access Program.

This program is Budget Activity 7, Operational System Development, because it studies, develops, tests, and fields IO technologies to operational systems.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305887F: <i>Electronic Combat Intelligence Support</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	5.401	5.357	0.000	0.000	0.000
Current President's Budget	5.251	5.220	5.512	0.000	5.512
Total Adjustments	-0.150	-0.137	5.512	0.000	5.512
• Congressional General Reductions		-0.137			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.150	0.000			
• Other Adjustments	0.000	0.000	5.512	0.000	5.512

Change Summary Explanation

Reduction in FY11-15 funding is a result of higher AF priorities.

UNCLASSIFIED

R-1 Line Item #214

Page 2 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305887F: <i>Electronic Combat Intelligence Support</i>	PROJECT 670374: <i>Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
670374: <i>Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt</i>	5.251	5.220	5.512	0.000	5.512	2.474	3.302	3.684	4.067	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

FY04: Program content and funding transferred from PE 33140F-INFOSEC project 4871-Information Operation Technology, into PE 35887F project 70IOT-IO Technology. This alignment better supports the RDT&E effort for information operations.

FY05: Under PE 35887F, the funding and content in project 7IOT-Information Operations Technology, transferred to project 0374-Electronic Combat Intel Support, C3 Protection /Multi-Mission, Technology and Support. Project 7IOT will be closed.

(U) This program expedites Information Superiority (IS) Technology transition from laboratory, industry, and academia to operational platforms via studies, rapid prototyping, technology demonstrations and other RDT&E efforts. Program efforts directly support the AF Information Operations Capabilities Plan (IOCP) and the DoD Information Operations (IO) Roadmap.

(U) The program office investigates and selects the highest potential Information Operations technologies to meet specific shortfalls and deficiencies documented by major commands (MAJCOMs), unified commands, and IO agencies in Mission Area Plans (MAPs) and capabilities documents. In accordance with AF Doctrine 10-7, the IS core capability areas to be considered are influence operations, electronic warfare operations and network warfare operations.

(U) The program office works directly with leading experts, industry users, and battle labs to set priorities and find synergistic combinations of new technology, doctrine and training. Program efforts will be prioritized and guided by the Information Operations Capabilities Team (IOCT) in support of the Air Force IOCP and other applicable requirements documents.

(U) This program funds IO research and development and support to leverage state of the art technology incubation such as DoD lab efforts. Studies will be deconflicted with and will complement PE's 0208021 Information Warfare Support and 0307293 Information Operations Systems and Support. Some aspects of this program will be protected under the PANTHER DEN Special Access Program. Data available upon request.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305887F: <i>Electronic Combat Intelligence Support</i>	PROJECT 670374: <i>Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt</i>
--	--	--

(U) Planned areas of prototyping, demonstration, and support include but are not limited to, techniques and technologies for defending systems against sophisticated Information Superiority (IS), test infrastructure development, and establishing technology for computer network attacks. This will be done by exploiting Integrated Air Defense Systems (IADS), Command and Control Systems, and applying the latest advancements in emerging physics, communications, directed energy, electronic sensors, and intelligence to IS.

(U) This program is Budget Activity 7, Operational System Development, because it studies, develops, and fields IO technologies.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: NAS - Network Attack System Modifications/Upgrades <i>FY 2009 Accomplishments:</i> In FY 2009: This effort kept the current operational system viable via necessary upgrades and modifications. These activities are protected under the PANTHER DEN Special Access Program. <i>FY 2010 Plans:</i> In FY 2010: This effort will continue maintaining the current operational system via necessary upgrades and modifications. These activities are protected under the PANTHER DEN Special Access Program. <i>FY 2011 Base Plans:</i> In FY 2011: This effort will continue maintaining the current operational system via necessary upgrades and modifications. Increased funding is due to greater anticipated equipment obsolescence requiring replacement via upgrades and modifications. These activities are protected under the PANTHER DEN Special Access Program. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.	0.340	0.500	1.100	0.000	1.100
MAJOR THRUST: NWOC - Network Warfare Operations Capability Studies & Technology	2.466	2.265	1.800	0.000	1.800

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305887F: <i>Electronic Combat Intelligence Support</i>	PROJECT 670374: <i>Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Funding continues to provide the required developmental testing for new tool development prior for future fielding to the operational platform. This funding will provide the secure environment for such testing.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	5.251	5.220	5.512	0.000	5.512

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0305887F: <i>Info Assurance R&D - (O&M)</i>	11.187	11.865	4.781	0.000	4.781	6.197	5.553	6.075	6.921	0.000	0.000

D. Acquisition Strategy

NWOC proposals are reviewed using a Broad Agency Announcement. For the NAS effort, all major contracts within this PE are awarded after full and open competition unless other than full and open is justified to the Program Executive Officer (PEO).

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305887F: <i>Electronic Combat Intelligence Support</i>	PROJECT 670374: <i>Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NAS Modifications/ Upgrades	C/CPFF	General Dynamics San Antonio, TX	0.340	0.500	Nov 2009	1.100	Nov 2010	0.000		1.100	Continuing	Continuing	Continuing
NWOC Studies & Technology	C/CPFF	Various Various	2.466	1.920	Jan 2010	1.771	May 2011	0.000		1.771	Continuing	Continuing	Continuing
Subtotal			2.806	2.420		2.871		0.000		2.871			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Acquisition Support	TM	Various San Antonio, TX	1.171	1.318	Nov 2009	1.035	Nov 2010	0.000		1.035	Continuing	Continuing	Continuing
Engineering Support	FFRDC	MITRE San Antonio, TX	0.599	0.917	Oct 2009	0.918	Oct 2010	0.000		0.918	Continuing	Continuing	Continuing
Subtotal			1.770	2.235		1.953		0.000		1.953			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305887F: <i>Electronic Combat Intelligence Support</i>	PROJECT 670374: <i>Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt</i>
--	--	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
46 Det 2 Test Squadron	TM	Northrup Grumman San Antonio, TX	0.600	0.475	Mar 2010	0.600	Mar 2011	0.000		0.600	Continuing	Continuing	Continuing
Subtotal			0.600	0.475		0.600		0.000		0.600			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Centralized PMA	TM	Various Hanscom AFB, MA	0.075	0.090	Jan 2010	0.088	Jan 2011	0.000		0.088	Continuing	Continuing	0.000
Subtotal			0.075	0.090		0.088		0.000		0.088			0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	5.251	5.220		5.512		0.000		5.512			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305887F: <i>Electronic Combat Intelligence Support</i>	PROJECT 670374: <i>Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt</i>
--	--	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

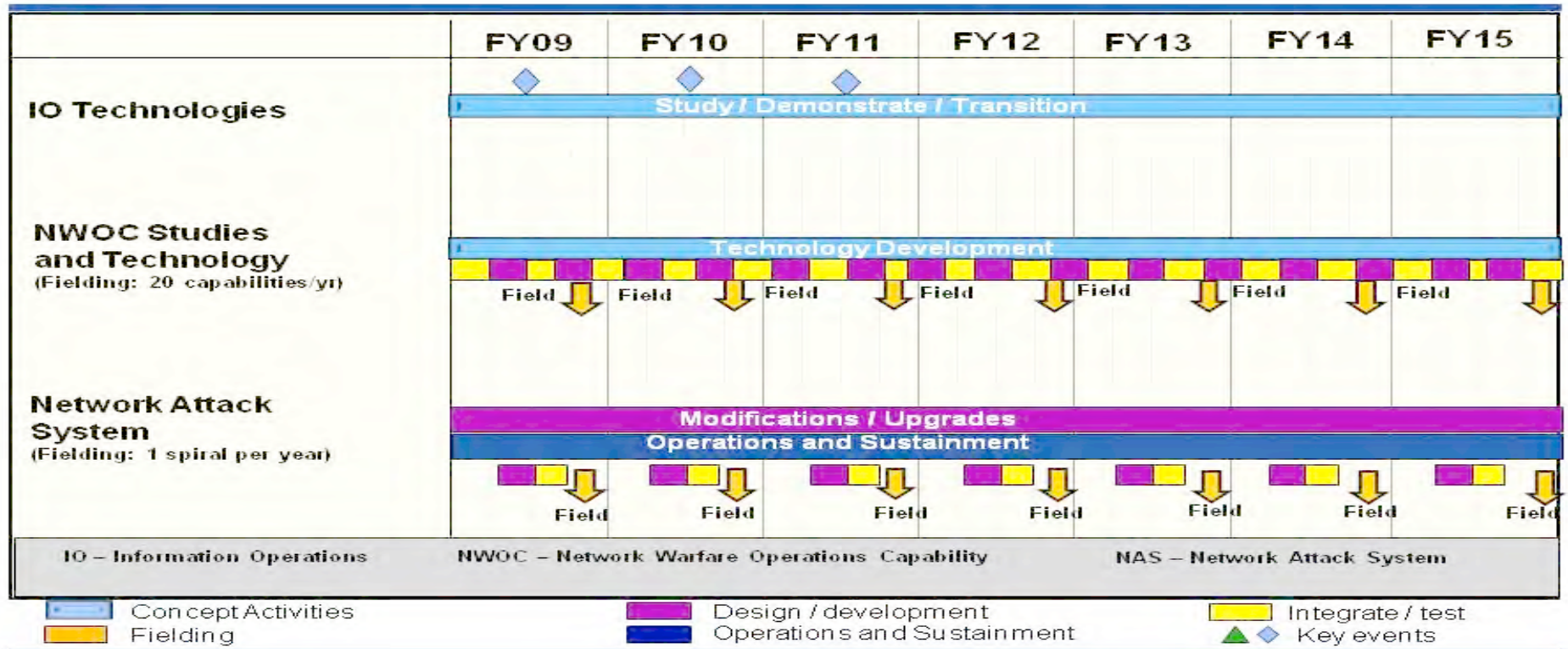
PE 0305887F: *Electronic Combat Intelligence Support*

PROJECT

670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*



IO Schedule



PB10 R-Docs

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305887F: *Electronic Combat Intelligence Support*

PROJECT

670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
IO Technologies	1	2009	4	2011
NWOC - Network Warfare Operations Capability Studies and Technology	1	2009	4	2011
NAS - Network Attack System Modifications/Upgrades	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305913F: <i>NUDET Detection System (Space)</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	41.102	83.846	72.199	0.000	72.199	82.818	80.287	61.306	50.454	Continuing	Continuing
672808: <i>Nuc Detonation Det Sys (sensors)</i>	41.102	83.846	72.199	0.000	72.199	82.818	80.287	61.306	50.454	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Nuclear Detonation (NUDET) Detection System (NDS) provides a worldwide, highly survivable capability to detect, locate, and report any nuclear detonations in the earth's atmosphere or in near space in near-real time. The NDS supports NUDET detection requirements for United States Northern Command (USNORTHCOM)/ North American Aerospace Defense Command (NORAD) (Integrated Tactical Warning and Attack Assessment (ITW/AA)), United States Strategic Command (USSTRATCOM) (Nuclear Force Management), and Air Force Technical Applications Center (AFTAC) (Treaty Monitoring). NDS consists of space and ground segments. The current space segment consists of NUDET detection sensors (optical, x-ray, dosimeters and electromagnetic pulse (EMP) sensor) on Global Positioning System (GPS) satellites and (optical, x-rays, and neutron and gamma rays) on Defense Support Program (DSP) satellites. The ground segment includes the Integrated Correlation and Display System (ICADS), Ground NDS Terminals (GNT) and Universal GNT (UGNT).

This NDS Program Element (PE) includes research and development, testing and fielding of ICADS, GNT, UGNT and the integration of Space and Atmospheric Burst Reporting System (SABRS) sensors on Geostationary (GEO) satellites. ICADS provides a fixed ground receiving station and GNT provides the survivable ground receiving station. UGNT is a transportable set of satellite ground station equipment and software. The UGNT will receive and processes data from sensors on GPS and DSP satellites and disseminates NUDET reports to users. SABRS is the future neutron/gamma sensor payload that will be hosted on a classified GEO satellite to replace the NDS sensor payload on DSP satellites. Sensor integration for GPS satellites is funded in the GPS Space & Control PE (0305165F) for GPS Block IIF and the GPS III Space Segment PE (0305265F) for GPS III satellites. Ground segment development remains in the NDS PE. DOE funds new NDS sensor research and production .

This program is in Budget Activity 7 - Operational System Development because it supports operational systems.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305913F: <i>NUDET Detection System (Space)</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	41.102	84.021	0.000	0.000	0.000
Current President's Budget	41.102	83.846	72.199	0.000	72.199
Total Adjustments	0.000	-0.175	72.199	0.000	72.199
• Congressional General Reductions		-0.175			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	72.199	0.000	72.199

Change Summary Explanation

The FY2010 President's Budget submittal did not reflect FY2011 through FY2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305913F: <i>NUDET Detection System (Space)</i>	PROJECT 672808: <i>Nuc Detonation Det Sys (sensors)</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
672808: <i>Nuc Detonation Det Sys (sensors)</i>	41.102	83.846	72.199	0.000	72.199	82.818	80.287	61.306	50.454	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Nuclear Detonation (NUDET) Detection System (NDS) provides a worldwide, highly survivable capability to detect, locate, and report any nuclear detonations in the earth's atmosphere or in near space in near-real time. The NDS supports NUDET detection requirements for United States Northern Command (USNORTHCOM)/ North American Aerospace Defense Command (NORAD) (Integrated Tactical Warning and Attack Assessment (ITW/AA)), United States Strategic Command (USSTRATCOM) (Nuclear Force Management), and Air Force Technical Applications Center (AFTAC) (Treaty Monitoring). NDS consists of space and ground segments. The current space segment consists of NUDET detection sensors (optical, x-ray, dosimeters and electromagnetic pulse (EMP) sensor) on Global Positioning System (GPS) satellites and (optical, x-rays, and neutron and gamma rays) on Defense Support Program (DSP) satellites. The ground segment includes the Integrated Correlation and Display System (ICADS), Ground NDS Terminals (GNT) and Universal GNT (UGNT).

This NDS Program Element (PE) includes research and development, testing and fielding of ICADS, GNT, UGNT and the integration of Space and Atmospheric Burst Reporting System (SABRS) sensors on Geostationary (GEO) satellites. ICADS provides a fixed ground receiving station and GNT provides the survivable ground receiving station. UGNT is a transportable set of satellite ground station equipment and software. The UGNT will receive and processes data from sensors on GPS and DSP satellites and disseminates NUDET reports to users. SABRS is the future neutron/gamma sensor payload that will be hosted on a classified GEO satellite to replace the NDS sensor payload on DSP satellites. Sensor integration for GPS satellites is funded in the GPS Space & Control PE (0305165F) for GPS Block IIF and the GPS III Space Segment PE (0305265F) for GPS III satellites. Ground segment development remains in the NDS PE. DOE funds new NDS sensor research and production .

This program is in Budget Activity 7 - Operational System Development because it supports operational systems.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305913F: <i>NUDET Detection System (Space)</i>	PROJECT 672808: <i>Nuc Detonation Det Sys (sensors)</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: Research and development, testing and fielding of ICADS, GNT, UGNT and the integration of SABRS on GEO satellites.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: ICADS and GNT development, NDS sensor on-orbit qualification testing, SABRS on GEO host development and integration, SE&I and technical support.</p> <p><i>FY 2010 Plans:</i> In FY 2010: ICADS and GNT development, NDS sensor on-orbit qualification testing, SABRS on GEO host development and integration, SE&I and technical support.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: ICADS, and GNT development, NDS sensor on-orbit qualification testing, SABRS on GEO host development and integration, SE&I and technical support. Begin development of hardware and software for UGNT.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>	41.102	83.846	72.199	0.000	72.199
Accomplishments/Planned Programs Subtotals	41.102	83.846	72.199	0.000	72.199

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (6553): <i>Related Activities:</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0305913F: <i>NDS (O&M)</i>	7.163	7.381	8.591	0.000	8.591	8.598	8.836	9.197	9.714	0.000	0.000
• PE 0305913F (1): <i>NDS (OPAF)</i>	32.567	15.389	5.926	0.000	5.926	4.953	5.575	5.927	6.169	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305913F: <i>NUDET Detection System (Space)</i>	PROJECT 672808: <i>Nuc Detonation Det Sys (sensors)</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0305913F (2): <i>NDS (MPAF)</i>	1.246	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The NDS Acquisition Strategy is to develop, field and sustain NDS satellite sensors and NDS ground data processing and distribution hardware and software as well as mission operational and technical program support to sustain the NDS capability on GPS and GEO satellites; funding is sent by Military Interdepartmental Purchase Request (MIPR) from DoD and Department of Energy (DoE) to Sandia and Los Alamos National Laboratories and other agencies on existing DOE contracts. Funding is MIPR'd to host satellite program office.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305913F: <i>NUDET Detection System</i> (Space)				PROJECT 672808: <i>Nuc Detonation Det Sys (sensors)</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ICADS and GNT	MIPR	Sandia National Laboratory Albuquerque, NM	218.067	36.736	Nov 2009	31.125	Nov 2010	0.000		31.125	Continuing	Continuing	0.000
UGNT	MIPR	Various Albuquerque, NM	0.000	0.000		12.700	Nov 2010	0.000		12.700	Continuing	Continuing	0.000
On-orbit sensor testing	MIPR	Various Albuquerque, NM	23.895	2.465	Nov 2009	2.464	Nov 2010	0.000		2.464	Continuing	Continuing	0.000
SABRS	MIPR	Various Classified	45.126	34.400	Nov 2009	16.500	Nov 2010	0.000		16.500	Continuing	Continuing	0.000
Completed NDS Development Efforts	Various/ Various	Various Various	13.062	0.000		0.000		0.000		0.000	0.000	13.062	0.000
Subtotal			300.150	73.601		62.789		0.000		62.789			0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mission Support	Various/ Various	Various Various	25.453	5.225	Nov 2009	4.153	Nov 2010	0.000		4.153	Continuing	Continuing	0.000
Technical Support	Various/ Various	Various Various	26.687	2.348	Nov 2009	2.300	Nov 2010	0.000		2.300	Continuing	Continuing	0.000

UNCLASSIFIED

R-1 Line Item #215

Page 6 of 10

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305913F: <i>NUDET Detection System (Space)</i>	PROJECT 672808: <i>Nuc Detonation Det Sys (sensors)</i>
--	--	---

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Engineering & Integration (SE&I)	Various/ Various	Various El Segundo, CA	5.420	2.419	Nov 2009	2.700	Nov 2010	0.000		2.700	Continuing	Continuing	0.000
Completed NDS Support Efforts	Various/ Various	Various Various	5.185	0.000		0.000		0.000		0.000	0.000	5.185	0.000
Subtotal			62.745	9.992		9.153		0.000		9.153			0.000

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Testing	PO	17th Test Squadron Schriever AFB, CO	0.888	0.253	Nov 2009	0.257	Nov 2010	0.000		0.257	Continuing	Continuing	0.000
Subtotal			0.888	0.253		0.257		0.000		0.257			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305913F: <i>NUDET Detection System (Space)</i>	PROJECT 672808: <i>Nuc Detonation Det Sys (sensors)</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	363.783	83.846	72.199	0.000	72.199			0.000

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

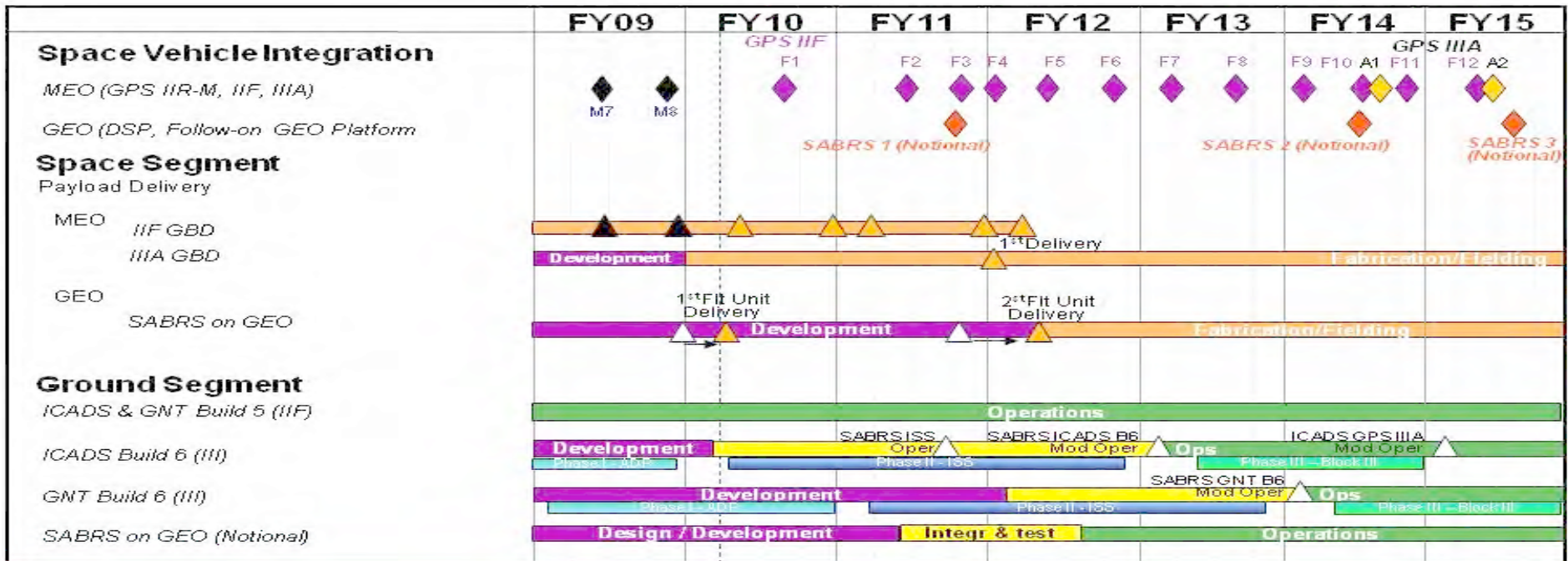
3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305913F: NUDET Detection System
(Space)

PROJECT

672808: Nuc Detonation Det Sys (sensors)



DSP – Defense Support Program
GBD – Global Burst Detector
GEO – Geosynchronous
GNT – Ground NDS Terminal
ICADS – Integrated Correlation & Display System

ISS – Interim Support System
MEO – Medium Earth Orbit
SABRS – Space & Atmospheric Burst Reporting System

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305913F: <i>NUDET Detection System (Space)</i>	PROJECT 672808: <i>Nuc Detonation Det Sys (sensors)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Global Burst Detector development for GPS IIIA complete	4	2009	4	2009
Space & Atmospheric Burst Reporting System (SABRS) on Alt Host 1 Development Complete	1	2010	1	2010
Integrated Correlation & Display System (ICADS) Build 6 Installation	1	2010	3	2010
ICADS Build 6 Test	3	2010	3	2010
ICADS SABRS Interim Support System (Alt Host 1) Integration & Testing Complete	3	2011	3	2011
Begin Universal Ground NDS Terminal (UGNT) development	1	2011	1	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305924F: <i>National Security Space Office</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	7.512	0.000	10.630	0.000	10.630	10.773	11.175	11.333	11.505	Continuing	Continuing
67A016: <i>National Security Space Office</i>	7.512	0.000	10.630	0.000	10.630	10.773	11.175	11.333	11.505	Continuing	Continuing

A. Mission Description and Budget Item Justification

The National Security Space Office (NSSO) provides strategic focus and unity of effort across the National Security Space (NSS) enterprise spanning the military, intelligence, civil, and commercial space sectors. NSSO conducts long-range space strategic planning; develops mid- to long-term space architectures; examines trades between space and non-space solutions to user requirements; assesses defense and intelligence space programs for conformity with policies, planning guidance, and architectural decisions; provides technical enterprise engineering; and conducts analyses of space subjects to guide the activities of NSS organizations. The office reports to both the Under Secretary of the Air Force / DoD Executive Agent for Space. Through them it also advises the leaders of the military services, intelligence community, U.S. Strategic Command, Office of the Secretary of Defense, and Office of the Director of National Intelligence on space matters. NSSO enables better decisions to guide the future of the NSS community and provides requisite knowledge to better leverage space assets more effectively in support of U.S. national objectives and in concert with land, sea, air and cyberspace capabilities.

This program is in Budget Activity 7, Operational System Development, because its architectures and other activities guide the acquisition, deployment, and integration of operational systems.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305924F: <i>National Security Space Office</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	7.587	10.634	0.000	0.000	0.000
Current President's Budget	7.512	0.000	10.630	0.000	10.630
Total Adjustments	-0.075	-10.634	10.630	0.000	10.630
• Congressional General Reductions		-10.634			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.075	0.000	10.630	0.000	10.630

Change Summary Explanation

FY 2010: -\$10.630 Congressional Reduction

FY 2011: The FY 2010 President's Budget submission did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

R-1 Line Item #216

Page 2 of 8

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305924F: <i>National Security Space Office</i>	PROJECT 67A016: <i>National Security Space Office</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
67A016: <i>National Security Space Office</i>	7.512	0.000	10.630	0.000	10.630	10.773	11.175	11.333	11.505	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The National Security Space Office (NSSO) provides strategic focus and unity of effort across the National Security Space (NSS) enterprise spanning the military, intelligence, civil, and commercial space sectors. NSSO conducts long-range space strategic planning; develops mid- to long-term space architectures; examines trades between space and non-space solutions to user requirements; assesses defense and intelligence space programs for conformity with policies, planning guidance, and architectural decisions; provides technical enterprise engineering; and conducts analyses of space subjects to guide the activities of NSS organizations. The office reports to both the Under Secretary of the Air Force / DoD Executive Agent for Space. Through them it also advises the leaders of the military services, intelligence community, U.S. Strategic Command, Office of the Secretary of Defense, and Office of the Director of National Intelligence on space matters. NSSO enables better decisions to guide the future of the NSS community and provides requisite knowledge to better leverage space assets more effectively in support of U.S. national objectives and in concert with land, sea, air and cyberspace capabilities.

This program is in Budget Activity 7, Operational System Development, because its architectures and other activities guide the acquisition, deployment, and integration of operational systems.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAIN THRUST: Conducts space planning and assessment activities, develops architectures for mid-/long-term space activities, and provides systems-of-systems engineering to examine the technical imp...	7.512	0.000	10.630	0.000	10.630
<i>FY 2009 Accomplishments:</i> In FY 2009: Provided National Security Space (NSS) strategy and enabling activities, NSS plan development and program assessment. Developed and supported space architecture and NSS					

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305924F: <i>National Security Space Office</i>	PROJECT 67A016: <i>National Security Space Office</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>studies. Planned and implemented architecture study and development, transition and implementation and architecture and enterprise engineering.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Not applicable</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Will provide National Security Space (NSS) strategy and enabling activities, NSS plan development and program assessment. Will develop and support space architecture and NSS studies. Will plan and implement architecture study and development, transition and implementation and architecture and enterprise engineering.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>					
Accomplishments/Planned Programs Subtotals	7.512	0.000	10.630	0.000	10.630

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (6978): <i>Not applicable</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

NSSO conducted a full and open competition to award a contract for the technical assistance and management support it uses to execute its space architecture, strategy, development, and planning activities. It will also continue to utilize existing contract vehicles maintained by other DoD organizations for supplemental assistance and support, as required.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305924F: <i>National Security Space Office</i>	PROJECT 67A016: <i>National Security Space Office</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305924F: <i>National Security Space Office</i>				PROJECT 67A016: <i>National Security Space Office</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Architecture/other product development	C/CPAF	SAIC San Diego, CA	27.871	0.000		6.733	Dec 2010	0.000		6.733	Continuing	Continuing	Continuing
Architecture/other product development (1)	TBD/CPAF	Aerospace Corp El Segundo, CA	5.748	0.000		1.953	Nov 2010	0.000		1.953	Continuing	Continuing	Continuing
Architecture/other product development (2)	TBD/TBD	MITRE Bedford, MA	6.348	0.000		1.944	Oct 2010	0.000		1.944	Continuing	Continuing	Continuing
Subtotal			39.967	0.000		10.630		0.000		10.630			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	39.967	0.000		10.630		0.000		10.630			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

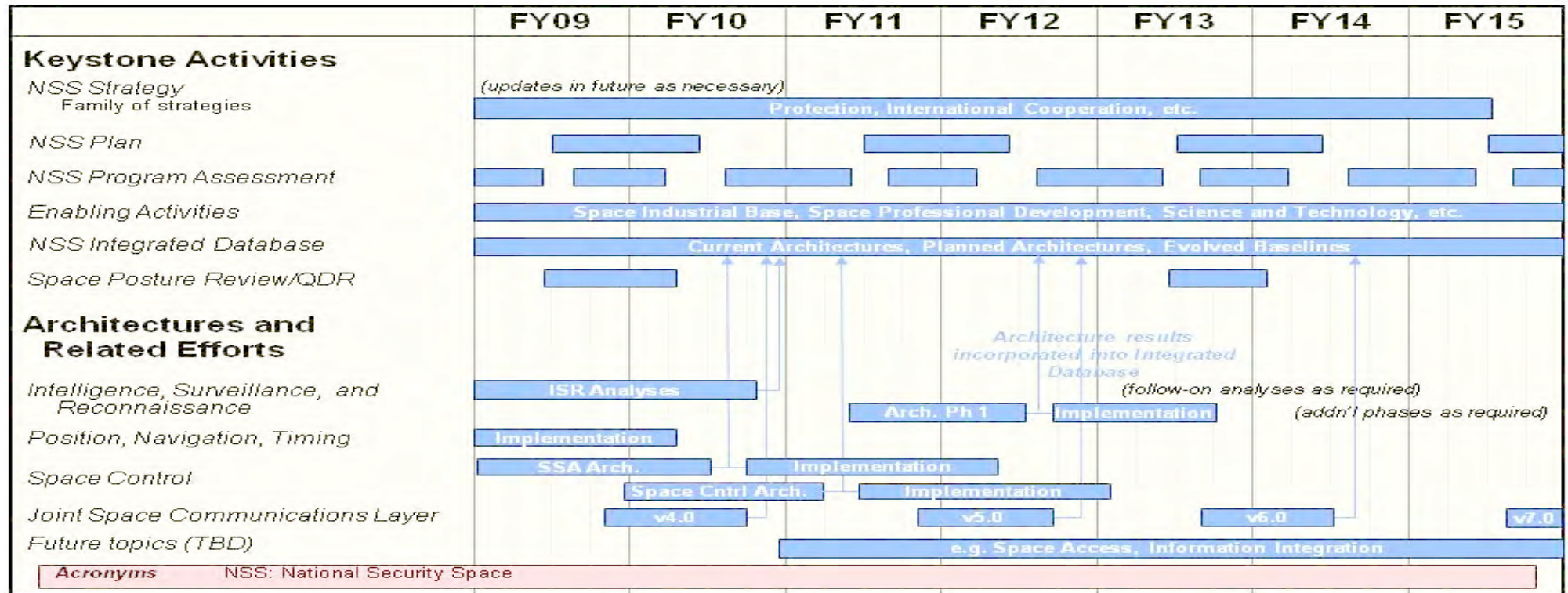
3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305924F: National Security Space Office

PROJECT

67A016: National Security Space Office



- Concept activities
- Production / fielding
- Design / development
- Operations / sustainment
- Integration / test
- △◇ Key events

UNCLASSIFIED

R-1 Line Item #216

Page 7 of 8

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305924F: <i>National Security Space Office</i>	PROJECT 67A016: <i>National Security Space Office</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Complete biannual NSS Plan	2	2010	2	2010
Complete annual NSS Program Assessment	2	2009	2	2009
Complete annual NSS Program Assessment (2)	1	2010	1	2010
Complete annual NSS Program Assessment (3)	2	2011	2	2011
Continue space architecture efforts	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305940F: <i>Space Situation Awareness Operations</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	15.579	53.805	43.838	0.000	43.838	26.744	31.486	81.568	69.969	Continuing	Continuing
67A017: <i>Sensor Service Life Extension Programs</i>	15.579	53.805	43.838	0.000	43.838	26.744	31.486	81.568	69.969	Continuing	Continuing

A. Mission Description and Budget Item Justification

Space Situational Awareness (SSA) is knowledge of all aspects of space related to operational sensing. The foundation for space control, SSA encompasses intelligence on adversary space operations; surveillance of all space objects and activities; detailed reconnaissance of specific space assets; monitoring space environmental conditions; monitoring cooperative space assets; and conducting integrated command, control, communications, processing, analysis, dissemination, and archiving activities. This program element fields, upgrades, operates and maintains Air Force sensors and information integration capabilities within the SSA network while companion program element 0604425F, Space Situation Awareness Systems, develops new network sensors and improved information integration capabilities across the network. Activities funded in this program element focus on surveillance of objects in earth orbit to aid tasks including satellite tracking; space object identification; tracking and cataloging; satellite attack warning; notification of satellite flyovers to U.S. forces; space treaty monitoring; and technical intelligence gathering.

The Sensor Life Extension Programs (SLEPs) project funds efforts to upgrade and extend the lifetimes of operational Space Situation Awareness (SSA) sensors, as needed. These SLEPs include, but are not limited to, programs which, when combined with routine technological renewal, extend the serviceable life of assets and maintain critical capability by replacing aging and increasingly unsustainable components with modern equipment. SLEPs may incorporate equipment which inherently includes technological advances resulting in enhanced or increased capabilities. In addition, the SLEP itself may be designed to increase capabilities not currently realized. Our current on-going efforts, Eglin, Haystack Ultra-wideband Satellite Imaging Radar (HUSIR), Ground-based Electro Optics Deep Space Surveillance (GEODSS) and Globus II are representative of sensor systems upgraded in the SLEP project. As the need arises in the execution year, funds in this project may be used to begin sensor life extension programs on additional efforts.

These efforts are in Budget Activity 7, Operational System Development, because they develop modifications for operational SSA sensors.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305940F: <i>Space Situation Awareness Operations</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	15.579	54.648	0.000	0.000	0.000
Current President's Budget	15.579	53.805	43.838	0.000	43.838
Total Adjustments	0.000	-0.843	43.838	0.000	43.838
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	-0.843			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	43.838	0.000	43.838

Change Summary Explanation

FY11: The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305940F: <i>Space Situation Awareness Operations</i>	PROJECT 67A017: <i>Sensor Service Life Extension Programs</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
67A017: <i>Sensor Service Life Extension Programs</i>	15.579	53.805	43.838	0.000	43.838	26.744	31.486	81.568	69.969	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Space Situational Awareness (SSA) is knowledge of all aspects of space related to operational sensing. The foundation for space control, SSA encompasses intelligence on adversary space operations; surveillance of all space objects and activities; detailed reconnaissance of specific space assets; monitoring space environmental conditions; monitoring cooperative space assets; and conducting integrated command, control, communications, processing, analysis, dissemination, and archiving activities. This program element fields, upgrades, operates and maintains Air Force sensors and information integration capabilities within the SSA network while companion program element 0604425F, Space Situation Awareness Systems, develops new network sensors and improved information integration capabilities across the network. Activities funded in this program element focus on surveillance of objects in earth orbit to aid tasks including satellite tracking; space object identification; tracking and cataloging; satellite attack warning; notification of satellite flyovers to U.S. forces; space treaty monitoring; and technical intelligence gathering.

The Sensor Life Extension Programs (SLEPs) project funds efforts to upgrade and extend the lifetimes of operational Space Situation Awareness (SSA) sensors, as needed. These SLEPs include, but are not limited to, programs which, when combined with routine technological renewal, extend the serviceable life of assets and maintain critical capability by replacing aging and increasingly unsustainable components with modern equipment. SLEPs may incorporate equipment which inherently includes technological advances resulting in enhanced or increased capabilities. In addition, the SLEP itself may be designed to increase capabilities not currently realized. Our current on-going efforts, Eglin, Haystack Ultra-wideband Satellite Imaging Radar (HUSIR), Ground-based Electro Optics Deep Space Surveillance (GEODSS) and Globus II are representative of sensor systems upgraded in the SLEP project. As the need arises in the execution year, funds in this project may be used to begin sensor life extension programs on additional efforts.

These efforts are in Budget Activity 7, Operational System Development, because they develop modifications for operational SSA sensors.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305940F: <i>Space Situation Awareness Operations</i>	PROJECT 67A017: <i>Sensor Service Life Extension Programs</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Complete connection of sub-assemblies. Perform site preparation. Remove Radome, old antenna and equipment. Reskin the Radome and refurbish equipment to meet HUSIR requirements. Install back structure and assemblies, and perform yoke modifications. Replace the Radome and clean up site.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Complete installation of radar panels. Perform radar integration. Conduct and complete radar alignment, integration, and acceptance tests. Accept Radar.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>						
<p>MAJOR THRUST: Ground Based Electro-Optical Deep Space Surveillance System (GEODSS) Service Life Extension Program. Replace aging transmitter subsystems which are becoming unsupportable (some part...</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: N/A</p> <p><i>FY 2010 Plans:</i> In FY 2010: Award contract, conduct system requirements review, initiate system design and begin hardware and software trade studies.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Complete hardware and software trade studies, finish design and conduct design reviews, start software conversion and purchase hardware.</p>		0.000	6.695	12.507	0.000	12.507

UNCLASSIFIED

R-1 Line Item #217

Page 5 of 14

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force							DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0305940F: <i>Space Situation Awareness Operations</i>			PROJECT 67A017: <i>Sensor Service Life Extension Programs</i>					
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A											
MAJOR THRUST: Globus II Service Life Extension Program. Replace aging and unsustainable hardware groups including the transmitter, mission critical computing resources (MCCR), and receiver-excite...						0.000	3.726	5.196	0.000	5.196	
<i>FY 2009 Accomplishments:</i> In FY 2009: N/A											
<i>FY 2010 Plans:</i> In FY 2010: Award contract for Increment I to replace the transmitter hardware/software group and initiate the design effort.											
<i>FY 2011 Base Plans:</i> In FY 2011: Continue Increment I and conduct design reviews. Prepare for initiation of Increment II in FY 2012.											
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A											
Accomplishments/Planned Programs Subtotals						15.579	53.805	43.838	0.000	43.838	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (7334): <i>Eglin Procurement</i>	0.000	0.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE Not Provided (7346): <i>GEODSS Procurement</i>	0.000	0.000	2.248	0.000	2.248	0.000	5.391	0.000	1.659	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305940F: <i>Space Situation Awareness Operations</i>	PROJECT 67A017: <i>Sensor Service Life Extension Programs</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (7358): <i>Globus II Procurement</i>	0.000	0.000	0.000	0.000	0.000	5.759	0.000	0.000	32.872	0.000	0.000

D. Acquisition Strategy

The Eglin SLEP effort is replacing key radar items via an option on the System Engineering, Sustainment and Modernization (SENSOR) contract, competitively awarded to ITT Industries (now ITT Corporation) in 2002. The Air Force uses the SENSOR contract for sustaining and upgrading various Air Force radars, including the Eglin radar.

The Massachusetts Institute of Technology's Lincoln Laboratory (MIT/LL), a non-profit Federally-Funded Research & Development Center, performs the Haystack upgrade effort under a master contract with the Electronics System Center, in conjunction with support from other agencies as required. This effort is classified as applied research under that contract. MIT/LL transferred ownership of the radar to the Air Force but continues to operate it as part of its Lincoln Space Surveillance Complex per contract with the Air Force. MIT/LL will be responsible for operations and sustainment of the upgraded Haystack radar.

The GEODSS SLEP will be awarded as an option on the System Engineering and Sustainment Integrator (SENSOR) contract, competitively awarded to ITT Industries (now ITT Corporation) in 2002. The GEODSS SLEP will use an incremental development and deployment strategy to reduce risk.

The Globus II SLEP will be awarded as an option on the System Engineering and Sustainment Integrator (SENSOR) contract, competitively awarded to ITT Industries (now ITT Corporation) in 2002. The Globus II SLEP will use an incremental development and deployment strategy to reduce risk.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305940F: <i>Space Situation Awareness Operations</i>	PROJECT 67A017: <i>Sensor Service Life Extension Programs</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Eglin architecture development and life extension	C/CPAF	ITT Corporation Colorado Springs, CO	36.226	18.831	Oct 2009	16.949	Oct 2010	0.000		16.949	Continuing	Continuing	0.000
Haystack radar upgrade design and build	SS/FP	MIT Lincoln Laboratory Lexington, MA	35.841	18.793	Oct 2009	3.518	Oct 2010	0.000		3.518	Continuing	Continuing	0.000
GEOSS design, development and life extension	C/CPAF	ITT Corporation Colorado Springs, CO	0.000	4.507	May 2010	6.906	Oct 2010	0.000		6.906	Continuing	Continuing	0.000
Globus II development and life extension	C/CPAF	ITT Corporation Colorado Springs, CO	0.000	2.977	Jul 2010	4.011	Oct 2011	0.000		4.011	Continuing	Continuing	0.000
Eglin Lincoln Lab technical support	SS/FP	MIT Lincoln Laboratory Lexington, MA	0.270	0.125	Nov 2009	0.125	Nov 2010	0.000		0.125	Continuing	Continuing	0.000
Subtotal			72.337	45.233		31.509		0.000		31.509			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305940F: <i>Space Situation Awareness Operations</i>	PROJECT 67A017: <i>Sensor Service Life Extension Programs</i>
--	--	---

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development review and management/L3	C/FP	L3 Engility Billerica, MA	1.335	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
Development review and management/PASS	C/FP	Odyssey Systems Wakefield, MA	2.067	1.187	Feb 2010	1.234	Feb 2011	0.000		1.234	Continuing	Continuing	0.000
Technical review and management/ETASS	C/FP	Jacobs Technology Tullahoma, TN	2.563	1.736	Jan 2010	2.128	Jan 2011	0.000		2.128	Continuing	Continuing	0.000
Specialized Cost Services	C/FP	Tecolote Research Inc Goleta, CA	0.000	0.218	Mar 2010	0.222	Mar 2011	0.000		0.222	Continuing	Continuing	0.000
Program Office Support	Various/ Various	Electronic Systems Center Hanscom AFB, MA and Peterson AFB, CO	4.360	5.431	Nov 2009	8.745	Nov 2010	0.000		8.745	Continuing	Continuing	0.000
Subtotal			10.325	8.572		12.329		0.000		12.329			0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305940F: <i>Space Situation Awareness Operations</i>	PROJECT 67A017: <i>Sensor Service Life Extension Programs</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total		Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date			
Test Support	Various/ Various	17th Test SQ SAFB, CO	0.074	0.000		0.000		0.000		0.000		0.000	0.074	0.000
Subtotal			0.074	0.000		0.000		0.000		0.000		0.000	0.074	0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	82.736	53.805		43.838		0.000		43.838			0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

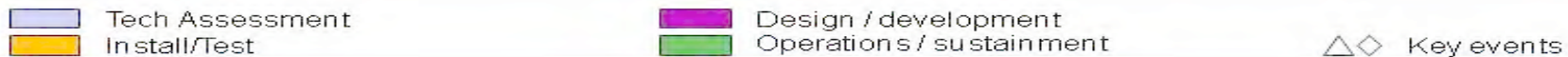
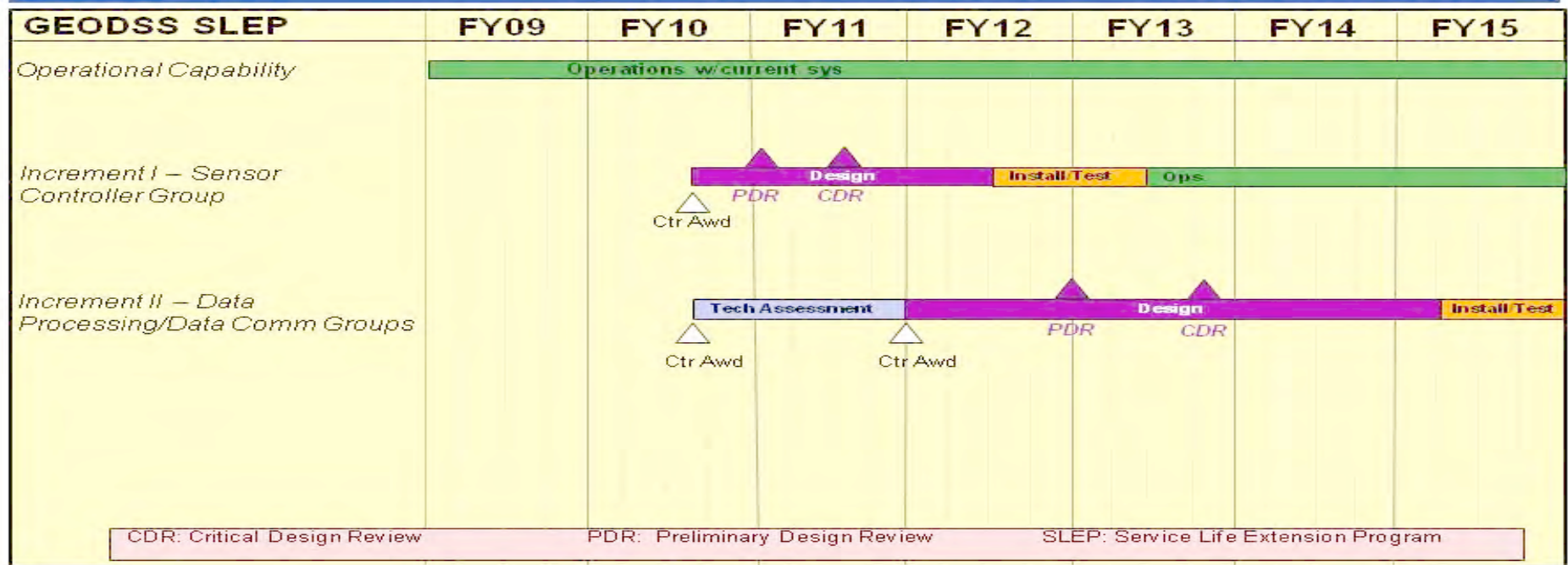
PE 0305940F: *Space Situation Awareness Operations*

PROJECT

67A017: *Sensor Service Life Extension Programs*



SSA Programs GEODSS SLEP Schedule



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

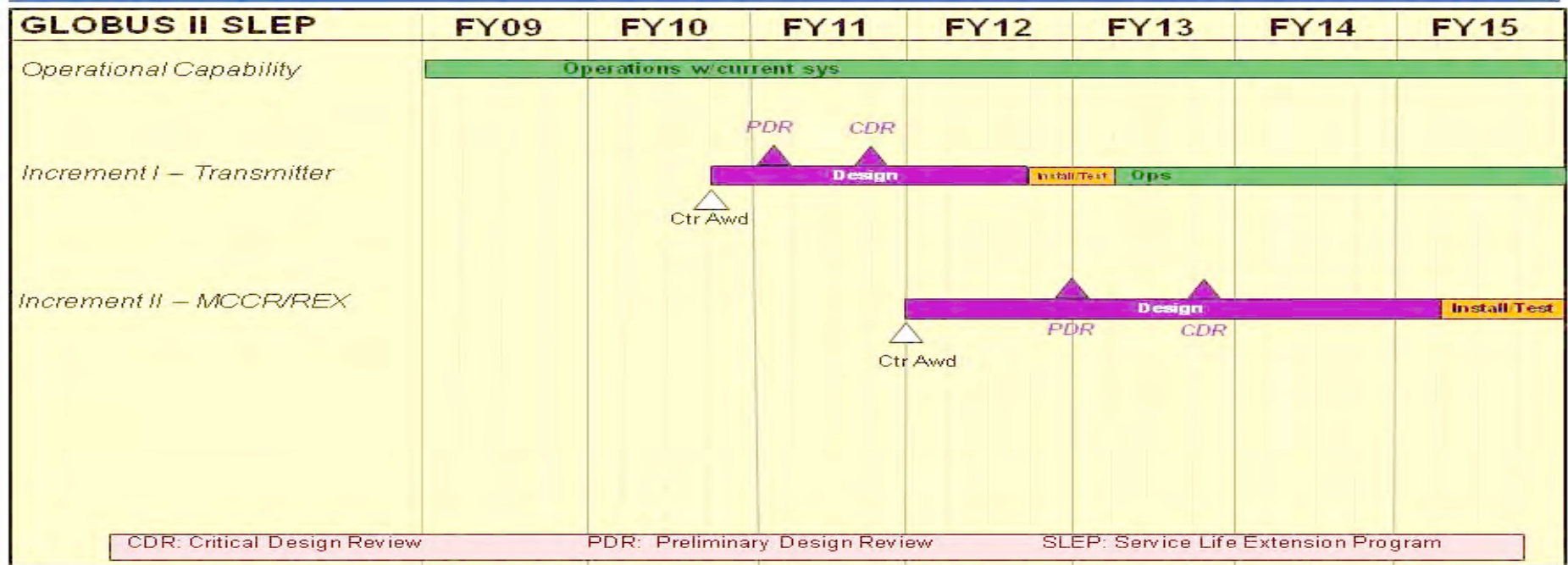
PE 0305940F: *Space Situation Awareness Operations*

PROJECT

67A017: *Sensor Service Life Extension Programs*



SSA Programs GLOBUS II SLEP Schedule



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

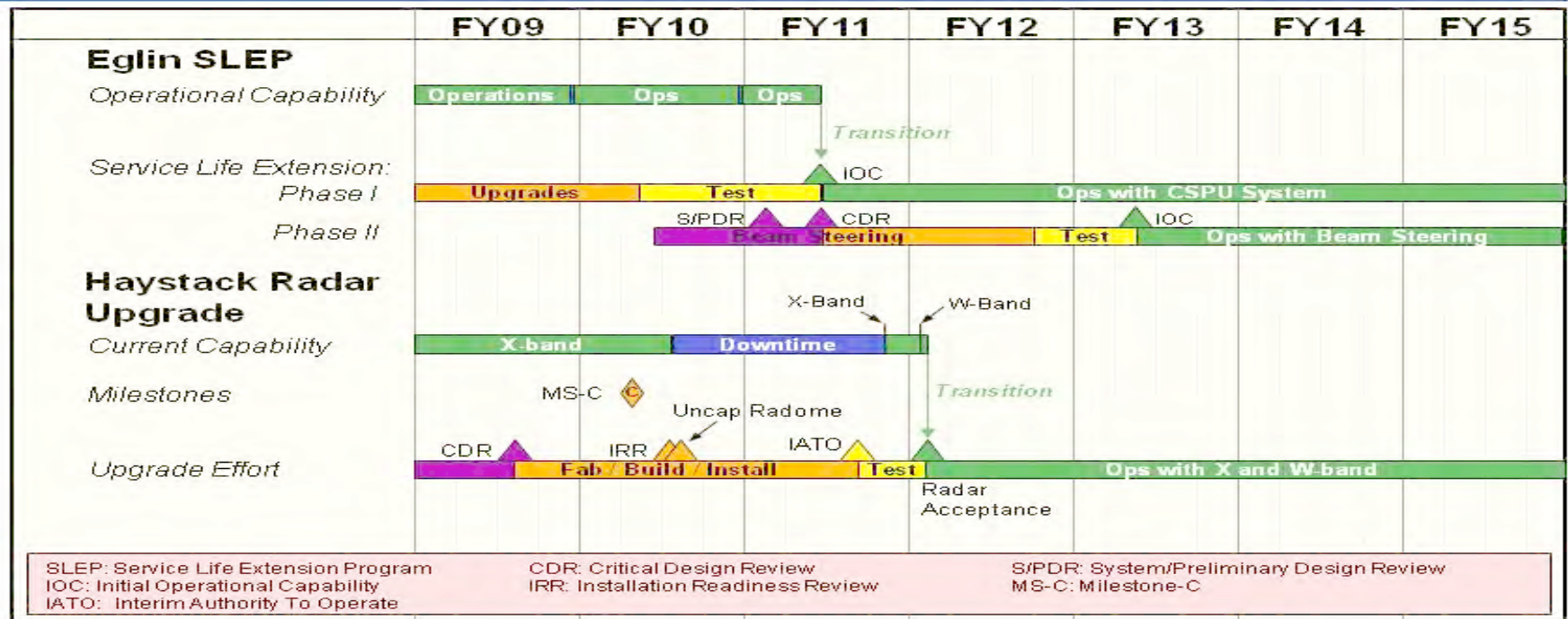
PE 0305940F: Space Situation Awareness Operations

PROJECT

67A017: Sensor Service Life Extension Programs



SSA Programs Sensor SLEPs Schedule



SLEP: Service Life Extension Program
 IOC: Initial Operational Capability
 IATO: Interim Authority To Operate
 CDR: Critical Design Review
 IRR: Installation Readiness Review
 S/PDR: System/Preliminary Design Review
 MS-C: Milestone-C

- Concept activities
- Production / fielding
- Design / development
- Operations / sustainment
- Integration / test
- Key events

UNCLASSIFIED

R-1 Line Item #217

Page 13 of 14

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305940F: <i>Space Situation Awareness Operations</i>	PROJECT 67A017: <i>Sensor Service Life Extension Programs</i>
--	--	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Eglin Phase II PDR	1	2011	1	2011
Eglin Phase II CDR	2	2011	2	2011
Eglin Phase I CSPU IOC	2	2011	2	2011
HUSIR CDR	1	2009	3	2009
HUSIR Milestone C	2	2010	2	2010
HUSIR Installation Readiness Review	3	2010	3	2010
Uncap Haystack Radome	3	2010	3	2010
HUSIR Antenna Complete	4	2011	4	2011
HUSIR FAB/Build/Install	3	2009	3	2011
HUSIR Test	3	2011	4	2011
GEODSS Contract Awards	3	2010	3	2010
GEODSS Increment I PDR	1	2011	1	2011
GEODSS Increment I CDR	3	2011	3	2011
Globus II Increment 1 Contract Award	4	2010	4	2010
Globus II Increment I PDR	1	2011	1	2011
Globus II Increment I CDR	4	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0307141F: <i>NASS, IO TECH INTEGRATION & TOOL DEV</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	18.042	29.788	21.912	0.000	21.912	24.011	22.230	21.872	20.141	Continuing	Continuing
674871: <i>Information Operations Technology</i>	18.042	29.788	21.912	0.000	21.912	24.011	22.230	21.872	20.141	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Joint Functional Component Command Network Warfare (JFCC-NW) responsibilities include planning, integrating, and coordinating computer network warfare capabilities; operational and tactical level planning and day-to-day employment of assigned and attached Computer Network Attack (CNA) forces; integration of CNA forces with Computer Network Defense (CND) forces and planning and coordination of network attack capabilities that have trans-regional effects or that directly support national objectives; providing CNA support for assigned missions and CNA planning and integration in support of other combatant commanders as directed.

This project funds research, development, testing and systems modifications of the technologies and capabilities that allow US Strategic Command (USSTRATCOM) to plan, facilitate coordination and integration, deconflict, and synchronize DoD Computer Network Operations (CNO). Activities also include studies and analysis to support both current program planning and execution and future program planning. This program also provides the ability for other Combatant Commanders (COCOMs) to conduct CNO planning. The JFCC-NW accomplishes part of its mission via systems engineering, testing and development across two primary functions: Net Warfare (NW) Assurance, Risk Assessment, and Safeguards (NWARS); and, requirements, capabilities, and gap analysis. Specifically, the NWARS function provides world-class "assurance-in-depth" products and services enabling COCOMs to confidently, legally, safely, and securely apply CNA capabilities as one of the elements of national power. The NWARS function is further subdivided into NW Risk Assessment and Mitigation (NRAM), Computer Network Operations Test and Evaluation (CNOTE), and computer network technical assurance program. Further detail is classified and can be provided upon request.

JFCC-NW provides support for headquarters USSTRATCOM and other geographic and functional COCOMs' exercise, wargames, and experimentation requirements. JFCC-NW integrates and synchronizes its effort with USSTRATCOM's development of network warfare military utility assessments, research, and development efforts, and advocacy of capability needs for the Joint Capabilities Integration Development System (JCIDS) process.

JFCC-NW supports the Information Operations (IO) community by providing a cadre of experts on CNA technology and its use and renders technical assistance in the development, review and coordination of CNA plans and operations.

JFCC-NW coordinates cyber warfare capability research and development in order to achieve global military objectives. JFCC-NW specifically is responsible for advocating on behalf of the COCOMs for cyber warfare capability development; partnering with the cyber warfare development community to seek resource advocacy

UNCLASSIFIED

R-1 Line Item #218

Page 1 of 11

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	PE 0307141F: <i>NASS, IO TECH INTEGRATION & TOOL DEV</i>

from STRATCOM and fund cyber warfare capability development with Service sponsorship and coordination; focusing capability developer's efforts on addressing COCOM requirements; increasing the collaboration between Computer Network Attack (CNA) developers, intelligence providers, and operational planners to shorten the development cycle; transferring end-result capabilities to a Service Component or other organization so that capability can be operationalized; supporting research and development of CNA and Computer Network Defense-Response Action (CND-RA) capabilities and tools required by JFCC-NW to conduct operational planning activities, to include intelligence analysis and situational awareness aids, and exercise command and control of assigned cyber forces for mission execution.

JFCC-NW supports research and development of CNA/CND-RA capabilities based upon COCOM and JFCC-NW operational requirements to include supporting and conducting Quick Reaction Capability (QRC) development of CNA/CND-RA capabilities not currently under development in the Services or NSA. A small in-house development team will perform research in public domain, and harvest available Internet tools that can be quickly documented, evaluated, modified (if necessary), and operationally tested in support of ongoing JFCC-NW operations. Additionally, this team will "re-tool" existing CNA/CND-RA capabilities to satisfy immediate JFCC-NW operational needs. This effort will provide a QRC development team that can support "gap" development for CNA/CND-RA operations as required.

Special Projects, Vulnerability Assessment provides for electric transmission analytical support to exploitable vulnerabilities.

This program is Budget Activity 7, Operational System Development, because it studies, develops and fields IO technologies.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	15.683	15.730	0.000	0.000	0.000
Current President's Budget	18.042	29.788	21.912	0.000	21.912
Total Adjustments	2.359	14.058	21.912	0.000	21.912
• Congressional General Reductions		-0.516			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	-0.288			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	2.800	14.862			
• SBIR/STTR Transfer	-0.441	0.000			
• Other Adjustments	0.000	0.000	21.912	0.000	21.912

UNCLASSIFIED

R-1 Line Item #218

Page 2 of 11

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0307141F: *NASS, IO TECH INTEGRATION & TOOL DEV*

Change Summary Explanation

FY10 \$14.862M increase and smaller FY11-15 increases are SECDEF-directed to support classified cyber initiative.

UNCLASSIFIED

R-1 Line Item #218

Page 3 of 11

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0307141F: <i>NASS, IO TECH</i> <i>INTEGRATION & TOOL DEV</i>				PROJECT 674871: <i>Information Operations Technology</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674871: <i>Information Operations Technology</i>	18.042	29.788	21.912	0.000	21.912	24.011	22.230	21.872	20.141	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Joint Functional Component Command Network Warfare (JFCC-NW) responsibilities include planning, integrating, and coordinating computer network warfare capabilities; operational and tactical level planning and day-to-day employment of assigned and attached Computer Network Attack (CNA) forces; integration of CNA forces with Computer Network Defense (CND) forces and planning and coordination of network attack capabilities that have trans-regional effects or that directly support national objectives; providing CNA support for assigned missions and CNA planning and integration in support of other combatant commanders as directed.

This project funds research, development, testing and systems modifications of the technologies and capabilities that allow US Strategic Command (USSTRATCOM) to plan, facilitate coordination and integration, deconflict, and synchronize DoD Computer Network Operations (CNO). Activities also include studies and analysis to support both current program planning and execution and future program planning. This program also provides the ability for other Combatant Commanders (COCOMs) to conduct CNO planning. The JFCC-NW accomplishes part of its mission via systems engineering, testing and development across two primary functions: Net Warfare (NW) Assurance, Risk Assessment, and Safeguards (NWARS); and, requirements, capabilities, and gap analysis. Specifically, the NWARS function provides world-class "assurance-in-depth" products and services enabling COCOMs to confidently, legally, safely, and securely apply CNA capabilities as one of the elements of national power. The NWARS function is further subdivided into NW Risk Assessment and Mitigation (NRAM), Computer Network Operations Test and Evaluation (CNOTE), and computer network technical assurance program. Further detail is classified and can be provided upon request.

JFCC-NW provides support for headquarters USSTRATCOM and other geographic and functional COCOMs' exercise, wargames, and experimentation requirements. JFCC-NW integrates and synchronizes its effort with USSTRATCOM's development of network warfare military utility assessments, research, and development efforts, and advocacy of capability needs for the Joint Capabilities Integration Development System (JCIDS) process.

JFCC-NW supports the Information Operations (IO) community by providing a cadre of experts on CNA technology and its use and renders technical assistance in the development, review and coordination of CNA plans and operations.

JFCC-NW coordinates cyber warfare capability research and development in order to achieve global military objectives. JFCC-NW specifically is responsible for advocating on behalf of the COCOMs for cyber warfare capability development; partnering with the cyber warfare development community to seek resource advocacy

UNCLASSIFIED

R-1 Line Item #218

Page 4 of 11

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0307141F: <i>NASS, IO TECH</i> <i>INTEGRATION & TOOL DEV</i>	PROJECT 674871: <i>Information Operations Technology</i>
--	--	--

from STRATCOM and fund cyber warfare capability development with Service sponsorship and coordination; focusing capability developer's efforts on addressing COCOM requirements; increasing the collaboration between Computer Network Attack (CNA) developers, intelligence providers, and operational planners to shorten the development cycle; transferring end-result capabilities to a Service Component or other organization so that capability can be operationalized; supporting research and development of CNA and Computer Network Defense-Response Action (CND-RA) capabilities and tools required by JFCC-NW to conduct operational planning activities, to include intelligence analysis and situational awareness aids, and exercise command and control of assigned cyber forces for mission execution.

JFCC-NW supports research and development of CNA/CND-RA capabilities based upon COCOM and JFCC-NW operational requirements to include supporting and conducting Quick Reaction Capability (QRC) development of CNA/CND-RA capabilities not currently under development in the Services or NSA. A small in-house development team will perform research in public domain, and harvest available Internet tools that can be quickly documented, evaluated, modified (if necessary), and operationally tested in support of ongoing JFCC-NW operations. Additionally, this team will "re-tool" existing CNA/CND-RA capabilities to satisfy immediate JFCC-NW operational needs. This effort will provide a QRC development team that can support "gap" development for CNA/CND-RA operations as required.

Special Projects, Vulnerability Assessment provides for electric transmission analytical support to exploitable vulnerabilities.

This program is Budget Activity 7, Operational System Development, because it studies, develops and fields IO technologies.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: NRAM, CNOTE and Technical Assurance programs. <i>FY 2009 Accomplishments:</i> In FY 2009: Provided assurance-in-depth products enabling COCOMs to confidently, legally, safely, and securely apply CNA capabilities. These software tools are utilized by both the NW NRAM and CNOTE programs. <i>FY 2010 Plans:</i> In FY 2010: Continues to provide assurance-in-depth products enabling COCOMs to confidently, legally, safely, and securely apply CNA capabilities. These software tools are utilized by both the NW NRAM and CNOTE programs.	8.137	10.076	9.053	0.000	9.053

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0307141F: <i>NASS, IO TECH</i> <i>INTEGRATION & TOOL DEV</i>	PROJECT 674871: <i>Information Operations Technology</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 030714F: <i>Joint HQ</i> <i>Information Operations, (O&M)</i>	17.340	0.951	0.180	0.000	0.180	0.565	0.678	0.695	0.713	0.000	0.000

D. Acquisition Strategy

Contracts will be awarded under full and open competition whenever possible. Variations of both Fixed Price (FP) and Cost Plus (CP) contracting vehicles will be used.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0307141F: <i>NASS, IO TECH</i> <i>INTEGRATION & TOOL DEV</i>	PROJECT 674871: <i>Information Operations Technology</i>
--	--	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	0.000	0.000	0.000			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

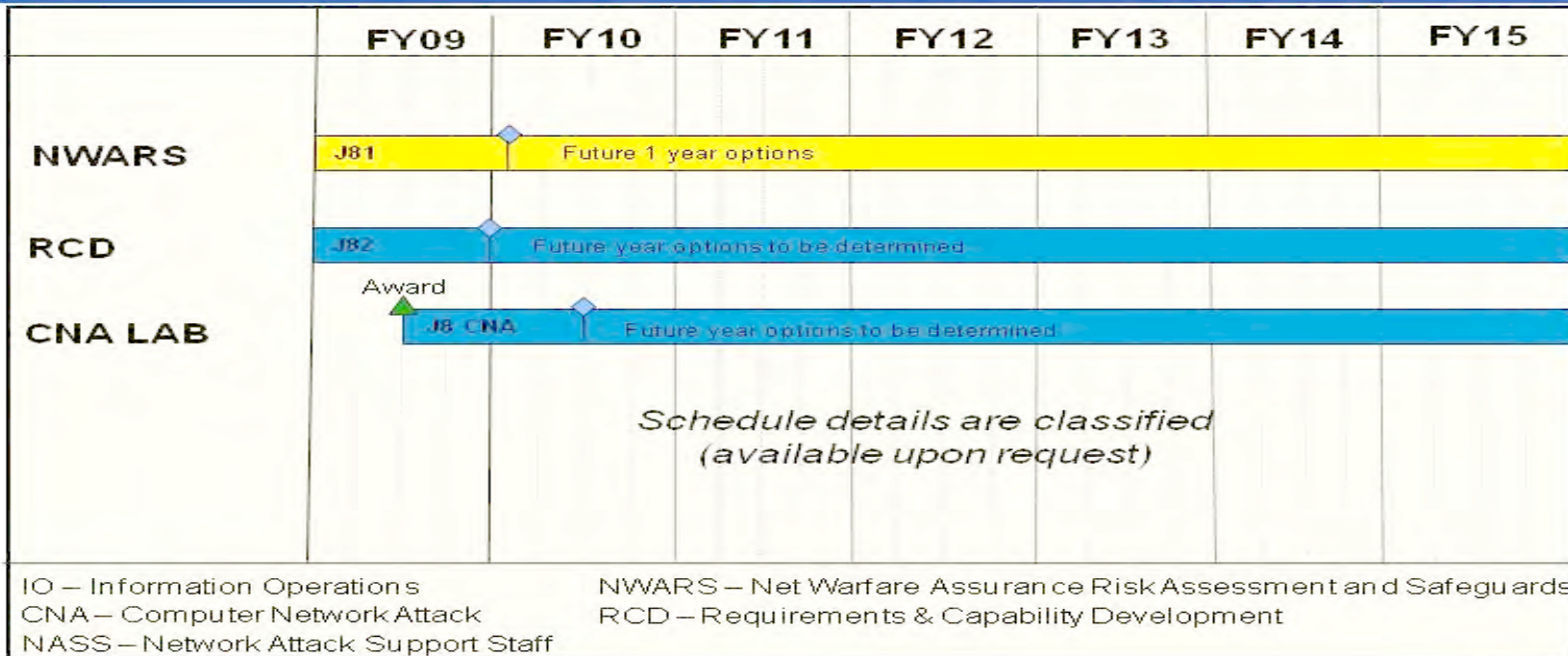
PE 0307141F: *NASS, IO TECH
 INTEGRATION & TOOL DEV*

PROJECT

674871: *Information Operations Technology*



JFCC-NW NASS IO TECH INTEGRATION & TOOL DEVELOPMENT



Concept activities

Integrate / test

Key events

PB11 R-Docs

UNCLASSIFIED

R-1 Line Item #218

Page 10 of 11

Volume 3 - 1278

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0307141F: *NASS, IO TECH*
INTEGRATION & TOOL DEV

PROJECT

674871: *Information Operations Technology*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
J81 -Net Warfare Assurance, Risk Assessment and Safeguards	1	2009	4	2011
J82 -Requirements and Capability Development	1	2009	4	2011
J8 - Computer Network Attack Lab	3	2009	4	2011

UNCLASSIFIED

R-1 Line Item #218

Page 11 of 11

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0308699F: <i>Shared Early Warning System</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	3.060	3.047	2.952	0.000	2.952	1.679	1.210	1.212	1.223	Continuing	Continuing
674838: <i>Shared Early Warning System</i>	3.060	3.047	2.952	0.000	2.952	1.679	1.210	1.212	1.223	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Shared Early Warning System (SEWS) is the result of Presidential foreign policy initiatives beginning in 1996. The SEWS continues to provide Theater Combatant Commanders and foreign nation partners direct operational benefit by improving the architectural design and equipment thereby providing enhanced mission capabilities (i.e., expanding coverage, integration with active defense systems, & radar integration). Foreign partner arrangements are negotiated with individual countries on a bilateral basis to provide selected region-specific missile warning information. To enhance mission capability the SEWS program tests: the Integrated Broadcast Service (IBS) migration to Common Interactive Broadcast (CIB), mandatory crypto upgrades, SEWS integration with various radar systems, and the transition to "coalition-based" warning. SEWS utilizes Federally Funded Research & Development Centers (FFRDC), Engineering and Technology Acquisition Support Services (ETASS), and Advisory and Assistance Services (A&AS) contractors to support design, development, and acquisition of a common SEWS architecture to enhance mission capability of existing and future partners; enhance development of a multi-lingual, web-based infrastructure to provide Pre-Launch Notification System information; site preparation for additional systems, as required, and posture for the design, development, and test of a Joint Data Exchange Center (JDEC) in Moscow, Russia.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7 - Operational System Development, because it supports work on currently operating systems and/or upgrades still in engineering development.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0308699F: <i>Shared Early Warning System</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	3.060	3.082	0.000	0.000	0.000
Current President's Budget	3.060	3.047	2.952	0.000	2.952
Total Adjustments	0.000	-0.035	2.952	0.000	2.952
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	-0.035			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	2.952	0.000	2.952

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0308699F: <i>Shared Early Warning System</i>	PROJECT 674838: <i>Shared Early Warning System</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674838: <i>Shared Early Warning System</i>	3.060	3.047	2.952	0.000	2.952	1.679	1.210	1.212	1.223	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Shared Early Warning System (SEWS) is the result of Presidential foreign policy initiatives beginning in 1996. The SEWS continues to provide Theater Combatant Commanders and foreign nation partners direct operational benefit by improving the architectural design and equipment thereby providing enhanced mission capabilities (i.e., expanding coverage, integration with active defense systems, & radar integration). Foreign partner arrangements are negotiated with individual countries on a bilateral basis to provide selected region-specific missile warning information. To enhance mission capability the SEWS program tests: the Integrated Broadcast Service (IBS) migration to Common Interactive Broadcast (CIB), mandatory crypto upgrades, SEWS integration with various radar systems, and the transition to "coalition-based" warning. SEWS utilizes Federally Funded Research & Development Centers (FFRDC), Engineering and Technology Acquisition Support Services (ETASS), and Advisory and Assistance Services (A&AS) contractors to support design, development, and acquisition of a common SEWS architecture to enhance mission capability of existing and future partners; enhance development of a multi-lingual, web-based infrastructure to provide Pre-Launch Notification System information; site preparation for additional systems, as required, and posture for the design, development, and test of a Joint Data Exchange Center (JDEC) in Moscow, Russia.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7 - Operational System Development, because it supports work on currently operating systems and/or upgrades still in engineering development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Development of SEWS common architecture and SEWS initiatives as identified by theater commanders.	3.060	3.047	2.952	0.000	2.952

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0308699F: <i>Shared Early Warning System</i>	PROJECT 674838: <i>Shared Early Warning System</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Will continue to design, develop, test and investigate a number of significant system upgrades, to include but not limited to changes to the IBS broadcast and the accompanying USB Embedded National Tactical Radio (ENTR) radios along with the IBS Common Message Format. Will complete a demonstration of the remote data and PID monitoring capability previously developed. Will begin to implement a study of how to integrate SEW-S/SEW-R data. Will develop a deployable SEW System (DSS) prototype. Will evaluate alternatives to the aging bisynchronous serial tunneling (BSTUN) protocol currently used by SEWS. Will continue to support all phases of the test process and increase ISC2 SE support and GCCS support to SEW system development. Will continue to posture for possible deployment of the JDEC system in Moscow and development of a multi-lingual, web-based infrastructure to provide Pre-Launch Notification System information.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	3.060	3.047	2.952	0.000	2.952

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (8159): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0308699F: <i>Comm Elect Mods, (OPAF)</i>	3.715	0.238	0.312	0.000	0.312	0.318	0.323	0.329	0.333	0.000	0.000

D. Acquisition Strategy

The acquisition strategy builds on existing capabilities, using evolutionary acquisition and spiral development, to modernize and sustain SEWS.

UNCLASSIFIED

R-1 Line Item #219

Page 5 of 10

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0308699F: <i>Shared Early Warning System</i>	PROJECT 674838: <i>Shared Early Warning System</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0308699F: <i>Shared Early Warning System</i>	PROJECT 674838: <i>Shared Early Warning System</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Development	C/CPAF	Lockheed Martin Colorado Springs, CO	15.808	1.408	Oct 2009	1.248	Oct 2010	0.000		1.248	Continuing	Continuing	Continuing
Integration & Modernization	MIPR	US Navy San Diego, CA	2.236	0.434	Feb 2010	0.352	Feb 2011	0.000		0.352	Continuing	Continuing	Continuing
Product Development	MIPR	Various Colorado Springs, CO	6.201	0.607	Jan 2010	0.763	Jan 2011	0.000		0.763	Continuing	Continuing	Continuing
Subtotal			24.245	2.449		2.363		0.000		2.363			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering	SS/CPFF	MITRE Colorado Springs, CO	4.271	0.160	Oct 2009	0.174	Oct 2010	0.000		0.174	Continuing	Continuing	Continuing
A&AS	TM	ETASS Colorado Springs, CO	7.172	0.430	Jan 2010	0.404	Jan 2011	0.000		0.404	Continuing	Continuing	Continuing
PMA	C/Various	AFMC/ESC	1.234	0.008	Oct 2009	0.011	Oct 2010	0.000		0.011	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0308699F: <i>Shared Early Warning System</i>	PROJECT 674838: <i>Shared Early Warning System</i>
--	---	--

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		Colorado Springs, CO											
Subtotal			12.677	0.598		0.589		0.000		0.589			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	36.922	3.047		2.952		0.000		2.952			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0308699F: *Shared Early Warning System*

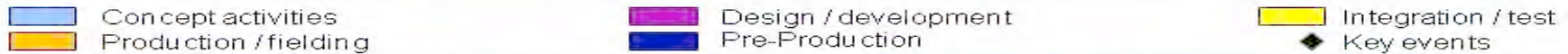
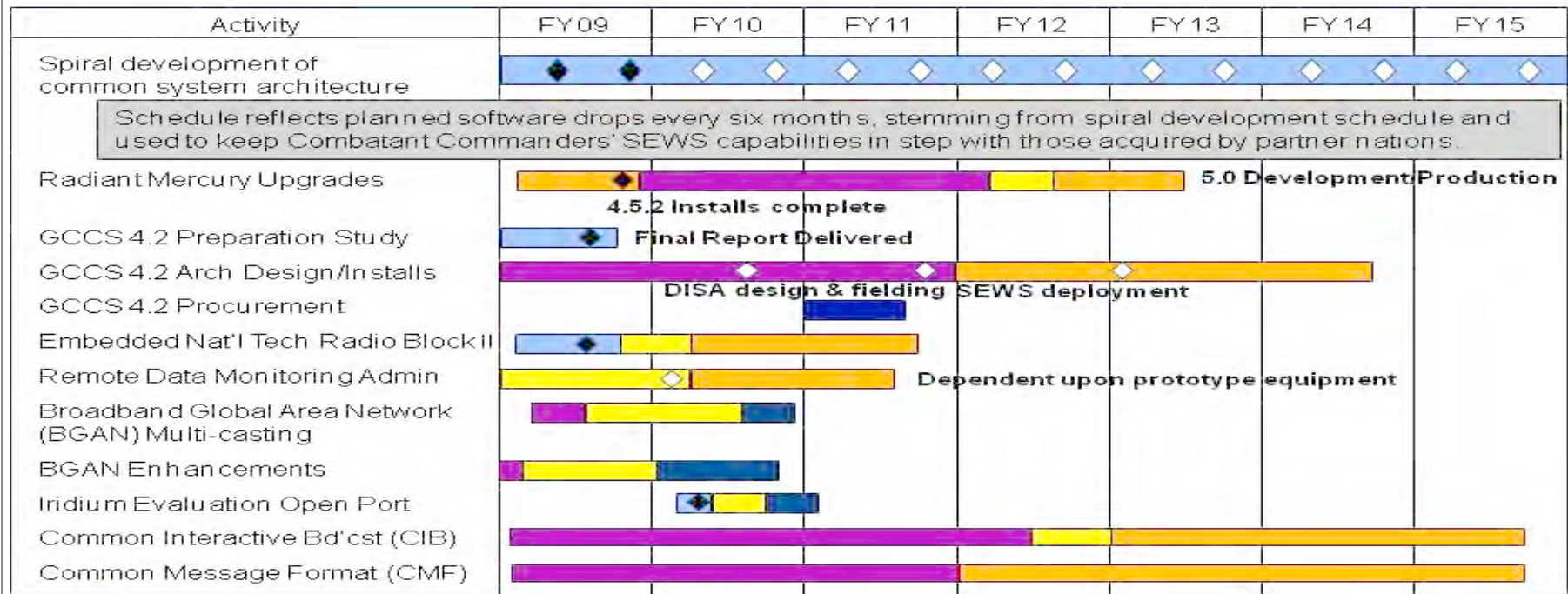
PROJECT

674838: *Shared Early Warning System*



U.S. AIR FORCE

SEWS Program Schedule



v3.00 20080609

Integrity - Service - Excellence

1

UNCLASSIFIED

R-1 Line Item #219

Page 9 of 10

Volume 3 - 1289

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0308699F: <i>Shared Early Warning System</i>	PROJECT 674838: <i>Shared Early Warning System</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Spiral development of common system architecture	1	2009	3	2011
Radiant Mercury 4.5.2 Upgrade Install Complete	4	2009	4	2009
GCCS 4.2 Preparation Study Final Report Delivered	3	2009	3	2009
GCCS 4.2 Architecture Design	1	2009	4	2011
Embedded Nat'l Tech Radio Block II	1	2009	3	2011
Remote Data Monitoring Adm	1	2009	2	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	168.736	109.250	113.107	0.000	113.107	4.840	5.658	0.000	0.000	Continuing	Continuing
674885: <i>Avionics Modernization Program (AMP)</i>	161.810	105.907	43.472	0.000	43.472	4.840	5.658	0.000	0.000	Continuing	Continuing
675243: <i>C-130 Initiatives</i>	6.926	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
675362: <i>AMP Phase II</i>	0.000	3.343	69.635	0.000	69.635	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This C-130 Airlift Squadrons' Program Element contains three Budget Program Activity Codes (BPACs): C-130 Avionics Modernization Program (AMP), C-130 AMP Phase II and C-130 Initiatives.

C-130 Avionics Modernization Program (AMP) will modernize the avionics suite and cockpit configuration of 221 Combat Delivery C-130s in order to meet the CNS/ATM and AF Nav/Safety mandates.

C-130 Initiatives is where the AF puts C-130 RDT&E funding for Congressional adds and new programs not covered by C-130 AMP or C-130 AMP Phase II. See BPAC# 675362.

C-130 Avionics Modernization Program (AMP) Phase II will modernize the avionics suite and cockpit configurations of 74 AC/EC/MC/LC-130 Special Mission aircraft and 28 Combat Delivery C-130s in order to meet the CNS/ATM and AF Nav/Safety mandates. The funds in AMP Phase II represent the program office estimates and are awaiting completion of final contract negotiation for further definitization. The FY11 funds will enable initial contract award for risk reduction efforts. The complete program definition will be outlined in the FY12 budget submission

This program intends to leverage design efforts completed under AMP Phase I. USSOCOM's AC-130U and MC-130H/W will require SOF-unique capabilities integrated within AMP Phase II. Funds for these unique capabilities will be provided in MFP-11 and are not shown here.

Note: Funding for the Integration of C/EC/WC-130J fleets are NOT included here.

UNCLASSIFIED

R-1 Line Item #220

Page 1 of 24

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	179.760	109.250	0.000	0.000	0.000
Current President's Budget	168.736	109.250	113.107	0.000	113.107
Total Adjustments	-11.024	0.000	113.107	0.000	113.107
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-11.024	0.000	113.107	0.000	113.107

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 675243: C-130 Initiatives

Congressional Add: *Electromagnetic in-flight Prop Balancing Sys.*

Congressional Add: *C-130 AIRCAT Condition Based Maintenance (CBM+).*

Congressional Add Subtotals for Project: 675243

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	1.950	0.000
	3.136	0.000
	5.086	0.000
	5.086	0.000

Change Summary Explanation

1. Congress approved an FY09 OMNIBUS action that added \$12.726M here to pay the 2005 C-130 AMP protest settlement to Lockheed. In the FY10 appropriations, Congress rescinded \$19M of FY09 funds and also cut an additional \$19M from AMP's FY10 RDT&E request.

UNCLASSIFIED

R-1 Line Item #220

Page 2 of 24

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>				PROJECT 674885: <i>Avionics Modernization Program (AMP)</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674885: <i>Avionics Modernization Program (AMP)</i>	161.810	105.907	43.472	0.000	43.472	4.840	5.658	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

AMP has completed all Critical Design Reviews (CDR) for hardware and software requirements. Boeing completed the initial software production build with first flight in Aug 08. Developmental flight test was completed in Dec 09 with three test aircraft having completed 426 sorties, totaling 1273 flight hours with no Category One discrepancies. The retrofit to production configuration to support IOT&E of the first two test aircraft began in Jun 09 with retrofit completion by the end of 3rd quarter FY10. Developmental efforts for the AMP training requirements will continue through FY13. In addition, the C-130 AMP contract allows for special mission analysis, studies, and engineering effort in support of additional MDS and planning for future block upgrades.

The C-130 Avionics Modernization Program (AMP) consolidates and installs the mandated AF Navigation/Safety modifications, the Communications Navigation Surveillance/Air Traffic Management (CNS/ATM) capabilities and the C-130 Broad Area Review requirements on 221 of the AF's Combat Delivery C-130s. These mandated modifications are incorporated with various other Reliability, Maintainability, and Sustainability (RM&S) upgrades to include: installation and modification of fleet-wide radars, aircrew displays, dual autopilots, dual flight management systems and HF/UHF/VHF radios/data links. A C-130 AMP-equipped aircraft will be able to safely and effectively operate worldwide in today's and tomorrow's airspace. In addition to meeting CNS/ATM and Navigation/Safety requirements, AMP will also lower the cost of ownership and increase survivability of the Mobility Air Forces' (MAF) C-130 Combat Delivery fleet.

This fleet consists of three (3) different mission design series (MDS) aircraft to be modified by the AMP (C-130 H2, H2.5, and H3). Within each of these MDSs multiple configurations exist among the aircraft that will be modified with AMP. Today, these different models and cockpit configurations create significant logistics support and aircrew training inefficiencies. Also, these differences greatly complicate aircrew and aircraft scheduling and interoperability at forward operating locations. C-130 AMP standardizes the cockpit configurations and avionics suites for these different variants into a single cockpit configuration by installing a core avionics package with a common cockpit layout, thus eliminating many of these significant logistics, interoperability, and training problems. A number of C-130 Diminishing Manufacturing Sources (DMS) issues are addressed during System Development and Demonstration (SDD) as a result of the new hardware included in the AMP design. Boeing's DMS plan developed during SDD will be implemented during the production phases. Shown here are RDT&E funds for only C-130 AMP. (Note: The C/EC/WC-130J fleets are separately funded and not included here.)

UNCLASSIFIED

R-1 Line Item #220

Page 3 of 24

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>	PROJECT 674885: <i>Avionics Modernization Program (AMP)</i>
--	---	---

The SDD contract was awarded to The Boeing Company on 30 Jul 01. An Integrated Baseline Review (IBR) was conducted in January 02. From FY02-05, the combination of funding and requirements instability, coupled with increases in prime contractor development costs pushed AMP into reportable cost and schedule breaches. In Feb 07, SECAF notified Congress of a critical Nunn-McCurdy breach. In Jun 07, USD (AT&L) recertified AMP to Congress-albeit at a reduced profile of 222 aircraft, comprising the majority of the AMC/ANG/AFRC Combat Delivery fleets. The program was reduced to 221, due to loss of aircraft in June 2008.

Not certified within AMP were 166 Special Mission and C-130H1 Combat Delivery aircraft. These aircraft were placed in a separate modification program: C-130 AMP Phase II.

This project consists of low technical risk efforts supporting a stable design that has been proven in flight test and therefore was assigned Budget Activity Code 07.

Finally: funds are required to pay the settlement w/Lockheed over the 2005 protest agreement. In FY10, Congressional rescissions and reductions of \$37M in FY09 (\$18M) & FY10 (\$19M) resulted in an Air Force unfunded requirement to pay the Lockheed Martin Protest Settlement of \$19M

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: Complete design activities for software spirals and remaining Group A engineering data release for the H2, H2.5, and H3 configurations. Contractor also provide flight test support. ...</p> <p><i>FY 2009 Accomplishments:</i> In FY2009: Continued EMD aircraft retrofit efforts to include drawings updates, support lab integration efforts to government labs at WR-ALC (Warner Robins), Functional Configuration Audit (FCA) support. Also development, test, and delivery of Weapon Systems Trainers (WSTs) and Avionics Parts Task Trainer (APTT).</p> <p><i>FY 2010 Plans:</i> In FY2010: Continue lab integration and government user training at ALC, support drawing updates, complete system Functional Configuration Audit (FCA), and deliver Cockpit Familiarization Trainer (CFT).</p>	155.530	102.576	41.372	0.000	41.372

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>	PROJECT 674885: <i>Avionics Modernization Program (AMP)</i>
--	---	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (168): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The C-130 AMP contract was awarded 30 July 01 as a Cost-Plus Award Fee contract to develop and install AMP kits for the development aircraft and conduct developmental flight test. Restructure Engineering Change Proposal (ECP) 1302 was awarded to Boeing 20 Aug 03. The ECP rebaselined the program due to funding reductions in FYs 03/04 which resulted in delays in System Development and Demonstration (SDD) program exceeding 2 years. Revisions to the AF training system began in Jul 06 under the AMP contract. This effort will modify the various Training Programs, Courses, Weapons Systems Trainers, and Maintenance Trainers to the AMP configuration. Due to the Nunn-McCurdy certification, descoping of special mission aircraft MDS's, the C-130 AMP EMD required a 2nd restructure and rebaseline for the remaining program activities with a contract modification in Aug 08. The program office awarded two pre-milestone C kit buys in Sep 2008 under a Jul 08 OSD Acquisition Decision Memorandum (ADM). The program office is actively working with OSD to update the acquisition strategy and proceed with a Milestone C Review in the 2nd quarter of FY10.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>	PROJECT 674885: <i>Avionics Modernization Program (AMP)</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Boeing, Long Beach, CA	C/CPAF	Boeing Long Beach, CA	1,169.395	89.087	Nov 2009	37.138	Nov 2010	0.000		37.138	8.658	1,304.278	0.000
Subtotal			1,169.395	89.087		37.138		0.000		37.138	8.658	1,304.278	0.000

Remarks
Note: Funds shown here contain System Design & Development, ECO, AMP Training System Upgrades, Government Furnished Property (GFP), & the Award Fee.

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Support	TBD/TBD	TBD Wright Patterson AFB, OH	120.761	13.489		4.453		0.000		4.453	1.840	140.543	0.000
Subtotal			120.761	13.489		4.453		0.000		4.453	1.840	140.543	0.000

Remarks
Award Dates vary throughout the year depending on activity (Protest Settlements, TDY, Training, Internal Contractor Support, and SIF Nodes Delivery)

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>	PROJECT 674885: <i>Avionics Modernization Program (AMP)</i>
--	---	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Various	TBD/TBD	TBD Edwards AFB, CA	42.556	3.331	Nov 2009	1.881	Nov 2010	0.000		1.881	0.000	47.768	0.000
Subtotal			42.556	3.331				0.000		1.881	0.000	47.768	0.000

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Funds to pay settlement to Lockheed Martin	TBD/TBD	TBD Wright Patterson AFB, OH	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
AF reallocated funds within PE to support C130 Initiatives (Non-AMP)	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

Total Congressional reductions of \$37M in FY09 & FY10 results in requirement for additional funds to pay Lockheed Martin Protest Settlement \$19M.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>	PROJECT 674885: <i>Avionics Modernization Program (AMP)</i>

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,332.712	105.907	43.472	0.000	43.472	10.498	1,492.589	0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0401115F: C-130 AIRLIFT SQUADRONS

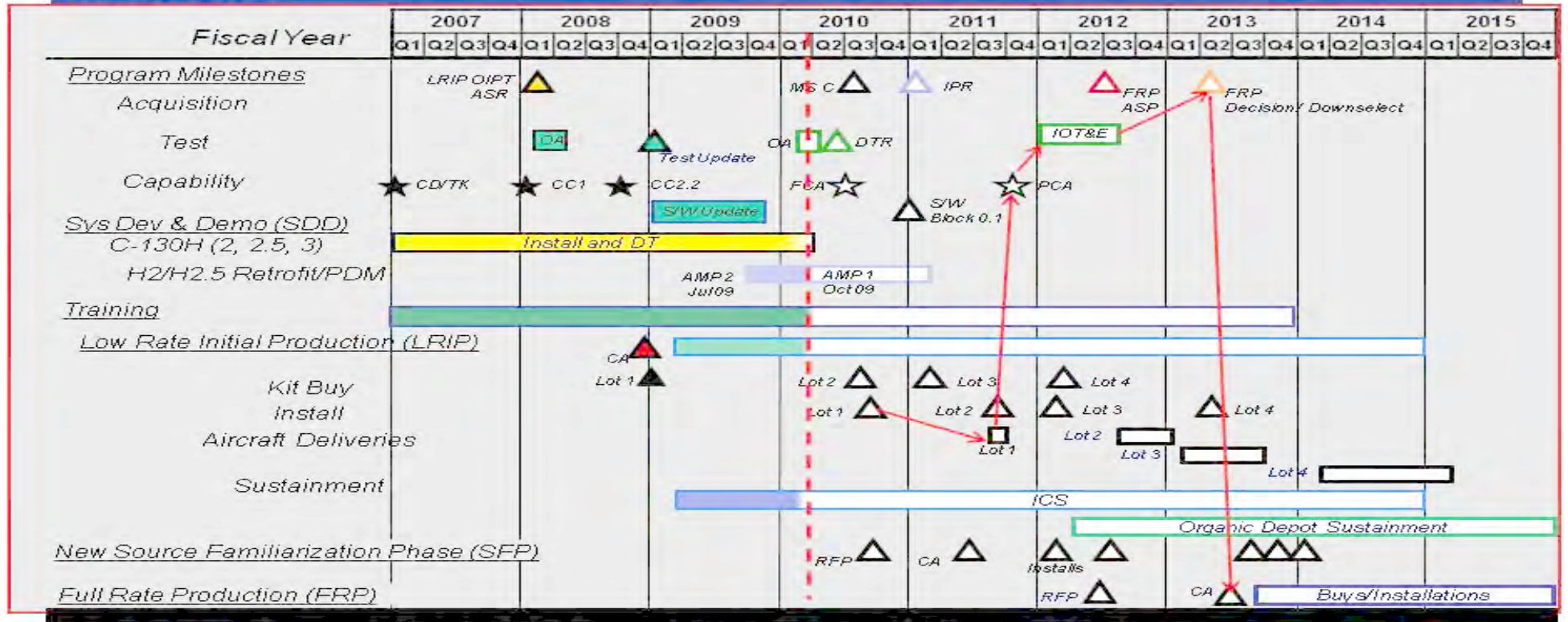
PROJECT

674885: Avionics Modernization Program (AMP)



C-130 AMP Program Schedule

Alt 2-Restore Full Funding – 2-2-0-6-10



As of: 7 Dec 09

Integrity - Service - Excellence

Critical Path →

UNCLASSIFIED

R-1 Line Item #220

Page 10 of 24

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>	PROJECT 674885: <i>Avionics Modernization Program (AMP)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
C-130H3 First Flight	2	2009	2	2009
Development Flight Test Complete	1	2010	1	2010
Functional Configuration Audit (FCA)	3	2010	3	2010

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>				PROJECT 675243: <i>C-130 Initiatives</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost	
675243: <i>C-130 Initiatives</i>	6.926	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0			
A. Mission Description and Budget Item Justification												
C-130 Congressional Adds of \$7.4M consist of \$3.2M for Automated Inspection Repair Corrosion and Aircraft Tracking (AIRCAT); \$2M for Electromagnetic In-flight Propeller Balancing System and \$2M for NP-2000 Propellers for ANG.												
B. Accomplishments/Planned Program (\$ in Millions)												
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total		
CONGRESIONAL ADD: NP-2000 Propellers for ANG. <i>FY 2009 Accomplishments:</i> In FY 2009: NP-2000 Propellers for ANG. <i>FY 2010 Plans:</i> In FY 2010: N/A. <i>FY 2011 Base Plans:</i> In FY 2011: N/A. <i>FY 2011 OCO Plans:</i> In FY2011 (OCO): N/A.						1.840	0.000	0.000	0.000	0.000		
Accomplishments/Planned Programs Subtotals						1.840	0.000	0.000	0.000	0.000		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>	PROJECT 675243: <i>C-130 Initiatives</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
Congressional Add: Electromagnetic in-flight Prop Balancing Sys. <i>FY 2009 Accomplishments:</i> In FY 2009: Electromagnetic in-flight Prop Balancing Sys. <i>FY 2010 Plans:</i> In FY 2010: N/A.	1.950	0.000
Congressional Add: C-130 AIRCAT Condition Based Maintenance (CBM+). <i>FY 2009 Accomplishments:</i> In FY 2009: C-130 AIRCAT Condition Based Maintenance (CBM+). <i>FY 2010 Plans:</i> In FY 2010: N/A.	3.136	0.000
Congressional Adds Subtotals	5.086	0.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (515): <i>None</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

AIRCAT contract awarded in Sep 08.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>	PROJECT 675243: <i>C-130 Initiatives</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AIRCAT System engineering development	C/FFP	TBD Warner Robins, GA	3.136	0.000		0.000		0.000		0.000	0.000	3.136	0.000
Subtotal			3.136	0.000		0.000		0.000		0.000	0.000	3.136	0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NP-2000 Propellers for ANG & EM In-Flight Prop Balancing Sys	Various/ Various	Various Various	3.790	0.000		0.000		0.000		0.000	0.000	3.790	0.000
Subtotal			3.790	0.000		0.000		0.000		0.000	0.000	3.790	0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		6.926	0.000	0.000	0.000	0.000	6.926	0.000

UNCLASSIFIED

R-1 Line Item #220

Page 14 of 24

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>	PROJECT 675243: <i>C-130 Initiatives</i>
--	---	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>	PROJECT 675243: <i>C-130 Initiatives</i>

	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Prop De-icing System Flight Test			█																													

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>	PROJECT 675243: <i>C-130 Initiatives</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Prop De-icing System Flight Test	3	2009	3	2009

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>	PROJECT 675362: <i>AMP Phase II</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675362: <i>AMP Phase II</i>	0.000	3.343	69.635	0.000	69.635	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The C-130 Avionics Modernization Program (AMP) Phase II consolidates and installs mandated AF Navigation/Safety modifications, Communications Navigation Surveillance/Air Traffic Management (CNS/ATM) capabilities, and C-130 Broad Area Review requirements on 102 C-130 aircraft (74 Special Mission AC/EC/LC/MC-130s and 28 Combat Delivery C-130H1s). The aircraft were part of AF's C-130 AMP since its inception in 2001 and will leverage AMP's core hardware and software, designed from the start to accommodate the unique requirements of the Special Mission aircraft. The funding for these aircraft was postponed until FY10 as a result of AMP's Nunn-McCurdy certification in Jun 2007.

These mandated modifications are incorporated with various other Reliability, Maintainability, and Sustainability (RM&S) upgrades to include installation of new radars, aircrew displays, dual autopilots, dual flight management systems and HF/UHF/VHF radios/data links. An AMP-equipped aircraft will be able to safely and effectively operate world-wide in today's and tomorrow's airspace. In addition, AMP Phase II will lower the cost of ownership and increase survivability for both the Mobility Air Forces (MAF) and Special Operations Forces (SOF) C-130 fleets.

The fleets consist of six (6) different mission design series (MDS) aircraft to be modified by the AMP Phase II (AC-130U, EC-130H, LC-130H, MC-130H, MC-130W, and C-130H1). Within each MDS, multiple configurations exist among the aircraft that will be modified. Today, different models and cockpit configurations create significant logistics support and aircrew training inefficiencies. Also, these differences greatly complicate aircrew and aircraft scheduling and interoperability at forward operating locations. C-130 AMP Phase II will standardize the cockpit configurations and avionics suites for these variants into a single cockpit configuration by installing the core AMP avionics package with a common cockpit layout, thus eliminating many of these significant logistics, interoperability and training problems. Also, many of the C-130 Diminishing Manufacturing Sources (DMS) issues are resolved as a result of new hardware included in the AMP Phase II design.

Shown here are RDT&E funds for only C-130 AMP Phase II. The funds represent program office estimates and are awaiting completion of final contract negotiation for further definitization. The funds enable initial contractual award for risk reduction efforts. Additional funds will be requested in FY12 POM. (Notes: This program intends to leverage design efforts completed under AMP, BPAC 674885, also known as AMP Phase I, which are separately funded and not shown here. USSOCOM's AC-130U and MC-130H/W required SOF-unique capabilities integrated with AMP Phase II. Funds for these capabilities will be provided in MFP-11 and are not shown here.)

UNCLASSIFIED

R-1 Line Item #220

Page 18 of 24

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>	PROJECT 675362: <i>AMP Phase II</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0401115F: <i>APAF, C-130 AMP Phase II, BP1100</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The AMP Phase II work is divided into short-term and long-term efforts. The short term effort meets near term CNS/ATM mandates and obsolescence. The long term and main effort will integrate AMP capabilities (aka AMP Phase I) onto each MDS in AMP Phase II, add SOF-unique capabilities (e.g. terrain following radar), and preserve the current unique capabilities. This program includes modifications to training and support systems. The long-term contractual actions are divided into two main parts. The first part updates preliminary design with sub-system risk reduction to provide decision knowledge for the second part, a traditional Engineering and Manufacturing Development effort. The long term effort leverages the existing AMP contract and core design, but segments activities to permit focus on each aircraft type.

This capability is considered a low technical risk from a stable design that has been proven in flight test and therefore was assigned Budget Activity Code 07.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>				PROJECT 675362: <i>AMP Phase II</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Short term radios, enhanced mode S, and voice/data recorder	C/Various	330th Aircraft Sustainment Wing Robins AFB	0.000	3.000		28.000		0.000		28.000	0.000	31.000	0.000
Long-term hardware and software design, integration, and test	SS/CPIF	Boeing Long Beach, CA	0.000	0.000		36.685	Jun 2011	0.000		36.685	Continuing	Continuing	Continuing
Subtotal			0.000	3.000		64.685		0.000		64.685			

Remarks

Note: Funds shown here contain SDD, ECO, Training System Upgrades and the Award Fee.

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Support Office	C/Various	Various Various	0.000	0.343		4.100		0.000		4.100	Continuing	Continuing	Continuing
Subtotal			0.000	0.343		4.100		0.000		4.100			

Remarks

Award dates vary throughout the year depending on activity (TDY, Training, Contractor Support)

UNCLASSIFIED

R-1 Line Item #220

Page 21 of 24

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>					PROJECT 675362: <i>AMP Phase II</i>				

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Various	Various/ Various	Various Various	0.000	0.000		0.850	Jun 2011	0.000		0.850	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.850		0.000		0.850			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		0.000	3.343	69.635	0.000	69.635		

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401115F: <i>C-130 AIRLIFT SQUADRONS</i>	PROJECT 675362: <i>AMP Phase II</i>

	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Short Term radios, enhanced mode S, and voice/data recorders								■	■	■	■	■																
Long term Material Development Decision							■																					
Long term Risk Reduction Contract Award											■																	

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0401115F: *C-130 AIRLIFT SQUADRONS*

PROJECT

675362: *AMP Phase II*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Short Term radios, enhanced mode S, and voice/data recorders	4	2010	4	2011
Long term Material Development Decision	3	2010	3	2010
Long term Risk Reduction Contract Award	3	2011	3	2011

UNCLASSIFIED

R-1 Line Item #220

Page 24 of 24

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	110.191	85.266	58.990	0.000	58.990	15.118	0.000	0.000	0.000	Continuing	Continuing
674495: <i>Avionics Modernization Program</i>	4.219	3.933	4.867	0.000	4.867	0.000	0.000	0.000	0.000	0.000	433.202
674835: <i>Reliability Enhancement & Reengining Program</i>	105.972	61.671	34.654	0.000	34.654	15.118	0.000	0.000	0.000	0.000	1,638.098
675353: <i>C-5 Block Upgrade</i>	0.000	19.662	19.469	0.000	19.469	0.000	0.000	0.000	0.000	0.000	39.179

A. Mission Description and Budget Item Justification

674495: Avionics Modernization Program (AMP): AMP implements communication, navigation, surveillance/air traffic management (CNS/ATM), navigation/safety capability and the All Weather Flight Control System (AWFCS). It installs directed navigation/safety equipment: Terrain Awareness and Warning System (TAWS) and Traffic Alert and Collision Avoidance System (TCAS), reducing the threat of controlled flight into terrain and mid-air collisions. CNS/ATM capability requirements are incorporated in the aircraft to meet current and future International Civil Aviation Organization (ICAO)/Federal Aviation Administration (FAA) requirements and to progress toward Next Gen Air Transportation System. AWFCS replaces low reliability line replaceable units (LRUs) in the automatic flight control system and replaces aging, non-supportable mechanical instruments in the engine and flight systems. Connectivity to mobility command and control capabilities is also incorporated in the AMP design. The TCAS portion was accelerated ahead of the rest of the AMP mod and was completed 31 Oct 02. The portion of avionics capability required for modernization that was not complete at the end of AMP development will be captured and funded in RERP. All other avionics capability will be captured in a separate follow-on block upgrade program. This project is comprised of low technical risk efforts supporting fielded weapons systems and, therefore, was assigned to Budget Activity 7, Operational Systems Development. AMP requirements have been expanded to incorporate updates to the new avionics architecture, to include security enhancements to the Global Positioning System. Equipment Diminishing Manufacturing Source (DMS) issues will be resolved to support continued operations through studies, development, and redesign efforts. Congressional adds funded Inductive Thermography in FY08 (\$1.5M) and FY09 (\$2.4M).

FY 2009/2010/2011: Funding required for development of Selective Availability Anti-Spoofing Module (SAASM)/Enhanced Surveillance (EHS) capabilities for insertion in aircraft that have previously completed the AMP modification.

674835: C-5 Reliability Enhancement and Re-engining Program (RERP): RERP is a comprehensive modernization effort to improve aircraft reliability, maintainability, and availability. RERP will enable the C-5 to achieve wartime mission requirements by increasing fleet availability (mission capable rate, departure reliability). This effort centers around replacing the current TF39 engines with more reliable, Commercial Off-the-Shelf CF6 turbofan engines with increased take-off thrust and stage

UNCLASSIFIED

R-1 Line Item #221

Page 1 of 26

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	PE 0401119F: <i>C-5 Airlift Squadrons</i>

three noise compliance. The new engines increase payload capability and access to Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM) airspace. The modification also decreases aircraft time to climb, increases engine-out climb gradient for takeoff, improves transportation system throughput, and decreases engine removals. Additionally, numerous other system modifications will be performed to increase fleet availability. Increased costs led to a review of total program requirements. On 14 Feb 08, USD (AT&L) certified a restructured RERP to Congress. This restructured program reduced RERP scope to include only 49 production aircraft (47 C-5Bs and 2 C-5Cs). The AF was directed to fully fund RERP to the OSD Cost Analysis Improvement Group (CAIG) Independent Cost Estimate (ICE). On March 14, 2008 USD AT&L conducted a successful Milestone C (MS C) Defense Acquisition Board (DAB). USD AT&L signed the Acquisition Program Baseline (APB) reflecting the N-M certification and the MS C approval on June 24, 2008. Equipment Diminishing Manufacturing Sources (DMS) issues will be resolved to support continued operations through studies, bridge buys, life of type buys, development and redesign efforts. This project is comprised of low technical risk efforts supporting fielded weapons systems and, therefore, was assigned to Budget Activity 7, Operational Systems Development.

FY 2009: Funding supported RERP design, development, engineering change orders, and contractor/government test. Mission support funding is required for program office operations and second destination transportation costs. FY09 funding also supports initiation of development/delivery of aircrew/maintenance training devices to meet operational training requirements.

FY2010: Funding supports RERP design, development, engineering change orders, and contractor/government test. Mission support funding is required for program office operations and second destination transportation costs. FY10 funding is also required to continue the development/delivery of aircrew/maintenance Training devices.

FY2011: Funding supports RERP design, development, engineering change orders, contractor test, and final technical order publication. FY11 funding is also required to finalize the development/delivery of aircrew/maintenance training devices.

675353: C-5 Block Upgrade: Purpose of this program is to provide a measured approach to implement a common baseline for the C-5 fleet and its training systems in order to allow insertion and integration of new/future capabilities and replacement of future unsupportable equipment. This program supports software (S/W) and hardware (H/W) baselines between legacy aircraft, Avionics Modernization Program (AMP) aircraft, and Reliability Enhancement and Re-engining Program (RERP) aircraft.

C-5 AMP core processing platform has a total of two Core Processor Module (CPM) cards; C-5 RERP core processing platform has a total of three CPM cards. The AMP requirement is to have 50% spare processing and memory capability; CPM-1 and CPM-2, respectively, have only 22% and 19% throughput capability remaining. AMP throughput/capacity constraint does not allow for new/future capability and contributes to current computer problems. Failure to upgrade the AMP system to the 3 CPM RERP configuration will affect mission capable rates, will inhibit the ability to fix current Deficiency Reports (DRs), and will drive increased sustainment costs associated with S/W and H/W baseline divergence. This project is comprised of low technical risk efforts supporting fielded weapons systems and, therefore, was assigned to Budget Activity 7, Operational Systems Development.

UNCLASSIFIED

R-1 Line Item #221

Page 2 of 26

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	127.118	95.266	0.000	0.000	0.000
Current President's Budget	110.191	85.266	58.990	0.000	58.990
Total Adjustments	-16.927	-10.000	58.990	0.000	58.990
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-16.927	-10.000	58.990	0.000	58.990

Change Summary Explanation

FY 2009 Other Adjustments: Below Threshold Reductions (\$2.0M), SBIR reduction (\$5.12M), and Above Threshold Reductions (\$9.807).
 FY 2010 Other Adjustments: Congressional program reduction (\$10.0M).

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>	PROJECT 674495: <i>Avionics Modernization Program</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674495: <i>Avionics Modernization Program</i>	4.219	3.933	4.867	0.000	4.867	0.000	0.000	0.000	0.000	0.000	433.202
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

674495: Avionics Modernization Program (AMP): AMP implements communication, navigation, surveillance/air traffic management (CNS/ATM), navigation/safety capability and the All Weather Flight Control System (AWFCS). It installs directed navigation/safety equipment: Terrain Awareness and Warning System (TAWS) and Traffic Alert and Collision Avoidance System (TCAS), reducing the threat of controlled flight into terrain and mid-air collisions. CNS/ATM capability requirements are incorporated in the aircraft to meet current and future International Civil Aviation Organization (ICAO)/Federal Aviation Administration (FAA) requirements and to progress toward Next Gen Air Transportation System. AWFCS replaces low reliability line replaceable units (LRUs) in the automatic flight control system and replaces aging, non-supportable mechanical instruments in the engine and flight systems. Connectivity to mobility command and control capabilities is also incorporated in the AMP design. The TCAS portion was accelerated ahead of the rest of the AMP mod and was completed 31 Oct 02. The portion of avionics capability required for modernization that was not complete at the end of AMP development will be captured and funded in RERP. All other avionics capability will be captured in a separate follow-on block upgrade program. This project is comprised of low technical risk efforts supporting fielded weapons systems and, therefore, was assigned to Budget Activity 7, Operational Systems Development. AMP requirements have been expanded to incorporate updates to the new avionics architecture, to include security enhancements to the Global Positioning System. Equipment Diminishing Manufacturing Source (DMS) issues will be resolved to support continued operations through studies, development, and redesign efforts. Congressional adds funded Inductive Thermography in FY08 (\$1.5M) and FY09 (\$2.4M).

FY 2009/2010/2011: Funding required for development of Selective Availability Anti-Spoofing Module (SAASM)/Enhanced Surveillance (EHS) capabilities for insertion in aircraft that have previously completed the AMP modification.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Develop Selective Availability Anti-Spoofing Module (SAASM)/Enhanced Surveillance (EHS) capabilities for insertion in aircraft that have previously completed the AMP modification.	4.219	3.933	4.867	0.000	4.867

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force										DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>				PROJECT 674495: <i>Avionics Modernization Program</i>				
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
<p><i>FY 2009 Accomplishments:</i> In FY 2009: Develop software requirements to insert in C-5 legacy and AMP modified aircraft.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Finalize development of SAASM and continue EHS software requirements to insert in C-5 legacy and AMP modified aircraft.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Finalize development of EHS software requirements to insert in C-5 legacy and AMP modified aircraft.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 (OCO): N/A</p>											
Accomplishments/Planned Programs Subtotals						4.219	3.933	4.867	0.000	4.867	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 040119F: <i>Aircraft Procurement, AF, BA-5, C-5 Mods, Avionics Modernization Program, BP-11</i>	94.901	72.607	36.845	0.000	36.845	0.000	0.000	0.000	0.000	0.000	753.810
• PE Not Provided (1023): <i>PE, 0401119F, Aircraft Procurement,</i>	7.405	4.882	1.468	0.000	1.468	0.000	0.000	0.000	0.000	0.000	37.339

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>	PROJECT 674495: <i>Avionics Modernization Program</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
<i>AF, BA-5, C-5 Mods, Avionics Modernization Program, BP-19</i>											

D. Acquisition Strategy

Avionics Modernization Program: Program acquisition strategy establishes a single integrating contractor (Lockheed Martin Aeronautics Company) to modify and qualify integrated commercial off-the-shelf line replaceable units and software to meet C-5 communication, navigation, surveillance/air traffic management requirements; update existing engineering and technical data; develop interface control specifications based on requirements; prototype the new system; and support flight testing. The AMP modification is planned for the C-5 fleet.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>	PROJECT 674495: <i>Avionics Modernization Program</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Lockheed Martin Aeronautics Company	SS/CPAF	LM Marietta GA	361.020	1.600		0.000		0.000		0.000	0.000	362.620	362.620
Rockwell Collins	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			361.020	1.600		0.000		0.000		0.000	0.000	362.620	362.620

Remarks
Engineering complete.

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
730 ACSG, Robins AFB, GA	TBD/TBD	TBD TBD	2.275	0.733		0.288		0.000		0.288	0.000	3.296	3.296
716 AESG, Wright-Patterson AFB, OH	TBD/TBD	TBD TBD	22.448	0.000		0.000		0.000		0.000	0.000	22.448	22.448
Thermography	TBD/TBD	TBD TBD	3.937	0.000		0.000		0.000		0.000	0.000	3.937	3.937
Subtotal			28.660	0.733		0.288		0.000		0.288	0.000	29.681	29.681

Remarks
Engineering complete.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>				PROJECT 674495: <i>Avionics Modernization Program</i>					

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
418 Test Squadron	TBD/TBD	418 Test Squadron Edwards AFB	14.214	0.000		4.579		0.000		4.579	0.000	18.793	18.793
578 ACSS (WR-ALC)	TBD/TBD	WR-ALC Robins AFB	1.110	1.600		0.000		0.000		0.000	0.000	2.710	2.710
Subtotal			15.324	1.600		4.579		0.000		4.579	0.000	21.503	21.503

Remarks
Engineering complete.

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	405.004	3.933	4.867	0.000	4.867	0.000	413.804	413.804

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

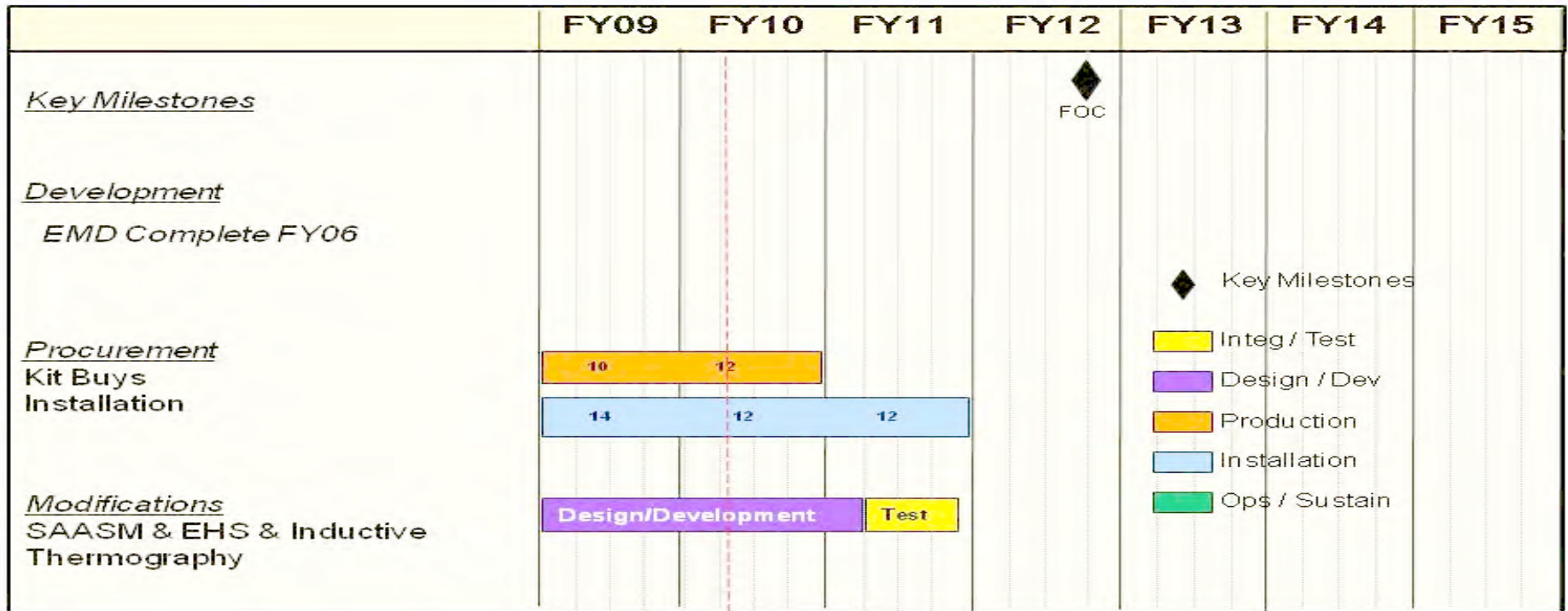
PE 0401119F: *C-5 Airlift Squadrons*

PROJECT

674495: *Avionics Modernization Program*



C-5 AMP Schedule FY11 PB



Integrity - Service - Excellence

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>	PROJECT 674495: <i>Avionics Modernization Program</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Aircraft is in production	1	2009	4	2011
Selective Availability Anti-Spoofing Module (SAASM)/Enhanced Surveillance (EHS) Development/ Inductive Thermography	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>				PROJECT 674835: <i>Reliability Enhancement & Reengining Program</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674835: <i>Reliability Enhancement & Reengining Program</i>	105.972	61.671	34.654	0.000	34.654	15.118	0.000	0.000	0.000	0.000	1,638.098
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

674835: C-5 Reliability Enhancement and Re-engining Program (RERP): RERP is a comprehensive modernization effort to improve aircraft reliability, maintainability, and availability. RERP will enable the C-5 to achieve wartime mission requirements by increasing fleet availability (mission capable rate, departure reliability). This effort centers around replacing the current TF39 engines with more reliable, Commercial Off-the-Shelf CF6 turbofan engines with increased take-off thrust and stage three noise compliance. The new engines increase payload capability and access to Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM) airspace. The modification also decreases aircraft time to climb, increases engine-out climb gradient for takeoff, improves transportation system throughput, and decreases engine removals. Additionally, numerous other system modifications will be performed to increase fleet availability. Increased costs led to a review of total program requirements. On 14 Feb 08, USD (AT&L) certified a restructured RERP to Congress. This restructured program reduced RERP scope to include only 49 production aircraft (47 C-5Bs and 2 C-5Cs). The AF was directed to fully fund RERP to the OSD Cost Analysis Improvement Group (CAIG) Independent Cost Estimate (ICE). On March 14, 2008 USD AT&L conducted a successful Milestone C (MS C) Defense Acquisition Board (DAB). USD AT&L signed the Acquisition Program Baseline (APB) reflecting the N-M certification and the MS C approval on June 24, 2008. Equipment Diminishing Manufacturing Sources (DMS) issues will be resolved to support continued operations through studies, bridge buys, life of type buys, development and redesign efforts. This project is comprised of low technical risk efforts supporting fielded weapons systems and, therefore, was assigned to Budget Activity 7, Operational Systems Development.

FY 2009: Funding supported RERP design, development, engineering change orders, and contractor/government test. Mission support funding is required for program office operations and second destination transportation costs. FY09 funding also supports initiation of development/delivery of aircrew/maintenance training devices to meet operational training requirements.

FY2010: Funding supports RERP design, development, engineering change orders, and contractor/government test. Mission support funding is required for program office operations and second destination transportation costs. FY10 funding is also required to continue the development/delivery of aircrew/maintenance Training devices.

FY2011: Funding supports RERP design, development, engineering change orders, contractor test, and final technical order publication. FY11 funding is also required to finalize the development/delivery of aircrew/maintenance training devices.

UNCLASSIFIED

R-1 Line Item #221

Page 11 of 26

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>	PROJECT 674835: <i>Reliability Enhancement & Reengining Program</i>

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: Reliability Enhancement and Re-engining Program (RERP) will enable the C-5 to achieve wartime mission requirements by increasing fleet availability (mission capable rate, departure re...</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: The requirement for the FY09 Accomplishments funding in Paragraph B are to support RERP design, development, engineering change orders, and contractor/government test. Mission support funding is required for program office operations and Second Destination Transportation costs.</p> <p><i>FY 2010 Plans:</i> In FY 2010: The requirement for the FY10 Accomplishments/Planned Program funding in Paragraph B are to support RERP design , development, engineering change orders, and contractor/government test . Mission support funding is required for program office operations and Second Destination Transportation costs.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: The requirement for the FY11 Accomplishments/Planned Program funding in Paragraph B are to support RERP design, development, engineering change orders, contractor test, and final Technical Order publication.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 (OCO): N/A</p>	105.972	61.671	34.654	0.000	34.654
Accomplishments/Planned Programs Subtotals	105.972	61.671	34.654	0.000	34.654

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>	PROJECT 674835: <i>Reliability Enhancement & Reengining Program</i>
--	---	---

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0401119F: <i>Aircraft Procurement, AF, BA-5, C-5 Reliability Enhancement and Re-engining Program, Ad</i>	50.762	108.300	166.900	0.000	166.900	175.300	175.800	0.000	0.000	0.000	782.594
• PE 0401119F (1): <i>Aircraft Procurement, AF, BA-5, C-5 Mods, Reliability Enhancement and Re-engining Progr</i>	280.116	462.664	676.457	0.000	676.457	950.459	1,045.637	1,136.369	324.852	0.000	5,033.494
• PE 0401119F (2): <i>Aircraft Procurement, AF, BA-5, C-5 Other, BP19</i>	0.000	12.337	19.541	0.000	19.541	9.389	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Reliability Enhancement and Re-engining Program (RERP): Reliability Enhancement and Re-engining Program (RERP): System Development & Demonstration (SDD) includes 1 C-5A and 2 C-5Bs. The acquisition strategy considers every opportunity to use commercial components to modernize the C-5 to meet or exceed required system performance and support, so as to renew the weapon system until 2040. Lockheed Martin was selected as the prime contractor through a sole source arrangement. Lockheed has selected General Electric (Powerplant), Goodrich (Pylon), and Honeywell (Avionics) as the major subcontractors.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>				PROJECT 674835: <i>Reliability Enhancement & Reengining Program</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Lockheed Martin Aeronautics Co (Pre-EMD)	SS/FFP	LM Marietta Georgia	46.738	0.000		0.000		0.000		0.000	0.000	46.738	46.738
Lockheed Martin Aeronautics Co (SDD)	SS/CPAF	LM Marietta Georgia	1,273.329	34.831	Oct 2009	4.357	Oct 2010	0.000		4.357	0.000	1,312.517	1,312.517
Lockheed Martin Aeronautics Co (ICS)	SS/Various	LM Marietta Georgia	0.000	3.367	Jan 2010	2.141	Jan 2011	0.000		2.141	0.000	5.508	5.508
Subtotal			1,320.067	38.198		6.498		0.000		6.498	0.000	1,364.763	1,364.763

Remarks

Costs shown on Interim Contract Support (ICS) line were previously included in SDD line. Due to a change in contracting strategy post-FY09 PB submission, these costs were moved from the SDD line to the ICS line. These costs represent the costs associated with post-SDD DMS resolution and Deficiency Report (DR) resolution during QOT&E to be executed using the ICS contract vehicle.

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
730 ACSG, Robins AFB, GA	TBD/TBD	WR-ALC Robins AFB	31.302	0.394		0.000		0.000		0.000	0.000	31.696	31.696
716 AESG, Wright-Patterson AFB, OH	TBD/TBD	ASC Wright-Patterson AFB	47.069	0.327		0.000		0.000		0.000	0.000	47.396	47.396

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>				PROJECT 674835: <i>Reliability Enhancement & Reengining Program</i>					

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			78.371	0.721		0.000		0.000		0.000	0.000	79.092	79.091

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
418 Test Squadron (Edwards AFB)	TBD/TBD	418 Test Squadron Edwards AFB	63.504	1.518		0.000		0.000		0.000	0.000	65.022	65.023
Subtotal			63.504	1.518		0.000		0.000		0.000	0.000	65.022	65.023

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>				PROJECT 674835: <i>Reliability Enhancement & Reengining Program</i>					

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total		Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date			
Aircrew & Maintenance Trainer	TBD/TBD	OO-ALC Hill AFB	31.977	21.234		28.156		0.000		28.156	15.118	96.485	96.485	
Omnibus	TBD/TBD	TBD TBD	3.500	0.000		0.000		0.000		0.000	0.000	3.500	3.500	
Subtotal			35.477	21.234		28.156		0.000		28.156	15.118	99.985	99.985	

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,497.419	61.671		34.654		0.000		34.654	15.118	1,608.862	1,608.862

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

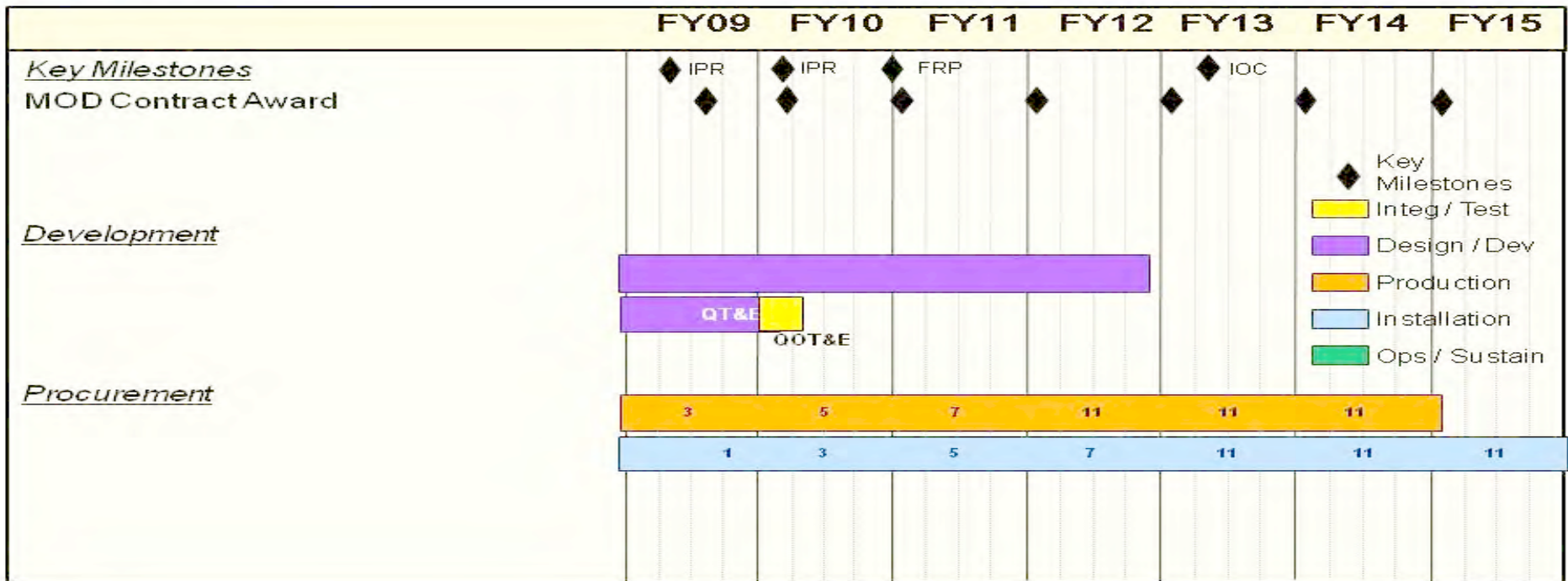
PE 0401119F: *C-5 Airlift Squadrons*

PROJECT

674835: *Reliability Enhancement & Reengining Program*



C-5 RERP Schedule



- ♦ Key Milestones
- Integ / Test
- Design / Dev
- Production
- Installation
- Ops / Sustain

Integrity - Service - Excellence

As of: 12/30/09

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>	PROJECT 674835: <i>Reliability Enhancement & Reengining Program</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Complete Dedicated Qualification Operational Test and Evaluation (QOT&E) (AFOTEC Report Complete)	3	2010	3	2010
Full Rate Production (FRP) decision	4	2010	4	2010
LRIP aircraft modification (input/induction)	4	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>	PROJECT 675353: <i>C-5 Block Upgrade</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675353: <i>C-5 Block Upgrade</i>	0.000	19.662	19.469	0.000	19.469	0.000	0.000	0.000	0.000	0.000	39.179
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

675353: C-5 Block Upgrade: Purpose of this program is to provide a measured approach to implement a common baseline for the C-5 fleet and its training systems in order to allow insertion and integration of new/future capabilities and replacement of future unsupportable equipment. This program supports software (S/W) and hardware (H/W) baselines between legacy aircraft, Avionics Modernization Program (AMP) aircraft, and Reliability Enhancement and Re-engining Program (RERP) aircraft.

C-5 AMP core processing platform has a total of two Core Processor Module (CPM) cards; C-5 RERP core processing platform has a total of three CPM cards. The AMP requirement is to have 50% spare processing and memory capability; CPM-1 and CPM-2, respectively, have only 22% and 19% throughput capability remaining. AMP throughput/capacity constraint does not allow for new/future capability and contributes to current computer problems. Failure to upgrade the AMP system to the 3 CPM RERP configuration will affect mission capable rates, will inhibit the ability to fix current Deficiency Reports (DRs), and will drive increased sustainment costs associated with S/W and H/W baseline divergence. This project is comprised of low technical risk efforts supporting fielded weapons systems and, therefore, was assigned to Budget Activity 7, Operational Systems Development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Upgrade AMP's core processing platform [Versatile Integrated Avionics (VIA) and Avionics Interface Unit (AIU)] to RERP's core processing platform configuration and address key AMP pr... <i>FY 2009 Accomplishments:</i> In FY 2009: N/A	0.000	19.662	19.469	0.000	19.469

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>	PROJECT 675353: <i>C-5 Block Upgrade</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Development and integration of AMP core processing software for a 3 core processing module (CPM) environment; investigation and development of software solutions for AMP waivers.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Complete software development and integration, regression testing, Ground Testing, Developmental Testing & Evaluation (DT&E) and Operational Testing & Evaluation (OT&E).</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 (OCO): N/A</p>					
Accomplishments/Planned Programs Subtotals	0.000	19.662	19.469	0.000	19.469

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0401119F: <i>Aircraft Procurement, AF, BA-5, C-5 Mods, Block Upgrade Program, BP11</i>	0.000	0.000	21.260	0.000	21.260	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

C-5 Block Upgrade: Program acquisition strategy establishes a single integrating contractor (Lockheed Martin) to modify and qualify an integrated software/hardware system to support all configurations of the C-5 fleet. Updates include software/hardware to meet C-5 Avionics Modernization Program requirements; Reliability Enhancement & Re-engining Program software/hardware requirements; Large Aircraft InfraRed CounterMeasures requirements, and other growth in capability that may occur in the future. Random incorporation of capabilities denies optimal user capabilities in time of need and increases overall cost. "Block Upgrade 01" is the start of a measured approach in implementing a more common baseline to allow insertion and integration of newly acquired/required capabilities and replacement of future unsupportable equipment due to obsolescence or Diminishing Manufacturing Source (DMS) issues.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>	PROJECT 675353: <i>C-5 Block Upgrade</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>	PROJECT 675353: <i>C-5 Block Upgrade</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Lockheed Martin Aeronautics Co	SS/CPAF	LM Marietta, Ga	0.000	14.269		13.799		0.000		13.799	0.000	28.068	Continuing
Subtotal			0.000	14.269		13.799		0.000		13.799	0.000	28.068	

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
730 ACSG, Robins AFB, GA	SS/Various	ARINC Warner Robins, Ga	0.000	2.335		2.445		0.000		2.445	0.000	4.780	Continuing
Subtotal			0.000	2.335		2.445		0.000		2.445	0.000	4.780	

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>				PROJECT 675353: <i>C-5 Block Upgrade</i>					

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
418 Test Squadron	TBD/TBD	418 Test Squadron Edwards AFB	0.000	2.512		3.000		0.000		3.000	0.000	5.512	Continuing
Subtotal			0.000	2.512		3.000		0.000		3.000	0.000	5.512	

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
N/A	SS/FFP	ARINC Warner Robins, Ga	0.000	0.546		0.225		0.000		0.225	0.000	0.771	Continuing
Subtotal			0.000	0.546		0.225		0.000		0.225	0.000	0.771	

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	0.000	19.662		19.469		0.000		19.469	0.000	39.131	

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>	PROJECT 675353: <i>C-5 Block Upgrade</i>
--	---	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

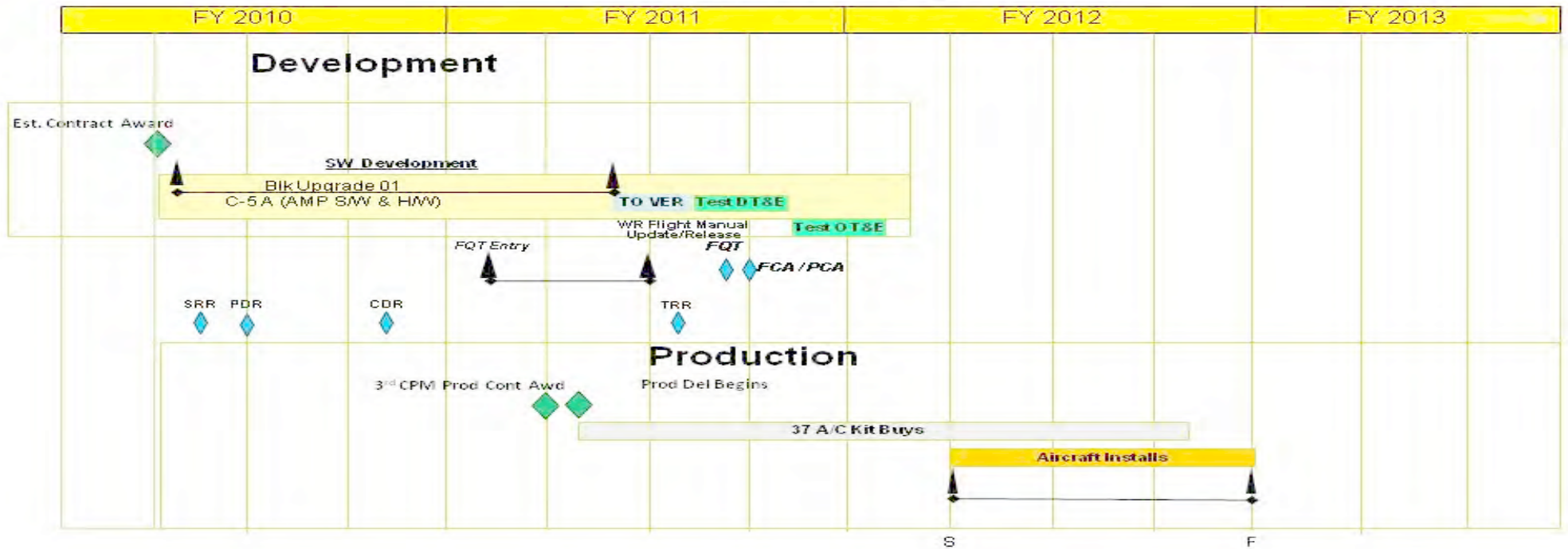
PE 0401119F: C-5 Airlift Squadrons

PROJECT

675353: C-5 Block Upgrade

Summary Schedule

C-5 Fleet Block Upgrade 01



UNCLASSIFIED

R-1 Line Item #221

Page 25 of 26

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401119F: <i>C-5 Airlift Squadrons</i>	PROJECT 675353: <i>C-5 Block Upgrade</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
System Development and Demonstration	2	2010	4	2011
Production	2	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401130F: <i>C-17 Aircraft</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	182.754	161.855	177.212	0.000	177.212	183.745	147.179	170.704	191.555	Continuing	Continuing
672569: <i>C-17 Aircraft</i>	182.754	161.855	177.212	0.000	177.212	183.745	147.179	170.704	191.555	Continuing	Continuing

Note

In FY02, 674886, LAIRCM, efforts transferred to PE 0401134F, LAIRCM.

A. Mission Description and Budget Item Justification

Mission Description: The C-17 can perform the entire spectrum of airlift missions and is specifically designed to operate effectively and efficiently in both strategic and theater environments. Airlift provides essential flexibility when responding to contingencies on short notice anywhere in the world. It is a major element of America's National Military Strategy and constitutes the most responsive means of meeting U.S. mobility requirements. Specific tasks associated with the airlift mission include deployment, employment (airland and airdrop), sustaining support, retrograde, and combat redeployment. Not only can the C-17 deliver outsize cargo to austere tactical environments, but it also reduces ground time during airland operations. The C-17 will perform the airlift mission well into this century.

Budget Item Justification: RDT&E efforts support aircraft performance improvements. In addition, funding may be used to develop solutions to emergency obsolescence issues that impact the mission capability or continued support of the C-17 weapon system.

- FY 2009: Continued development and testing of C-17 aircraft performance improvements/ mandates to include projects such as, but not limited to Replacement Core Integrated Processor, Formation Flying System and Airdrop Improvements.

- FY 2010: Continued development and testing of C-17 aircraft performance improvements/ mandates to include projects such as, but not limited to Barometric/Vertical Navigation (Baro/VNAV) Capability, Replacement Heads-Up Display (RHUD), and Advanced Situational Awareness Countermeasures (ASACM).

- FY 2011: Continued development and testing of C-17 aircraft performance improvements/ mandates to include projects such as, but not limited to Next Gen Communication Navigation Surveillance (CNS)/ATM System - Phase 1 Surveillance, Airdrop Improvements, Baro/VNAV Capability, RHUD, and ASACM.

This program is under Budget Activity 7, Operational System Development, since the program has completed Milestone III but is continuing to increase the operational capability of the C-17 through programmed modifications.

UNCLASSIFIED

R-1 Line Item #222

Page 1 of 12

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401130F: <i>C-17 Aircraft</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	235.407	161.855	0.000	0.000	0.000
Current President's Budget	182.754	161.855	177.212	0.000	177.212
Total Adjustments	-52.653	0.000	177.212	0.000	177.212
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-52.653	0.000	177.212	0.000	177.212

Change Summary Explanation

FY09 Other Adjustments includes \$22.403M Congressional Rescission (FY10 Defense Appropriation Bill), \$2.0M Reprogramming, and \$28.25M SBIR Transfer.

UNCLASSIFIED

R-1 Line Item #222

Page 2 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401130F: <i>C-17 Aircraft</i>	PROJECT 672569: <i>C-17 Aircraft</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
672569: <i>C-17 Aircraft</i>	182.754	161.855	177.212	0.000	177.212	183.745	147.179	170.704	191.555	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Mission Description: The C-17 can perform the entire spectrum of airlift missions and is specifically designed to operate effectively and efficiently in both strategic and theater environments. Airlift provides essential flexibility when responding to contingencies on short notice anywhere in the world. It is a major element of America's national security strategy and constitutes the most responsive means of meeting U.S. mobility requirements. Specific tasks associated with the airlift mission include deployment, employment (airland and airdrop), sustaining support, retrograde, and combat redeployment. Not only can the C-17 deliver outsize cargo to austere tactical environments, but it also reduces ground time during airland operations. The C-17 will perform the airlift mission well into this century.

Budget Item Justification: RDT&E efforts support aircraft performance improvements. In addition, funding may be used to develop solutions to emergency obsolescence issues that impact the mission capability or continued support of the C-17 weapon system.

- FY 2009: Continued development and testing of C-17 aircraft performance improvements/mandates to include projects such as, but not limited to Replacement Core Integrated Processor, Formation Flying System and Airdrop Improvements.

- FY 2010: Continued development and testing of C-17 aircraft performance improvements/mandates to include projects such as, but not limited to Barometric/Vertical Navigation (Baro/VNAV) Capability, Replacement Heads-Up Display (RHUD), and Advanced Situational Awareness Countermeasures (ASACM).

- FY 2011: Continued development and testing of C-17 aircraft performance improvements/mandates to include projects such as, but not limited to Next Gen Communication Navigation Surveillance (CNS)/ATM System - Phase 1 Surveillance, Airdrop Improvements, Baro/VNAV Capability, RHUD, and ASACM.

This program is under Budget Activity 7, Operational System Development, since the program has completed Milestone III but is continuing to increase the operational capability of the C-17 through programmed modifications.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

R-1 Line Item #222

Page 3 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401130F: <i>C-17 Aircraft</i>	PROJECT 672569: <i>C-17 Aircraft</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Performance Improvement Development & Testing <i>FY 2009 Accomplishments:</i> In FY 2009: Continued development of C-17 aircraft performance improvements for its avionics, aircraft and mission systems and the development of solutions to emergent obsolescence issues. <i>FY 2010 Plans:</i> In FY 2010: Continued development of C-17 aircraft performance improvements for its avionics, aircraft and mission systems and the development of solutions to emergent obsolescence issues. <i>FY 2011 Base Plans:</i> In FY 2011: Continued development of C-17 aircraft performance improvements for its avionics, aircraft and mission systems and the development of solutions to emergent obsolescence issues. <i>FY 2011 OCO Plans:</i> In FY2011 OCO: N/A,		94.481	85.699	98.412	0.000	98.412
MAJOR THRUST: Systems Engineering/Program Management <i>FY 2009 Accomplishments:</i> In FY 2009: Continuation of program infrastructure including technical studies, avionics and software development laboratory upkeep, software systems engineering investigations, pre-project planning, systems engineering analysis and requirements development and identification of future technology needs through the Technical Improvement Change Roadmap activities. Also includes mission support for USAF management of the C-17 program. <i>FY 2010 Plans:</i> In FY 2010: Continuation of program infrastructure including technical studies, avionics and software development laboratory upkeep, software systems engineering investigations, pre-project planning, systems engineering analysis and requirements development and identification of future technology		49.548	43.081	41.000	0.000	41.000

UNCLASSIFIED

R-1 Line Item #222

Page 4 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010																			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0401130F: <i>C-17 Aircraft</i>		PROJECT 672569: <i>C-17 Aircraft</i>																			
B. Accomplishments/Planned Program (\$ in Millions)																							
<table border="1"> <thead> <tr> <th></th> <th>FY 2009</th> <th>FY 2010</th> <th>FY 2011 Base</th> <th>FY 2011 OCO</th> <th>FY 2011 Total</th> </tr> </thead> <tbody> <tr> <td> <p>needs through the Technical Improvement Change Roadmap activities. Also includes mission support for USAF management of the C-17 program.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continuation of program infrastructure including technical studies, avionics and software development laboratory upkeep, software systems engineering investigations, pre-project planning, systems engineering analysis and requirements development and identification of future technology needs through the Technical Improvement Change Roadmap activities. Also includes mission support for USAF management of the C-17 program.</p> <p><i>FY 2011 OCO Plans:</i> In FY2011 OCO: N/A,</p> </td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> <p>MAJOR THRUST: Producibility Enhancement/Performance Improvement (PE/PI) Contractor Flight Test</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Continuation of contractor testing of new capabilities as required. Costs include maintenance on the test aircraft, engine overhaul of the flight test aircraft unique engines, contractor engineering support for test related technical and safety of flight issues, test planning, test analysis and test execution.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continuation of contractor testing of new capabilities as required. Costs include maintenance on the test aircraft, engine overhaul of the flight test aircraft unique engines, contractor engineering support for test related technical and safety of flight issues, test planning, test analysis and test execution.</p> </td> <td align="right">28.575</td> <td align="right">21.275</td> <td align="right">25.800</td> <td align="right">0.000</td> <td align="right">25.800</td> </tr> </tbody> </table>							FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	<p>needs through the Technical Improvement Change Roadmap activities. Also includes mission support for USAF management of the C-17 program.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continuation of program infrastructure including technical studies, avionics and software development laboratory upkeep, software systems engineering investigations, pre-project planning, systems engineering analysis and requirements development and identification of future technology needs through the Technical Improvement Change Roadmap activities. Also includes mission support for USAF management of the C-17 program.</p> <p><i>FY 2011 OCO Plans:</i> In FY2011 OCO: N/A,</p>						<p>MAJOR THRUST: Producibility Enhancement/Performance Improvement (PE/PI) Contractor Flight Test</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Continuation of contractor testing of new capabilities as required. Costs include maintenance on the test aircraft, engine overhaul of the flight test aircraft unique engines, contractor engineering support for test related technical and safety of flight issues, test planning, test analysis and test execution.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continuation of contractor testing of new capabilities as required. Costs include maintenance on the test aircraft, engine overhaul of the flight test aircraft unique engines, contractor engineering support for test related technical and safety of flight issues, test planning, test analysis and test execution.</p>	28.575	21.275	25.800	0.000	25.800
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total																		
<p>needs through the Technical Improvement Change Roadmap activities. Also includes mission support for USAF management of the C-17 program.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continuation of program infrastructure including technical studies, avionics and software development laboratory upkeep, software systems engineering investigations, pre-project planning, systems engineering analysis and requirements development and identification of future technology needs through the Technical Improvement Change Roadmap activities. Also includes mission support for USAF management of the C-17 program.</p> <p><i>FY 2011 OCO Plans:</i> In FY2011 OCO: N/A,</p>																							
<p>MAJOR THRUST: Producibility Enhancement/Performance Improvement (PE/PI) Contractor Flight Test</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Continuation of contractor testing of new capabilities as required. Costs include maintenance on the test aircraft, engine overhaul of the flight test aircraft unique engines, contractor engineering support for test related technical and safety of flight issues, test planning, test analysis and test execution.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continuation of contractor testing of new capabilities as required. Costs include maintenance on the test aircraft, engine overhaul of the flight test aircraft unique engines, contractor engineering support for test related technical and safety of flight issues, test planning, test analysis and test execution.</p>	28.575	21.275	25.800	0.000	25.800																		

UNCLASSIFIED

R-1 Line Item #222

Page 5 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0401130F: <i>C-17 Aircraft</i>		PROJECT 672569: <i>C-17 Aircraft</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY 2011: Continuation of contractor testing of new capabilities as required. Costs include maintenance on the test aircraft, engine overhaul of the flight test aircraft unique engines, contractor engineering support for test related technical and safety of flight issues, test planning, test analysis and test execution.</p> <p><i>FY 2011 OCO Plans:</i> In FY2011 OCO: N/A,</p>								
<p>MAJOR THRUST: Producibility Enhancement/Performance Improvement (PE/PI) Government Flight Test</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Continuation of the direct costs of flight testing. The costs include ramp space, fuel, air traffic control, range costs, etc., which are items each weapon system must pay for when using Air Force flight test locations.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continuation of the direct costs of flight testing. The costs include ramp space, fuel, air traffic control, range costs, etc., which are items each weapon system must pay for when using Air Force flight test locations.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continuation of the direct costs of flight testing. The costs include ramp space, fuel, air traffic control, range costs, etc., which are items each weapon system must pay for when using Air Force flight test locations.</p> <p><i>FY 2011 OCO Plans:</i> In FY2011 OCO: N/A,</p>				10.150	11.800	12.000	0.000	12.000
Accomplishments/Planned Programs Subtotals				182.754	161.855	177.212	0.000	177.212

UNCLASSIFIED

R-1 Line Item #222

Page 6 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401130F: <i>C-17 Aircraft</i>	PROJECT 672569: <i>C-17 Aircraft</i>

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0401130F: <i>C-17 MYP, BA02, APAF</i>	2,488.079	2,580.251	128.683	0.000	128.683	104.268	84.628	164.265	158.581	0.000	0.000
• PE 0401130F (1): <i>C-17 A/C Mods, BA05, APAF</i>	332.417	471.932	351.614	224.450	576.064	255.555	341.966	383.903	485.685	0.000	0.000
• PE 0401130F (2): <i>C-17 Production Transition/Shutdown, BA07, APAF</i>	0.000	11.000	38.947	0.000	38.947	152.370	208.358	91.100	0.000	0.000	0.000
• PE 0401130F (3): <i>Organic Depot, APAF</i>	20.364	26.522	21.344	0.000	21.344	6.534	2.621	0.000	0.000	0.000	0.000
• PE 0401130F (4): <i>MilCon, Facilities</i>	12.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The C-17 Acquisition Strategy is based on several separate contracts to support the entire scope of the C-17 weapon system. These contracts are: 1) IDIQ contracts for the procurement of C-17s and engines beyond 180, including 43 aircraft included in the FY07 - FY10 Defense Appropriation Acts, and foreign orders that may materialize; 2) a Producibility Enhancement and Performance Improvement (PE/PI) contract to develop cost reduction changes, capability enhancements and design fixes to service-revealed problems - (RDT&E, APAF); 3) a Globemaster III Sustainment Partnership (field support) contract to support the current and future fielded aircraft - (O&M, TWCF); 4) an engine contract for Government Furnished Equipment (GFE) engines - (APAF); 5) a set of aircrew simulator and training contracts: one for aircrew simulators and one for training & concurrency upgrades; and 6) a maintenance training device contract for devices & concurrency upgrades. The simulator squadron is in the process of breaking out operations and maintenance services contracts for both aircrew and maintenance simulators - (APAF).

Two C-17 Defense Acquisition Board (DAB) decisions, contained in the 3 Nov 95 and 1 Feb 96 USD(A&T) Acquisition Decision Memoranda (ADM), directed the Air Force to proceed with a 120-aircraft production program. The Air Force proceeded with procuring 40 aircraft followed by an 80-aircraft MYP program (along with engines to support them). Sixty additional C-17s were programmed at the end of the 80-aircraft MYP to meet requirements not included in the 120 aircraft program. The FY07 Defense Appropriations Act provided funding for 10 aircraft to bring the total fleet number to 190 aircraft. The FY08 GWOT supplement included funding for 15 additional aircraft and most recently, FY09 and FY10 Congressional action funded an additional 8 and 10 aircraft, respectively. The current USAF program of record is 223 aircraft (note: 1 of the 223 aircraft became the United States contribution to the Strategic Airlift Capability (SAC) consortium).

UNCLASSIFIED

R-1 Line Item #222

Page 7 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401130F: <i>C-17 Aircraft</i>	PROJECT 672569: <i>C-17 Aircraft</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401130F: <i>C-17 Aircraft</i>	PROJECT 672569: <i>C-17 Aircraft</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Boeing	Various	Boeing Long Beach, CA	7,118.161	140.464	Oct 2009	159.173	Oct 2010	0.000		159.173	612.954	8,030.752	0.000
Subtotal			7,118.161	140.464		159.173		0.000		159.173	612.954	8,030.752	0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mission Support OGC	Various	Wright-Patterson AFB OH	118.029	9.591	Oct 2009	6.039	Oct 2010	0.000		6.039	29.629	163.288	0.000
Subtotal			118.029	9.591		6.039		0.000		6.039	29.629	163.288	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0401130F: <i>C-17 Aircraft</i>					PROJECT 672569: <i>C-17 Aircraft</i>				

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Combined Test Force	PO	Edwards AFB CA	374.475	11.800	Oct 2009	12.000	Oct 2010	0.000		12.000	50.600	448.875	0.000
JPADS	PO	Various Various	4.350	0.000		0.000		0.000		0.000	0.000	4.350	0.000
SPRO (Army funds for testing)	PO	Various Various	11.061	0.000		0.000		0.000		0.000	0.000	11.061	0.000
AFRL	PO	Wright-Patterson AFB OH	0.265	0.000		0.000		0.000		0.000	0.000	0.265	0.000
Subtotal			390.151	11.800		12.000		0.000		12.000	50.600	464.551	0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7,626.341	161.855	177.212	0.000	177.212	693.183	8,658.591	0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

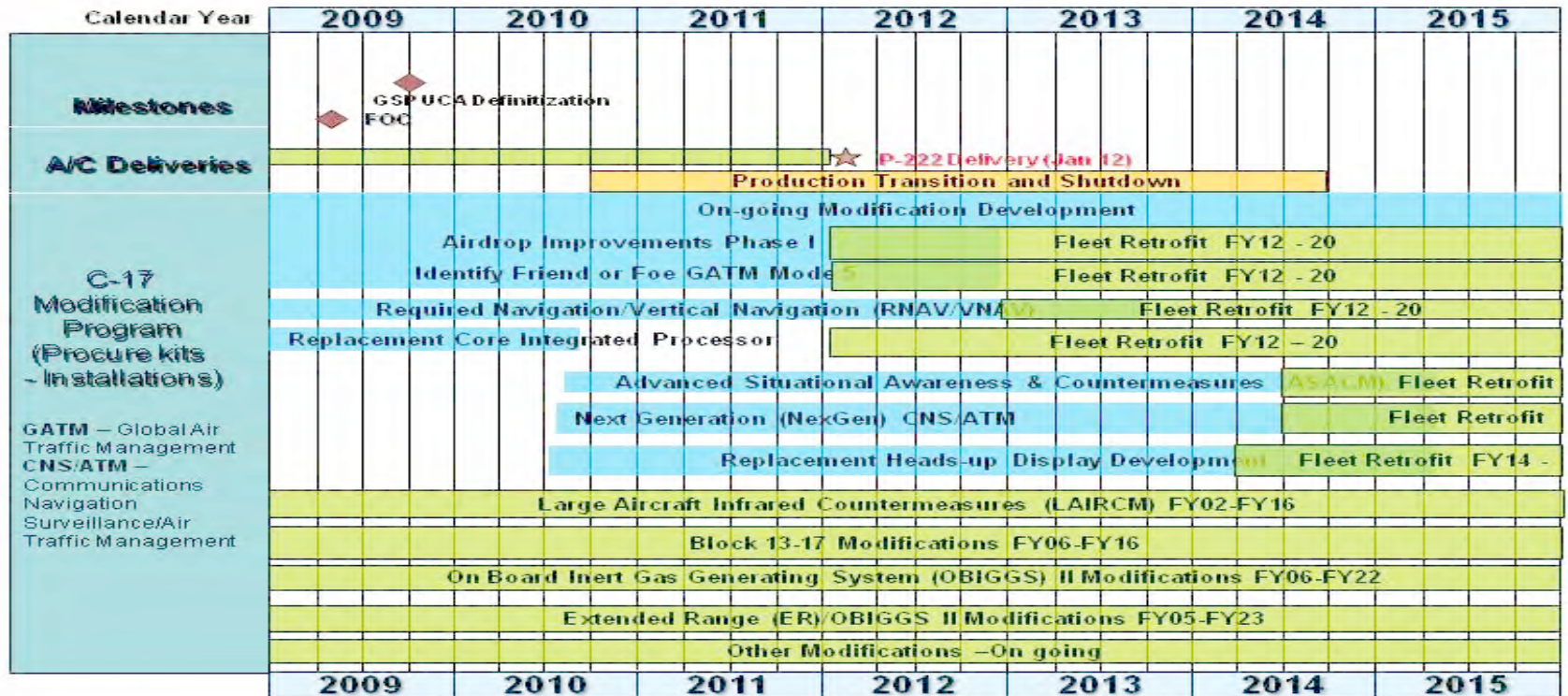
R-1 ITEM NOMENCLATURE

PE 0401130F: *C-17 Aircraft*

PROJECT

672569: *C-17 Aircraft*

C-17 Program Schedule



GATM – Global Air Traffic Management
 CNS/ATM – Communications Navigation Surveillance/Air Traffic Management

UNCLASSIFIED

R-1 Line Item #222

Page 11 of 12

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401130F: <i>C-17 Aircraft</i>	PROJECT 672569: <i>C-17 Aircraft</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Incremental Funding of Ongoing Performance Improvement Projects (Boeing)	1	2009	3	2011
Adv Situational Awareness & Countermeasures (ASACM) Contract Award / Incremental Funding (FY11); responsibility for execution of the cross-platform ASACM project has moved to the LAIRCM Squadron	3	2010	1	2011
Replacement HUD Contract Award / Incremental Funding (FY11)	4	2010	1	2011
Next Gen CNS/ATM - Phase I Contract Award / Incremental Funding (FY11)	4	2010	1	2011
Incremental Funding of IFF CNS/ATM Mode 5 Contract	1	2009	1	2011
Incremental Funding of Rnav/Vnav & Baro Vnav Capability Contract	1	2009	1	2011
Incremental Funding of Flight Testing	1	2009	1	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401132F: <i>C-130J PROGRAM</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	25.190	30.019	26.770	0.000	26.770	31.569	5.898	18.297	23.956	Continuing	Continuing
675061: <i>C-130J</i>	25.190	30.019	26.770	0.000	26.770	31.569	5.898	18.297	23.956	Continuing	Continuing

A. Mission Description and Budget Item Justification

The C-130J is a medium-sized transport aircraft capable of performing a variety of combat delivery (tactical airlift) operations across a broad range of mission environments. The C-130J aircraft, with its extended (by 15 feet) fuselage, provides additional cargo carrying capacity for the USAF combat delivery mission compared with legacy C-130E/H and the C-130J (short). Special mission variants of the C-130J conduct airborne psychological operations (EC-130J), weather reconnaissance (WC-130J), search and rescue (HC-130J), and special operations (MC-130J). All aircraft variants must be capable of worldwide operations.

FY10 C-130J program RDT&E funding provides for:

1.) Participation in the International Co-operative Systems and Software Upgrade Requirements Management (COSSURM). COSSURM participants include the United Kingdom, Australia, Italy, Denmark, Canada, Norway, and the United States. COSSURM provides a mechanism to jointly identify, collect, define, analyze, and price requirements. By combining requirements and resources under COSSURM, each participating country will save in aircraft upgrade costs.

2.) Continuation of Block 7.0 Upgrades, testing, and trial kit installation(s). Block 7.0 is the second phase of a three-block upgrade initiative which primarily addresses mandated Communication, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) requirements. Block 7.0 is the first Block Upgrade initiative that is a true International partnership, as the development costs are being shared by each participating nation. Block 7.0 requirements include:

- a.) Communication, Navigation & Identification (CNI) upgrades
- b.) Dual Multi-Mode Receivers (MMR) with TSO C-129A Civil Global Positioning System (GPS)
- c.) CNI Special Processor upgrade
- d.) Tactical Datalink (TDL)
- e.) Mission Computer (MC) upgrades

Block 7.0 (as well as all future Block Upgrades) will be integrated into the training systems integration lab prior to incorporation into the fielded trainers.

UNCLASSIFIED

R-1 Line Item #223

Page 1 of 13

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401132F: <i>C-130J PROGRAM</i>
--	--

3.) Start of Block 8.0 Upgrades. Block 8.0 is the last phase of three block upgrades which will complete all known mandated Communication, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) requirements. Block 8.0 will again be an International partnership with costs being shared by each participating nation. Block 8.0 requirements include:

- a.) TEMPEST Compliance
- b.) IFF transponder Mode-5
- c.) Data-link (line of sight and beyond line of sight)
- d.) ADS-A/B
- e.) Mission Computer (MC) upgrades

4.) Other AMC approved initiatives. AMC has prioritized requirements that do not fall within the International Block Upgrade program, which primarily address deficiencies, system improvements, and diminishing manufacturing sources (DMS). This includes Navigation Safety upgrades, Joint Precision Airdrop System, and Large Aircraft Infrared Counter Measures (LAIRCM), among other priorities.

FY11 C-130J program RDT&E funding will continue participation the COSSURM effort, Block 7.0, Block 8.0 and other AMC approved initiatives.

This effort is assigned to Budget Activity 7, as it supports an operational system.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	27.354	30.019	0.000	0.000	0.000
Current President's Budget	25.190	30.019	26.770	0.000	26.770
Total Adjustments	-2.164	0.000	26.770	0.000	26.770
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	-1.400	0.000			
• SBIR/STTR Transfer	-0.690	0.000			
• Other Adjustments	-0.074	0.000	26.770	0.000	26.770

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401132F: <i>C-130J PROGRAM</i>	PROJECT 675061: <i>C-130J</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675061: <i>C-130J</i>	25.190	30.019	26.770	0.000	26.770	31.569	5.898	18.297	23.956	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The C-130J is a medium-sized transport aircraft capable of performing a variety of combat delivery (tactical airlift) operations across a broad range of mission environments. The C-130J aircraft, with its extended (by 15 feet) fuselage, provides additional cargo carrying capacity for the USAF combat delivery mission compared with legacy C-130E/H and the C-130J (short). Special mission variants of the C-130J conduct airborne psychological operations (EC-130J), weather reconnaissance (WC-130J), search and rescue (HC-130J), and special operations (MC-130J). All aircraft variants must be capable of worldwide operations.

FY10 C-130J program RDT&E funding provides for:

1.) Participation in the International Co-operative Systems and Software Upgrade Requirements Management (COSSURM). COSSURM participants include the United Kingdom, Australia, Italy, Denmark, Canada, Norway, and the United States. COSSURM provides a mechanism to jointly identify, collect, define, analyze, and price requirements. By combining requirements and resources under COSSURM, each participating country will save in aircraft upgrade costs.

2.) Continuation of Block 7.0 Upgrades, testing, and trial kit installation(s). Block 7.0 is the second phase of a three-block upgrade initiative which primarily addresses mandated Communication, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) requirements. Block 7.0 is the first Block Upgrade initiative that is a true International partnership, as the development costs are being shared by each participating nation. Block 7.0 requirements include:

- a.) Communication, Navigation & Identification (CNI) upgrades
- b.) Dual Multi-Mode Receivers (MMR) with TSO C-129A Civil Global Positioning System (GPS)
- c.) CNI Special Processor upgrade
- d.) Tactical Datalink (TDL)
- e.) Mission Computer (MC) upgrades

Block 7.0 (as well as all future Block Upgrades) will be integrated into the training systems integration lab prior to incorporation into the fielded trainers.

UNCLASSIFIED

R-1 Line Item #223

Page 3 of 13

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401132F: <i>C-130J PROGRAM</i>	PROJECT 675061: <i>C-130J</i>
--	--	---

3.) Start of Block 8.0 Upgrades. Block 8.0 is the last phase of three block upgrades which will complete all known mandated Communication, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) requirements. Block 8.0 will again be an International partnership with costs being shared by each participating nation. Block 8.0 requirements include:

- a.) TEMPEST Compliance
- b.) IFF transponder Mode-5
- c.) Data-link (line of sight and beyond line of sight)
- d.) ADS-A/B
- e.) Mission Computer (MC) upgrades

4.) Other AMC approved initiatives. AMC has prioritized requirements that do not fall within the International Block Upgrade program, which primarily address deficiencies, system improvements, and diminishing manufacturing sources (DMS). This includes Navigation Safety upgrades, Joint Precision Airdrop System, and Large Aircraft Infrared Counter Measures (LAIRCM), among other priorities.

FY11 C-130J program RDT&E funding will continue participation the COSSURM effort, Block 7.0, Block 8.0 and other AMC approved initiatives.

This effort is assigned to Budget Activity 7, as it supports an operational system.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Cooperative Systems and Software Upgrade Requirements Management (COSSURM) - Collects all potential requirements for inclusion into a Block Upgrade. <i>FY 2009 Accomplishments:</i> In FY 2009: COSSURM efforts for Blk 8.1 were concluded, with the International Program Directive (IPD), which details what will be included in the Request for Proposal (RFP) for the next Block, being created in the Block Requirements Approval Meeting (BRAM) #2.	0.740	0.530	0.530	0.000	0.530

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0401132F: <i>C-130J PROGRAM</i>		PROJECT 675061: <i>C-130J</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY2010: Provides resources to rapidly address emerging wartime requirements</p> <p><i>FY 2011 Base Plans:</i> In FY2011: Provides resources to rapidly address emerging wartime requirements</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>								
<p>MAJOR THRUST: International Program Office (IPO) Support. Funds for A&AS, Travel, Supplies and DFAS/DCMA Support</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009, A&AS, Travel, Supplies and DFAS/DCMA Support (includes \$0.125 of AF Withhold)</p> <p><i>FY 2010 Plans:</i> In FY 2010, A&AS, Travel, Supplies and DFAS/DCMA Support</p> <p><i>FY 2011 Base Plans:</i> In FY 2011, A&AS, Travel, Supplies and DFAS/DCMA Support</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>				0.233	0.182	0.182	0.000	0.182
Accomplishments/Planned Programs Subtotals				25.190	30.019	26.770	0.000	26.770

UNCLASSIFIED

R-1 Line Item #223

Page 7 of 13

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401132F: <i>C-130J PROGRAM</i>	PROJECT 675061: <i>C-130J</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0401132F: <i>C-130J Procurement (BP1100)</i>	0.000	0.000	0.000	0.000	0.000	31.132	57.986	60.555	61.128	0.000	0.000

D. Acquisition Strategy

C-130J aircraft will be modified using a 'block upgrade' strategy. The full CNS/ATM / nav safety requirement will be met in three block upgrades. Block 6.0 development was funded from FY03-07. Block 7.0 started in FY07 and Block 8.1, which begins in FY10, should complete the known CNS/ATM and nav safety requirements. The proportion of CNS/ATM / nav safety requirements allocated to Blocks 6.0 through 8.1 was determined via a design trade study conducted by Lockheed Martin (the C-130J prime contractor) and verified by the C-130J system program office and AMC. The development costs are being shared via a Global Project arrangement by the United States (USAF, USMC, USCG), the United Kingdom, Italy, Australia, Denmark, Canada, and Norway. An international program office (IPO), with USAF lead (Wright Patterson AFB, OH) manages the block upgrade development effort. Embodiment of a Block on the aircraft is the responsibility of each nation.

Lockheed Martin will be the prime contractor for these efforts, perform the non-recurring engineering and, following the successful conclusion of flight testing and certification of each block upgrade, will provide production retrofit kits on USAF C-130J aircraft. Installation will be performed by contractor, depot, and Air Force personnel.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

R-1 Line Item #223

Page 8 of 13

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401132F: <i>C-130J PROGRAM</i>	PROJECT 675061: <i>C-130J</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Block 7.0 , Aeronautical Systems Center (AFMC), WPAFB, OH	SS/CPAF	Lockheed Martin Aeronautics Marietta GA	22.915	26.910	Dec 2009	0.000	Dec 2010	0.000		0.000	0.000	49.825	0.000
Block 8.1, Aeronautical Systems Center (AFMC), WPAFB, OH	SS/CPAF	Lockheed Martin Information Sytems Orlando FL	0.052	0.500	Feb 2010	23.398	Feb 2011	0.000		23.398	0.000	23.950	0.000
AMC-I, Aeronautical Systems Center (AFMC), WPAFB, OH	SS/CPAF	TBD TBD	0.870	0.500	Feb 2010	0.500	Feb 2011	0.000		0.500	0.000	1.870	0.000
Subtotal			23.837	27.910		23.898		0.000		23.898	0.000	75.645	0.000

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
IPO Support	TBD/TBD	TBD TBD	0.108	0.179	Nov 2009	0.182	Nov 2010	0.000		0.182	0.000	0.469	0.000
Subtotal			0.108	0.179		0.182		0.000		0.182	0.000	0.469	0.000

Remarks

A&AS, Travel, Supplies - all vary on support needed

UNCLASSIFIED

R-1 Line Item #223

Page 9 of 13

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401132F: <i>C-130J PROGRAM</i>				PROJECT 675061: <i>C-130J</i>					

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Air Force Materiel Command (DT&E)	TBD/TBD	TBD TBD	0.306	1.400	Oct 2009	2.160	Oct 2010	0.000		2.160	0.000	3.866	0.000
Subtotal			0.306	1.400		2.160		0.000		2.160	0.000	3.866	0.000

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
COSSURM	TBD/TBD	TBD TBD	0.740	0.530		0.530		0.000		0.530	0.000	1.800	0.000
International Savings	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Congressional Rescissions	TBD/TBD	TBD TBD	0.074	0.000		0.000		0.000		0.000	0.000	0.074	0.000
SBIR	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Reprogrammings	TBD/TBD	TBD TBD	0.125	0.000		0.000		0.000		0.000	0.000	0.125	0.000
Withhold	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0401132F: <i>C-130J PROGRAM</i>					PROJECT 675061: <i>C-130J</i>				

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.939	0.530		0.530		0.000		0.530	0.000	1.999	0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	25.190	30.019		26.770		0.000		26.770	0.000	81.979	0.000

Remarks

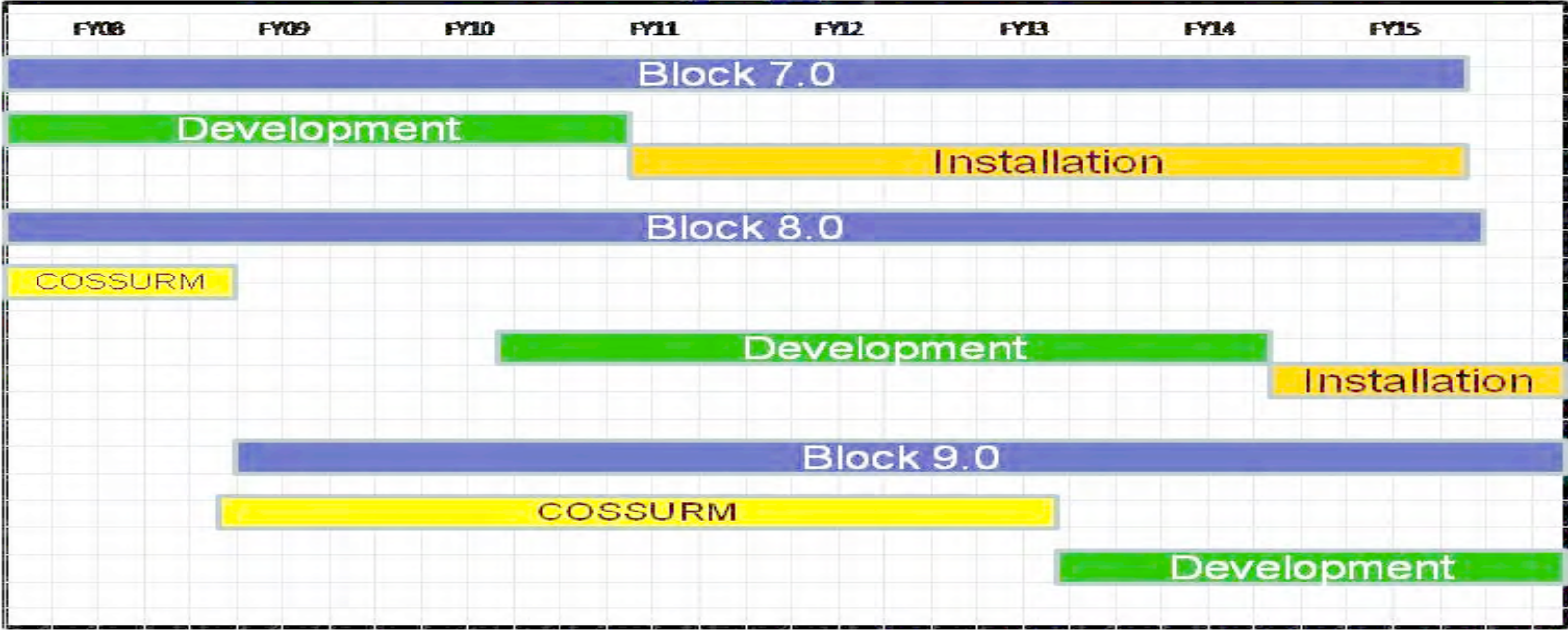
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401132F: <i>C-130J PROGRAM</i>	PROJECT 675061: <i>C-130J</i>

C-130J International Block Upgrade Plan



COSSURM - International Co-operative Systems and Software Upgrade Requirements Management

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0401132F: *C-130J PROGRAM*

PROJECT

675061: *C-130J*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Block 7.0 FY09 award	1	2009	1	2009
Block 7.0 FY10 award	1	2010	1	2010
Block 8.1 FY10 award	4	2010	4	2010
Block 8.1 FY11 Award	1	2011	1	2011

UNCLASSIFIED

R-1 Line Item #223

Page 13 of 13

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	22.490	26.784	17.227	0.000	17.227	7.535	7.793	5.852	5.935	Continuing	Continuing
674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>	22.490	26.784	17.227	0.000	17.227	7.535	7.793	5.852	5.935	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Large Aircraft Infrared Countermeasures System (LAIRCM) is an evolutionary acquisition program that provides significantly improved defensive systems capability for DoD aircraft to counter the infrared (IR) Man-Portable Air-Defense Systems (MANPADS) missile threat.

The current LAIRCM system configuration [AN/AAQ-24V] consists of an ultra-violet missile-warning sensor (MWS), a laser transmitter assembly, control interface unit and processors to detect, track, jam and counter incoming IR missiles. The number of sensors and turrets per aircraft is determined by the size and signature of the aircraft. This system is fully automatic following system power-up. LAIRCM requirements are documented in the multi-command Operational Requirements Document (ORD) - LAIRCM ORD 314-92, validated on 3 Aug 98. The system was first fielded in May 03 on the C-17 aircraft.

The Baseline program development is complete and consists of the small laser transmitter assembly, ultra-violet MWS, processor, and Control Interface Unit (CIU) and a repeater (on some aircraft) to meet the need for advanced IR countermeasures. The Guardian Laser Transmitter Assembly (GLTA) is an upgrade to the baseline transmitter equipment. First production GLTA delivery occurred in June FY08.

Development of the Next Generation Missile Warning System (NexGen MWS) is new hardware that improves capability. Baseline equipment (ultra-violet MWS) will be retrofitted with the NexGen MWS as it becomes available. DT/OT will be conducted in FY10 with IOT&E in FY11.

LAIRCM upgrades - This includes continuous hardware and software upgrades and testing of the LAIRCM system to maintain concurrency with new and emerging threats. These upgrades include, but are not limited to capability, hardware and/or software, upgrades to current LAIRCM LRUs for capabilities like engagement reporting (ER), Closed Loop Infrared Countermeasure (CLIRCM) and other newly emerging capabilities to upgrade/update system threat defeating ability. It also includes development/integration of new LRUs/LRU variants into the current LAIRCM system based on newly emergent technology. Upgrades to the capability of LAIRCM support/test equipment are captured here.

Group A integration and testing as well as integration support to incorporate LAIRCM on new platforms including C-130J, multiple potential C-130H/J variants as defined by AMC and AFSOC, and multiple potential tanker aircraft variants as defined by AMC will be accomplished.

UNCLASSIFIED

R-1 Line Item #224

Page 1 of 12

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>
--	---

LAIRCM is Budget Activity 7, Operational Systems Development, as it is an electronic countermeasures system upgrade to existing weapons systems.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	36.500	31.784	0.000	0.000	0.000
Current President's Budget	22.490	26.784	17.227	0.000	17.227
Total Adjustments	-14.010	-5.000	17.227	0.000	17.227
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-14.010	-5.000	17.227	0.000	17.227

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 674942: *Large Aircraft Infrared Counter Measures (LAIRCM)*

Congressional Add: *\$4.388M to integrate LAIRCM onto AFSOC HC/MC-130 aircraft. Unavailability of a/c has driven integration start to the right, these funds were used to procure h/w for the integration program.*

Congressional Add Subtotals for Project: 674942

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	4.388	0.000
	4.388	0.000
	4.388	0.000

Change Summary Explanation

FY09: Re-phasing of \$4.388M A/C integration program for LAIRCM on C-130J and AFSOC A/C from FY09 to FY11.

FY09: Other Adjustments: \$0.111M for Congressional rescissions, \$1.002M SBIR/STTR transfer, and \$12.909M for reprogrammings (Total \$14.010M).

FY10: Other Adjustments: \$5.000M for Congressional Program Reductions

UNCLASSIFIED

R-1 Line Item #224

Page 2 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE				PROJECT				
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>				674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>	22.490	26.784	17.227	0.000	17.227	7.535	7.793	5.852	5.935	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Large Aircraft Infrared Countermeasures System (LAIRCM) is an evolutionary acquisition program that provides significantly improved defensive systems capability for DoD aircraft to counter the infrared (IR) Man-Portable Air-Defense Systems (MANPADS) missile threat.

The current LAIRCM system configuration [AN/AAQ-24V] consists of an ultra-violet missile-warning sensor (MWS), a laser transmitter assembly, control interface unit and processors to detect, track, jam and counter incoming IR missiles. The number of sensors and turrets per aircraft is determined by the size and signature of the aircraft. This system is fully automatic following system power-up. LAIRCM requirements are documented in the multi-command Operational Requirements Document (ORD) - LAIRCM ORD 314-92, validated on 3 Aug 98. The system was first fielded in May 03 on the C-17 aircraft.

The Baseline program development is complete and consists of the small laser transmitter assembly, ultra-violet MWS, processor, and Control Interface Unit (CIU) and a repeater (on some aircraft) to meet the need for advanced IR countermeasures. The Guardian Laser Transmitter Assembly (GLTA) is an upgrade to the baseline transmitter equipment. First production GLTA delivery occurred in June FY08.

Development of the Next Generation Missile Warning System (NexGen MWS) is new hardware that improves capability. Baseline equipment (ultra-violet MWS) will be retrofitted with the NexGen MWS as it becomes available. DT/OT will be conducted in FY10 with IOT&E in FY11.

LAIRCM upgrades - This includes continuous hardware and software upgrades and testing of the LAIRCM system to maintain concurrency with new and emerging threats. These upgrades include, but are not limited to capability, hardware and/or software, upgrades to current LAIRCM LRUs for capabilities like engagement reporting (ER), Closed Loop Infrared Countermeasure (CLIRCM) and other newly emerging capabilities to upgrade/update system threat defeating ability. It also includes development/integration of new LRUs/LRU variants into the current LAIRCM system based on newly emergent technology. Upgrades to the capability of LAIRCM support/test equipment are captured here.

Group A integration and testing as well as integration support to incorporate LAIRCM on new platforms including C-130J, multiple potential C-130H/J variants as defined by AMC and AFSOC, and multiple potential tanker aircraft variants as defined by AMC will be accomplished.

UNCLASSIFIED

R-1 Line Item #224

Page 3 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>	PROJECT 674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>				
<p>LAIRCM is Budget Activity 7, Operational Systems Development, as it is an electronic countermeasures system upgrade to existing weapons systems.</p> <p>B. Accomplishments/Planned Program (\$ in Millions)</p>						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: Continue integration of LAIRCM system onto new a/c for AMC & AFSOC customers.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Initiated LAIRCM integration program onto AMC C-130J. Began planning/study of EC-130J integration, including some trial installation and flight test h/w procurements. Completed future system requirements study for dealing with expanding threat environment, and updating to advancing technologies. Initiated h/w and s/w upgrade program for current LAIRCM system equipment to new s/w architecture including additional Engagement Reporting capability. Identified/studied potential new technologies for new/future LRU/SRUs to be added to the system. Continued recurring jam code development and testing program.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continuing LAIRCM integration program onto AMC C-130J. Continue planning/study of multiple AFSOC EC-130J variants LAIRCM integration, including some trial installation and flight test h/w procurements due to changing user requirements. Identify/study potential new technologies for new/future LRU/SRUs to be added to the system. Continue h/w and s/w upgrade program of current LAIRCM system equipment to new s/w architecture including additional Engagement Reporting capability. Continue recurring jam code development and testing program.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Complete LAIRCM integration program onto AMC C-130J and on version of AFSOC EC-130J. Re-start study/integration of LAIRCM onto AFSOC AC-130U, initiated with FY09 Congressional Add funding. Continue planning/study/integration of additional AFSOC EC-130J variants, including some trial installation and flight test h/w procurements. Begin development/integration of potential new technologies for new/future LRU/SRUs to be added to the system. Begin development of Closed Loop Infrared Countermeasures (CLIRCM) capabilities. Continue h/w and s/w</p>		18.102	26.784	17.227	0.000	17.227

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>	PROJECT 674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
upgrade program for current LAIRCM system equipment to new s/w architecture, including additional Engagement Reporting capability. Continue recurring jam code development and testing program. <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A					
Accomplishments/Planned Programs Subtotals	18.102	26.784	17.227	0.000	17.227

	FY 2009	FY 2010
Congressional Add: \$4.388M to integrate LAIRCM onto AFSOC HC/MC-130 aircraft. Unavailability of a/c has driven integration start to the right, these funds were used to procure h/w for the integration program. <i>FY 2009 Accomplishments:</i> In FY 2009: Integration of LAIRCM onto AFSOC HC/MC-130 aircraft. <i>FY 2010 Plans:</i> In FY 2010: N/A	4.388	0.000
Congressional Adds Subtotals	4.388	0.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0504343F: (APAF), C-130 (AFRC)	54.958	1.033	1.019	0.000	1.019	1.034	1.052	1.076	1.090	0.000	0.000
• PE 0401134F: Air Force (APAF), C-17	97.494	267.937	58.509	224.450	282.959	44.012	172.444	175.377	178.652	0.000	0.000
	79.096	86.400	0.000	132.000	132.000	0.000	0.000	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>	PROJECT 674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>
--	---	--

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0401134F (1): <i>Air Force (APAF), C-130</i>											
• PE 0401134F (2): <i>Air Force (APAF), C-5</i>	109.335	76.620	5.122	73.400	78.522	3.213	3.234	5.351	5.451	0.000	0.000
• PE 0401134F (3): <i>Air Force (APAF), C-130J</i>	9.000	0.000	55.339	0.000	55.339	42.685	8.485	8.630	8.791	0.000	0.000

D. Acquisition Strategy

The LAIRCM SDD contract was awarded on 28 Sep 01 as a CPAF contract. An IDIQ contract for LAIRCM production hardware and support was awarded in May 06. Hardware and software upgrades will be awarded as separate delivery orders under the IDIQ and other contracts.

The Next Generation Missile Warning System (NextGen MWS) contracts for a Systems Design and Development (SDD) competition were awarded to Northrop Grumman and Lockheed Martin in Jun 04. Both contractors developed, tested and integrated NextGen MWS prototypes during the SDD competition and a source selection (SS) for production was completed. A Milestone C decision was made in May 08. Contract award occurred Oct 08. Integration of the NextGen MWS production hardware will be accomplished with the NextGen MWS production contractor and the platform Group A integrator for the various LAIRCM equipped platforms. DT/OT will be completed in FY10.

Integration of the LAIRCM subsystems on C-130 (non J) variants is accomplished by Northrop Grumman. The contract for AC-130H integration was awarded in FY07. Contracts were awarded to Lockheed Martin and Northrop Grumman for a C-130J LAIRCM integration study in FY07. Contracts for the design, integration and test of LAIRCM on the C-130J were awarded to Lockheed Martin in 4Q FY09 and Northrop Grumman in 1Q FY10.

LAIRCM upgrades - This includes continuous hardware and software upgrades and testing of the LAIRCM system to maintain concurrency with new and emerging threats. These upgrades include, but are not limited to capability, hardware and/or software, upgrades to current LAIRCM LRUs for capabilities like engagement reporting (ER), Closed Loop Infrared Countermeasure (CLIRCM) and other newly emerging capabilities to upgrade/update system threat defeating ability. It also includes development/integration of new LRUs/LRU variants into the current LAIRCM system based on newly emergent technology. Upgrades to the capability of LAIRCM support/test equipment is captured here.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>	PROJECT 674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>	PROJECT 674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SDD Phase I	Various/ Various	Various Various	111.158	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
EC-130J Integration	SS/CPFF	Northrop Grumman Rolling Meadows, IL	0.808	0.750	Mar 2010	0.989		0.000		0.989	Continuing	Continuing	0.000
AC-130H Integration	SS/CPFF	Northrop Grumman Rolling Meadows, IL	9.223	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
AC-130U Integration	SS/CPFF	Northrop Grumman Rolling Meadows, IL	4.388	0.000		0.250		0.000		0.250	Continuing	Continuing	0.000
Next Generation Missile Warning Sensor Integration	SS/CPAF	Northrop Grumman Rolling Meadows, IL	17.794	0.949	Oct 2009	0.000		0.000		0.000	Continuing	Continuing	0.000
Next Generation Missile Warning Sensor Development Phase 1	SS/CPFF	Northrop Grumman Rolling Meadows, IL	34.006	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
Next Generation Missile Warning Sensor Development Phase II	SS/CPFF	Lockheed Martin Orlando, FL	11.146	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
GLTA Development	SS/CPFF	Northrop Grumman	44.380	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>	PROJECT 674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		Rolling Meadows, IL											
C-5B Development & Integration	SS/CPFF	Lockheed Martin Marietta, GA	27.051	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
C-130J Development & Integration	SS/CPAF	Lockheed Martin Marietta, GA	6.569	11.358	Dec 2009	4.542		0.000		4.542	Continuing	Continuing	0.000
LAIRCM Hardware and Software upgrades	SS/CPFF	Northrop Grumman Rolling Meadows, IL	14.206	9.105	Jun 2010	7.293		0.000		7.293	Continuing	Continuing	0.000
Subtotal			280.729	22.162		13.074		0.000		13.074			0.000

Remarks
FY09 funding for MC-130H is Congressional Add Funding - contract award date TBD.

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
654 AESS	Various/ Various	Various Various	23.150	0.553		0.555		0.000		0.555	Continuing	Continuing	0.000
Subtotal			23.150	0.553		0.555		0.000		0.555			0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>	PROJECT 674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>
--	---	--

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Various Gov't Test Organizations	Various/ Various	Various Various	14.275	4.069		3.598		0.000		3.598	Continuing	Continuing	0.000
Subtotal			14.275	4.069		3.598		0.000		3.598			0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		318.154	26.784	17.227	0.000	17.227		0.000

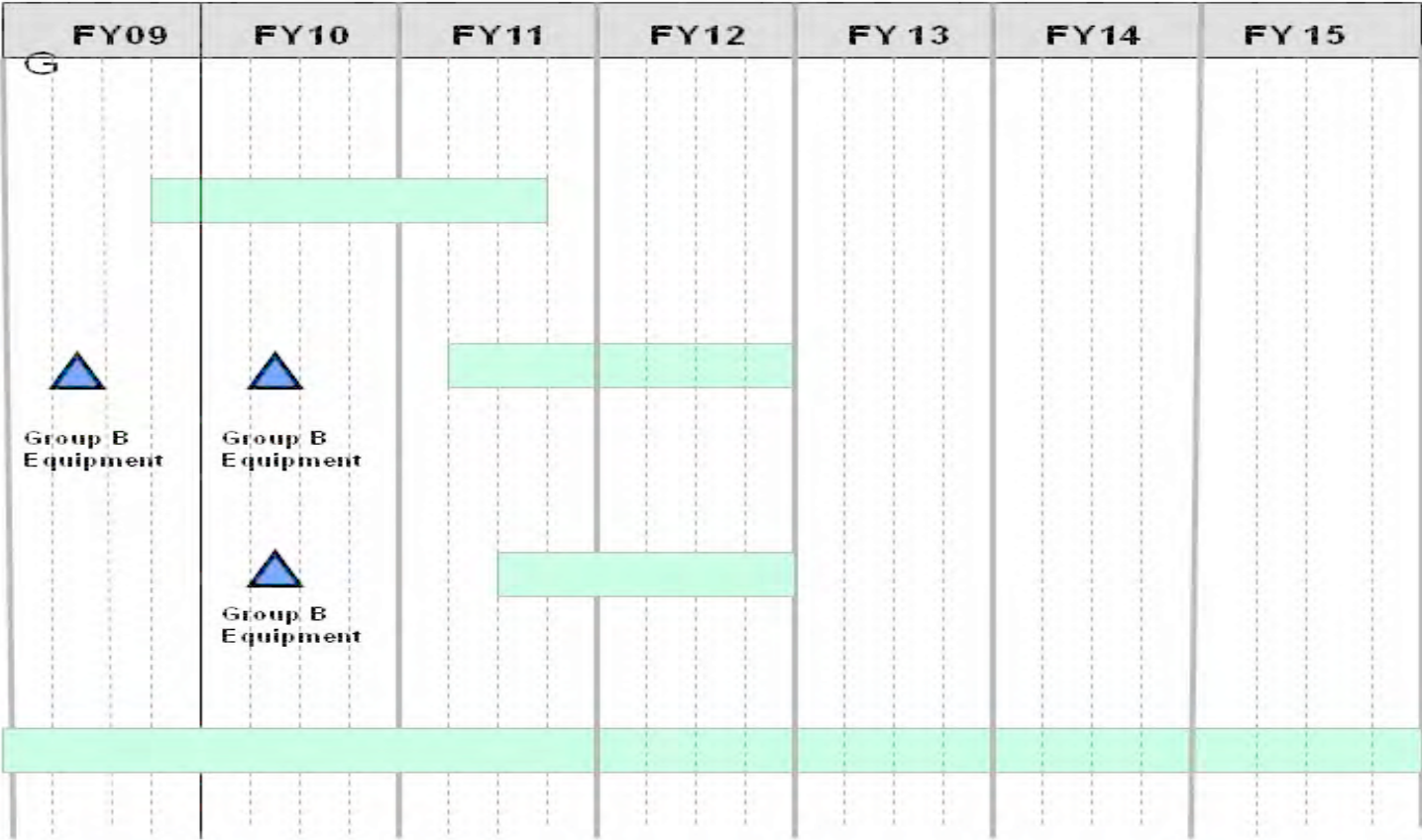
Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>	PROJECT 674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>

LAIRCM SCHEDULE



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401134F: <i>Large Aircraft InfraRed Counter Measures (LAIRCM)</i>	PROJECT 674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>
--	---	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
C-130J Integration	4	2009	3	2011
EC-130J Group B Equipment/Integration	2	2009	4	2011
AC-130U Group B Equipment/Integration	2	2010	4	2011
LAIRCM Upgrades	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	11.917	10.220	20.453	0.000	20.453	6.211	0.000	0.000	0.000	Continuing	Continuing
674494: <i>KC-135 Aging Aircraft Program</i>	6.134	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.348
675261: <i>KC-135 Upgrades</i>	5.783	10.220	20.453	0.000	20.453	6.211	0.000	0.000	0.000	0.000	47.682

A. Mission Description and Budget Item Justification

KC-135 Aging Aircraft Program (674494).

This program supports projects that keep the KC-135 viable for the future. Projects include the analysis and testing efforts in the area of aging aircraft, to include structural, corrosion, fatigue, and stress corrosion cracking. Additionally, the Functional System Integrity Program (FSIP) proactively examines individual aircraft systems for potential impacts due to aging components. The USAF will utilize these activities to improve KC-135 Programmed Depot Maintenance efficiency and to provide direction for future aircraft efforts to sustain the KC-135 as a viable airframe until the planned fleet retirement completion date of 2040.

In addition, Congress added funds in FY09 to procure equipment that will enable the Air Force to deploy advanced ultrasonic inspection techniques that may dramatically reduce the time required to inspect aircraft for defects. The deployment of the ultrasonic inspection technology will provide significantly improved identification and characterization of defects. This can be accomplished with little risk, as the technology is adapted from ultrasonic array technologies and medical grade imaging techniques that have been successfully implemented in the medical industry for many years.

The original add was for \$1.25M. Approximately \$340K was executed as Operations and Maintenance (O&M) funding. The remaining \$900K was reprogrammed as RDT&E funding and will be used for development of the inspection technology.

KC-135 Upgrades (675261).

Block 45 program - Supports a modification program performing analysis, testing, software development, prototyping, documenting source data, and incorporating a new Digital Flight Director (DFD), Radio Altimeter (RA), Autopilot (AP) and Electronic Engine Instrument Displays (EEID).

This program has associated APAF funding in Program Elements 041218F and 041897F.

These efforts support a fielded weapons system and therefore are assigned to Budget Activity 7, Operational Systems Development.

UNCLASSIFIED

R-1 Line Item #225

Page 1 of 17

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	10.305	10.297	0.000	0.000	0.000
Current President's Budget	11.917	10.220	20.453	0.000	20.453
Total Adjustments	1.612	-0.077	20.453	0.000	20.453
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	1.612	-0.077	20.453	0.000	20.453

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 674494: *KC-135 Aging Aircraft Program*

Congressional Add: *Congressional EARMARK for KC-135R Blended Winglet Development*

Congressional Add: *Congressional EARMARK supports the development of Ultrasonic Inspection Equipment Technology*

Congressional Add Subtotals for Project: 674494

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	3.187	0.000
	0.900	0.000
	4.087	0.000
	4.087	0.000

Change Summary Explanation

FY2009: Increase due to Congressional Add for Ultrasonic Inspection Technology development and activities associated with Congressionally-directed Blended Winglet Development project.

FY2010: Funds support continuation of the Block 45 EMD activities, including finishing the overall system design, modifying the System Integration Laboratory (SIL), conducting initial system software testing, and beginning production of the prototype aircraft and operational flight trainer hardware and kits.

UNCLASSIFIED

R-1 Line Item #225

Page 2 of 17

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	
FY2011: Funds will support continuation of the Block 45 EMD activities including Formal Qualification testing of the system software, completion of the aircraft prototype kit development/installation of two kits on the aircraft and the initiation of formal ground testing and flight testing at Edwards AFB, CA.		

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	PROJECT 674494: <i>KC-135 Aging Aircraft Program</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674494: <i>KC-135 Aging Aircraft Program</i>	6.134	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.348
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This program supports projects that keep the KC-135 viable into the future. Projects include the analysis and testing efforts in the area of aging aircraft, to include structural, corrosion, fatigue, and stress corrosion cracking. Additionally, the Functional System Integrity Program (FSIP) proactively examines individual aircraft systems for potential impacts due to aging components. The USAF will utilize these activities to improve KC-135 Programmed Depot Maintenance efficiency and to provide direction for future aircraft efforts to sustain the KC-135 as a viable airframe until the planned fleet retirement completion date of 2040.

NOTE: The FY2009 budget contains a \$3.187M Congressional add for KC-135R blended winglet development and a \$900K Congressional add for Ultrasonic Inspection Test Equipment technology.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Aging Aircraft efforts <i>FY 2009 Accomplishments:</i> IN FY2009: Funds support the Corrosion & Fatigue testing, Functional System Integrity Program (FSIP), implementation of the Magneto-resistive Sensor Responses with Mobil Augmented Ultrasonic Scanner (MAUS) and the final support of Teardown Study planning effort for the KC-135. <i>FY 2010 Plans:</i> IN FY2010: N/A	2.047	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>		PROJECT 674494: <i>KC-135 Aging Aircraft Program</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> IN FY2011: N/A								
<i>FY 2011 OCO Plans:</i> IN FY2011 OCO: N/A								
Accomplishments/Planned Programs Subtotals				2.047	0.000	0.000	0.000	0.000
				FY 2009	FY 2010			
Congressional Add: Congressional EARMARK for KC-135R Blended Winglet Development <i>FY 2009 Accomplishments:</i> IN FY2009: Congressional EARMARK for KC-135R Blended Winglet Development <i>FY 2010 Plans:</i> IN FY2010: N/A				3.187	0.000			
Congressional Add: Congressional EARMARK supports the development of Ultrasonic Inspection Equipment Technology <i>FY 2009 Accomplishments:</i> IN FY2009: Funds support Ultrasonic Inspection Equipment Technology for which funds execute through FY10 <i>FY 2010 Plans:</i> IN FY2010: N/A				0.900	0.000			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force							DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>			PROJECT 674494: <i>KC-135 Aging Aircraft Program</i>					
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010				
Congressional Adds Subtotals						4.087	0.000				
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (3556): <i>None</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
D. Acquisition Strategy											
The acquisition strategy consists primarily of separate task orders (with separate statements of work) ranging from fixed price to cost plus contracts. These task orders address a myriad of aging aircraft activities against existing contract vehicles, such as the SPO-managed KC-135 Fleet Support Contract and Design Engineering Program contracts managed through the Air Logistics Centers.											
E. Performance Metrics											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>				PROJECT 674494: <i>KC-135 Aging Aircraft Program</i>					

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aging Aircraft Studies	Various	Air Force Academy Colorado Springs, CO	1.212	0.000		0.000		0.000		0.000	0.000	1.212	0.000
Subtotal			1.212	0.000		0.000		0.000		0.000	0.000	1.212	0.000

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Corrosion & Fatigue Testing/Functional Systems Integrity Program	Various	Boeing Wichita KS	2.881	0.000		0.000		0.000		0.000	0.000	2.881	0.000
Subtotal			2.881	0.000		0.000		0.000		0.000	0.000	2.881	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	PROJECT 674494: <i>KC-135 Aging Aircraft Program</i>
--	---	--

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
(includes the FY09 congressional add for winglets)	TBD/TBD	TBD TBD	5.847	0.000		0.000		0.000		0.000	0.000	5.847	0.000
Subtotal			5.847	0.000		0.000		0.000		0.000	0.000	5.847	0.000

Remarks
(includes the FY09 congressional add for winglets)

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	9.940	0.000	0.000	0.000	0.000	0.000	9.940	0.000

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	PROJECT 674494: <i>KC-135 Aging Aircraft Program</i>

Fiscal Year	FY09				FY10				FY11				FY12				FY13				FY14				FY15			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Corrosion & Fatigue Testing													▲															
FSP				▲									▲															
Ultrasonic Inspection Technique Development					★				▲																			
Contractor/Management Support				▲																								
★ Contract Award																												
▲ Completion of Program																												
▲ Ongoing event																												

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	PROJECT 674494: <i>KC-135 Aging Aircraft Program</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Corrosion & Fatigue Testing Part 1	1	2009	4	2009
Corrosion & Fatigue Testing Part 2	1	2010	4	2010
FSIP	1	2009	4	2009
Ultrasonic Inspection Technique Development Part 1	3	2010	4	2010
Ultrasonic Inspection Technique Development Part 2	1	2011	2	2011
Contractor/Management Support	1	2009	4	2009

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	PROJECT 675261: <i>KC-135 Upgrades</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675261: <i>KC-135 Upgrades</i>	5.783	10.220	20.453	0.000	20.453	6.211	0.000	0.000	0.000	0.000	47.682
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The C/KC-135 CNS/ATM (Block 45) modification upgrades the Digital Flight Director (DFD), Radar Altimeter (RA), Autopilot (AP) and the Electronic Engine Instrument Display (EEID) and is needed to extend the KC-135 as a viable weapon system through Fiscal Year (FY) 2040. The Block 45 systems mitigates capability gaps identified in the Initial Capabilities Document (ICD) for Aerial Refueling (AR) and the Air Force (AF) Integrated Capability Review and Risk Assessment (I-CRRA), address anticipated airspace restrictions within the global CNS/ATM system and improves overall KC-135 shortcomings in reliability, maintainability and supportability. C/KC-135 CNS/ATM (Block 45) will upgrade 417 KC-135 R/T aircraft.

These efforts support a fielded weapons system and therefore are assigned to Budget Activity 7, Operational Systems Development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Non-Recurring Engineering and test efforts/tasks for all Block 45 sub programs <i>FY 2009 Accomplishments:</i> In FY2009: Initiate engineering development of system requirements for hardware, software, maintainability, reliability, testing, safety and training to include System Functional Review (SFR) and Preliminary Design Review (PDR). Tailor Communication Navigation Surveillance/ Air Traffic Management (CNS/ATM) generic matrices to support operational certification. Develop requirements verification matrix, program execution plans, integrated logistics support approach, and subsystems design requirements traceability.	5.783	10.220	20.453	0.000	20.453

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	PROJECT 675261: <i>KC-135 Upgrades</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY2010: Finish system design to include draft engineering technical data, verify technical problems and design anomalies that have been resolved without comprising system performance, reliability and safety to be verified during Critical Design Review (CDR). Modify the System Integration Laboratory (SIL) and conduct initial system software dry-run testing. Begin production of prototype aircraft and operational flight trainer (OFT) hardware and kits. Start developing the Modification Airworthiness Certification Criteria (MACC), Technical Orders (TO) and training materials for both maintenance and aircrew training. Continue integration and verification of software requirements and processes to achieve desired design.</p> <p><i>FY 2011 Base Plans:</i> In FY2011: Complete Formal Qualification Test of system software on SIL producing red label software to support Developmental Testing followed by Black Label software to support Low Rate Initial Production and Operational Testing. Finish aircraft prototype kit development and install kits on two test aircraft. Initiate formal ground testing at contractors facilities followed by flight testing at Edwards AFB. Complete prototype development of operational flight trainer (OFT). Finalize TOs, engineering technical data, and training development. Conduct aircrew and maintenance type 1 training for both developmental and operational test crews. Complete the MACC, CNS/ATM compliance report and all reports and data required to support operational and airworthiness certification.</p> <p><i>FY 2011 OCO Plans:</i> In FY2011 OCO: N/A</p>					
Accomplishments/Planned Programs Subtotals	5.783	10.220	20.453	0.000	20.453

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	PROJECT 675261: <i>KC-135 Upgrades</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0401218F: <i>C/KC-135</i>	0.000	0.000	8.394	0.000	8.394	31.118	42.701	48.568	52.097	322.147	0.000

D. Acquisition Strategy

Block 45 - The strategy is to have a contracted integrator accomplish the task of performing analysis, testing, software development, prototypes, documentation of source data, and integrating a new Digital Flight Director (DFD), digital Autopilot (AP), digital Radar Altimeter (RA), and Electronic Engine Instrument Display (EEID). The contractor will be responsible for acquiring the necessary information and personnel to integrate each item stated above into the KC-135 legacy systems. The contractor will be responsible for developing and subcontracting the components.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>				PROJECT 675261: <i>KC-135 Upgrades</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Block 45 - NRE, engineering, development, and prototype	SS/FP	Rockwell Collins Cedar Rapids, IA	7.898	8.488		16.000		0.000		16.000	4.600	36.986	Continuing
Subtotal			7.898	8.488		16.000		0.000		16.000	4.600	36.986	

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Support	Various/ Various	Various Various	2.736	0.431		0.450		0.000		0.450	0.000	3.617	0.000
Subtotal			2.736	0.431		0.450		0.000		0.450	0.000	3.617	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	PROJECT 675261: <i>KC-135 Upgrades</i>
--	---	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Block 45 developmental ground and flight test	PO	418 FTS Edwards AFB, CA	0.356	0.660		3.100		0.000		3.100	0.703	4.819	0.000
Subtotal			0.356	0.660		3.100		0.000		3.100	0.703	4.819	0.000

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
TBD:TBD	TBD/TBD	TBD TBD	0.175	0.641		0.903		0.000		0.903	0.908	2.627	0.000
Subtotal			0.175	0.641		0.903		0.000		0.903	0.908	2.627	0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		11.165	10.220	20.453	0.000	20.453	6.211	48.049

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0401218F: KC-135s

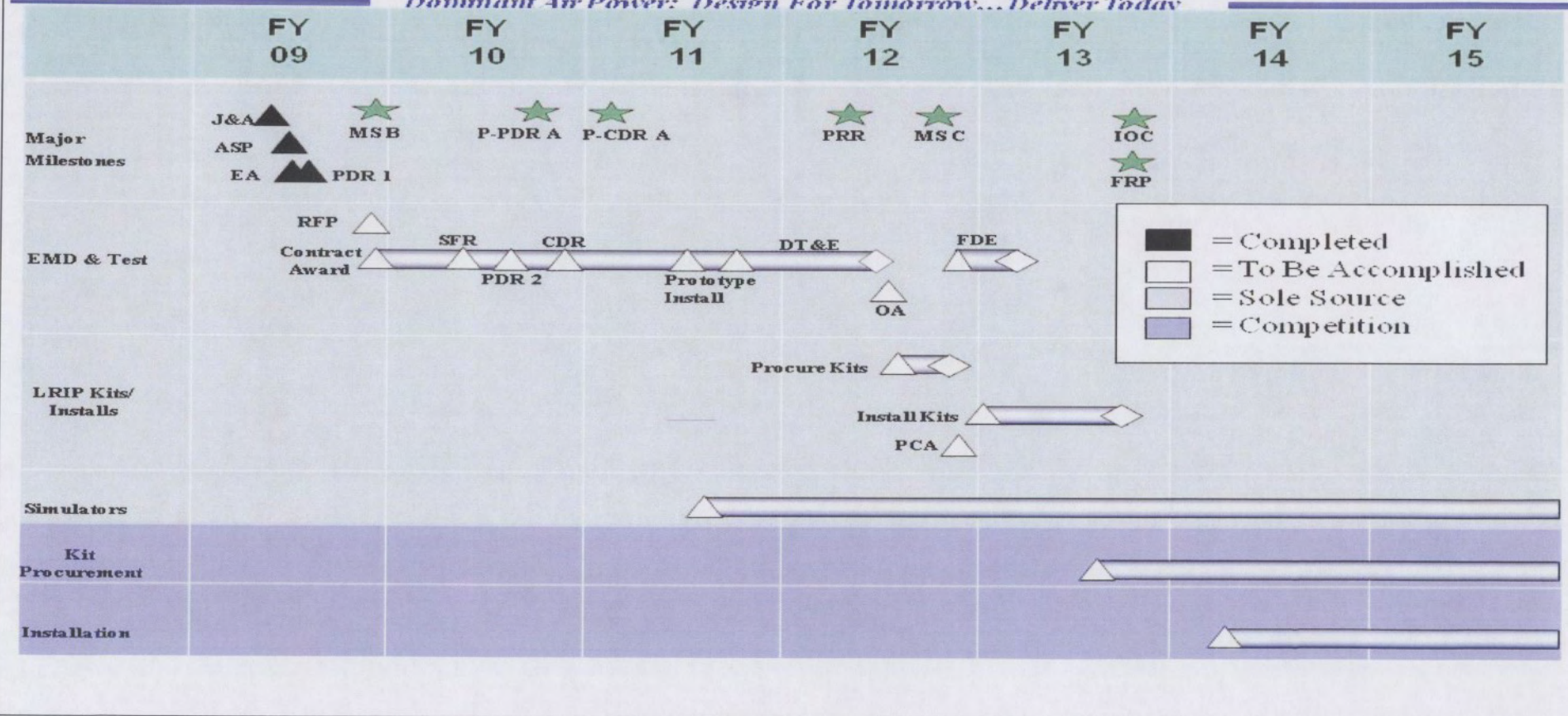
PROJECT

675261: KC-135 Upgrades



Program Schedule

Dominant Air Power: Design For Tomorrow... Deliver Today



UNCLASSIFIED

R-1 Line Item #225
Page 16 of 17

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	PROJECT 675261: <i>KC-135 Upgrades</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Acquisition Strategy Panel (ASP)	2	2009	2	2009
Engineering Manufacturing Development (EMD) RFP Release	4	2009	4	2009
Milestone B (MS B)	4	2009	4	2009
EMD Contract Award	4	2009	4	2009
EMD Phase I	4	2009	4	2009
EMD Phase II	1	2010	4	2010
EMD Phase III	1	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401219F: <i>KC-10S</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	3.800	35.586	56.669	0.000	56.669	13.791	0.000	0.000	0.000	Continuing	Continuing
675195: <i>Aircraft Modernization Program (AMP)</i>	3.800	35.586	56.669	0.000	56.669	13.791	0.000	0.000	0.000	0.000	125.339

A. Mission Description and Budget Item Justification

The KC-10A Extender is an aerial refueling asset built on the commercial DC-10 airframe. The aircraft creates an air bridge to enable rapid global mobility and global strike missions. There are 59 aircraft in the USAF tanker fleet.

RDT&E funds throughout the FYDP will be used to support the Communications, Navigation and Surveillance/Air Traffic Management (CNS/ATM) and Boom Control Unit (BCU) modification efforts.

The KC-10 Aircraft Modernization Program (AMP) was the first major modification to the KC-10A Extender and included required CNS upgrades, increased survivability, net-centric operational capabilities, reliability enhancements, Night Vision Imaging System (NVIS), a growth path for Defensive Systems (DS), provisions to support multi-mission payloads, real-time threat information in the cockpit (RTIC), communications upgraded flight data recorder (FDR), fuel system gauges, refueling boom/drogue electronics, and flight engineer station controls/instruments.

In mid-FY07, concept refinement studies addressed potential technical approaches, spiral developments, cockpit commonality and yielded valuable affordability information. Shortly thereafter, HQ AMC decided to reduce program scope based on affordability. As a result, the current effort will consist of three AMP requirements: Communications Navigation Surveillance/Air Traffic Management (CNS/ATM), Boom Control Unit (BCU) and Mode 5. As of Mar 08, OC-ALC assumed management responsibility for the program.

The KC-10 CNS/ATM program will provide worldwide airspace accessibility by FY2015 for the fleet of 59 aircraft. An upgrade of the current Flight Management System (FMS) and Inertial Navigation System (INS) will be required to meet the 2015 CNS/ATM requirements. Avionics components shall use either commercial off-the-shelf (COTS), or military off-the-shelf (MOTS) software and hardware. CNS/ATM requirements include: Required Navigation Performance (RNP-4) Oceanic/Remote for En-route Oceanic Airspace with either 50/50 NM or 30/30 NM separations; Basic Area Nav (BRNAV) for En route European Airspace (9,500ft & up); RNAV 2 & 1 for en route & Terminal airspace operations; Precision-RNAV (P-RNAV) for preferred terminal area routes in Europe (1 NM Accuracy); RNP-4 & RNP-1 for reduced separations en route, and terminal airspace; Time of Arrival Control for Refuel rendezvous (within 30 sec); Automatic Dependent Surveillance-Broadcast (ADS-B) Out for enhanced air and ground surveillance; Global Positioning System (GPS) for enhanced navigation capability; Selective Availability Anti-Spoofing Module (SAASM)

UNCLASSIFIED

R-1 Line Item #226

Page 1 of 12

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401219F: <i>KC-10S</i>
--	--

for Global Positioning System (GPS) Security; Satellite Data Link for ATS and C2 Communications for flight in Oceanic Airspace (FL310-410); Satellite Voice for Beyond Line of Sight (BLOS) Pilot - Controller Communications and C2 Operations; and VHF Data Link (VD)L Mode-2 for LOS Pilot - Controller Communications and C2 Operations. FAA airworthiness certification of the modification is required.

The KC-10 Boom Control Unit (BCU), responsible for the operation of the KC-10's primary air refueling mission, will soon be unsupportable due to parts obsolescence as early as 2010. Once the BCU spares pool is exhausted (estimated to be 2012 +/- 2 years), any KC-10 requiring a BCU repair or replacement will not be capable of performing its air refueling mission until a replacement unit is fielded. This modification effort replaces the current BCU to overcome these parts obsolescence issues. The replacement BCU will be form, fit, function, and interface identical to the existing unit so as to be fully interchangeable.

The Mode 5 modification is a DoD-mandated (IOC by 2014, FOC by 2020) upgrade to the KC-10's Identify Friend or Foe (IFF) system (the primary means of aircraft identification during Air Defense operations). The Mode 5 upgrade will increase anti-spoofing/exploitation capabilities, and lower the possibility of aircraft/aircrew loss due to misidentification of friendly aircraft. The modification will include a new Mode 5 crypto applique, new IFF control panel, a circuit card upgrade to the APX-119 transponder, support equipment upgrades and replacement of data loader from the avionics bay to the flight deck.

This program has associated APAF funding in Program Elements 41219F and 41897F.

These efforts support fielded weapons systems and therefore are assigned to Budget Activity 7, Operational Systems Development.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	35.586	0.000	0.000	0.000
Current President's Budget	3.800	35.586	56.669	0.000	56.669
Total Adjustments	3.800	0.000	56.669	0.000	56.669
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	3.800	0.000	56.669	0.000	56.669

UNCLASSIFIED

R-1 Line Item #226

Page 2 of 12

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0401219F: *KC-10S*

Change Summary Explanation

FY2009 funding will be used to support Boom Control Unit Phase II RDT&E activities such as the Critical Design Review (CDR). FY2011 funding will be used to support continuation of the CNS/ATM Engineering Manufacturing Development (EMD) activities, including a Critical Design Review (CDR) and test and evaluation events.

UNCLASSIFIED

R-1 Line Item #226

Page 3 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401219F: <i>KC-10S</i>				PROJECT 675195: <i>Aircraft Modernization Program (AMP)</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675195: <i>Aircraft Modernization Program (AMP)</i>	3.800	35.586	56.669	0.000	56.669	13.791	0.000	0.000	0.000	0.000	125.339
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

In mid-FY07, concept refinement studies addressed potential technical approaches, spiral developments, cockpit commonality and yielded valuable affordability information. Shortly thereafter, HQ AMC decided to reduce program scope based on affordability. As a result, the current effort will consist of three AMP requirements: Communications Navigation Surveillance/Air Traffic Management (CNS/ATM), Boom Control Unit (BCU) and Mode 5. As of Mar 08, OC-ALC assumed management responsibility for the program.

The KC-10 Communications, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) program will provide worldwide airspace accessibility by FY2015 for the fleet of 59 aircraft. An upgrade of the current Flight Management System (FMS) and Inertial Navigation System (INS) will be required to meet the 2015 CNS/ATM requirements. Avionics components shall use either commercial off-the-shelf (COTS) or military off-the-shelf (MOTS) software and hardware. CNS/ATM requirements include: RNP-4 Oceanic/Remote for En-route Oceanic Airspace with either 50/50 NM or 30/30 NM separations; Basic Area Nav (BRNAV) for En route European Airspace (9,500ft & up); RNAV 2 & 1 for En route & Terminal airspace operations; Precision-RNAV (P-RNAV) for Preferred terminal area routes in Europe (1 NM Accuracy); RNP-4 & RNP-1 for Reduced separations en route, and terminal airspace; Time of Arrival Control for Refuel rendezvous (within 30 sec); ADS-B Out for Enhanced air and ground surveillance; Global Positioning System (GPS) for Enhanced Navigation Capability; SAASM for GPS Security; Satellite Data Link for ATS and C2 Communications for flight in Oceanic Airspace (FL310-410); Satellite Voice for BLOS Pilot - Controller Communications C2 Operations; and VDL Mode-2 for LOS Pilot - Controller Communications and C2 Operations. FAA airworthiness certification of the modification is required.

The KC-10 Boom Control Unit (BCU), responsible for the operation of the KC-10's primary air refueling mission, is unsupportable due to parts obsolescence. Once the BCU spares pool is exhausted, the KC-10 fleet will not be capable of performing its air refueling mission until a BCU replacement unit is fielded. This modification effort replaces the current BCU to overcome these parts obsolescence issues, to improve diagnostics, and add the capability to provide boom position information to an external recording device (planned future recording capability). The Advanced BCU (A-BCU) will also add the capability to accept inputs from the existing, or next generation Central Air Data Computer (CADC). The A-BCU will be form, fit, function, and interface identically to the existing unit so as to be fully interchangeable.

The Mode 5 modification is a DoD-mandated (IOC by 2014, FOC by 2020) upgrade to the KC-10's Identify Friend or Foe (IFF) system (the primary means of aircraft identification during Air Defense operations). The Mode 5 upgrade will increase anti-spoofing/exploitation capabilities, and lower the possibility of aircraft/aircrew loss

UNCLASSIFIED

R-1 Line Item #226

Page 4 of 12

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401219F: <i>KC-10S</i>	PROJECT 675195: <i>Aircraft Modernization Program (AMP)</i>

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0401219F: <i>Boom Control Unit (BCU) Mod # 7727 Procurement</i>	0.000	0.000	2.163	0.000	2.163	1.854	0.000	0.000	0.000	0.000	0.000
• PE 0401219F (1): <i>Mode 5 Mod # 7728 Procurement</i>	0.000	0.000	2.081	0.000	2.081	2.524	7.865	0.622	0.000	0.000	0.000
• PE 0401219F (2): <i>CNS/ATM Mod # 7726 Procurement</i>	0.000	0.000	0.000	0.000	0.000	35.670	72.289	72.385	35.518	0.000	0.000

D. Acquisition Strategy

Acquisition Approach Summary. The acquisition will be in accordance with Federal Acquisition Regulation (FAR) Part 15, Contracting by Negotiation. This acquisition will seek to award to a single integrator to accomplish design/development, test and evaluation, production, and installation and utilize Performance Price Tradeoff (PPT) source selection procedures. Sufficient competition is expected since there are several contractors with experience in CNS/ATM integration on military and commercial aircraft.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

R-1 Line Item #226

Page 6 of 12

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401219F: <i>KC-10S</i>				PROJECT 675195: <i>Aircraft Modernization Program (AMP)</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Studies and Analysis	Various	Boeing Corp Oklahoma City, OK	1.496	0.000		0.000		0.000		0.000	0.000	1.496	0.000
Development Engineering, Design, and Integration (BCU Phase I)	Various	Boeing Corp Oklahoma City, OK, Long Beach, CA	10.354	0.000		0.000		0.000		0.000	0.000	10.354	0.000
Development Engineering, Design, and Integration (BCU Phase II)	Various	Boeing Corp Oklahoma City, OK, Long Beach, CA	2.010	0.000		0.000		0.000		0.000	0.000	2.010	0.000
Development Engineering, Design, and Integration (BCU Phase III)	Various	TBD TBD	0.000	2.010	Aug 2010	0.000		0.000		0.000	0.000	2.010	0.000
Development Engineering, Design, and Integration (CNS/ATM)	Various	TBD TBD	0.000	28.823	May 2010	54.068	May 2011	0.000		54.068	10.029	92.920	0.000
Development Engineering, Design, and Integration (Mode 5)	Various	TBD TBD	0.000	0.000		1.645	Jan 2011	0.000		1.645	0.000	1.645	0.000
Subtotal			13.860	30.833		55.713		0.000		55.713	10.029	110.435	0.000

Remarks

--

UNCLASSIFIED

R-1 Line Item #226

Page 7 of 12

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401219F: <i>KC-10S</i>				PROJECT 675195: <i>Aircraft Modernization Program (AMP)</i>					

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Gov Test and Evaluation (BCU)	TBD/TBD	TBD TBD	0.000	3.000	Aug 2010	0.000		0.000		0.000	0.000	3.000	0.000
Gov Test and Evaluation (CNS/ATM)	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	3.762	3.762	0.000
Subtotal			0.000	3.000		0.000		0.000		0.000	3.762	6.762	0.000

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mission Support	Various	TBD Tinker AFB, OK	4.850	1.753		0.956	Jun 2011	0.000		0.956	0.000	7.559	0.000
Subtotal			4.850	1.753		0.956		0.000		0.956	0.000	7.559	0.000

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
	18.710	35.586		56.669		0.000		56.669	13.791	124.756	0.000

UNCLASSIFIED

R-1 Line Item #226

Page 8 of 12

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401219F: <i>KC-10S</i>	PROJECT 675195: <i>Aircraft Modernization Program (AMP)</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

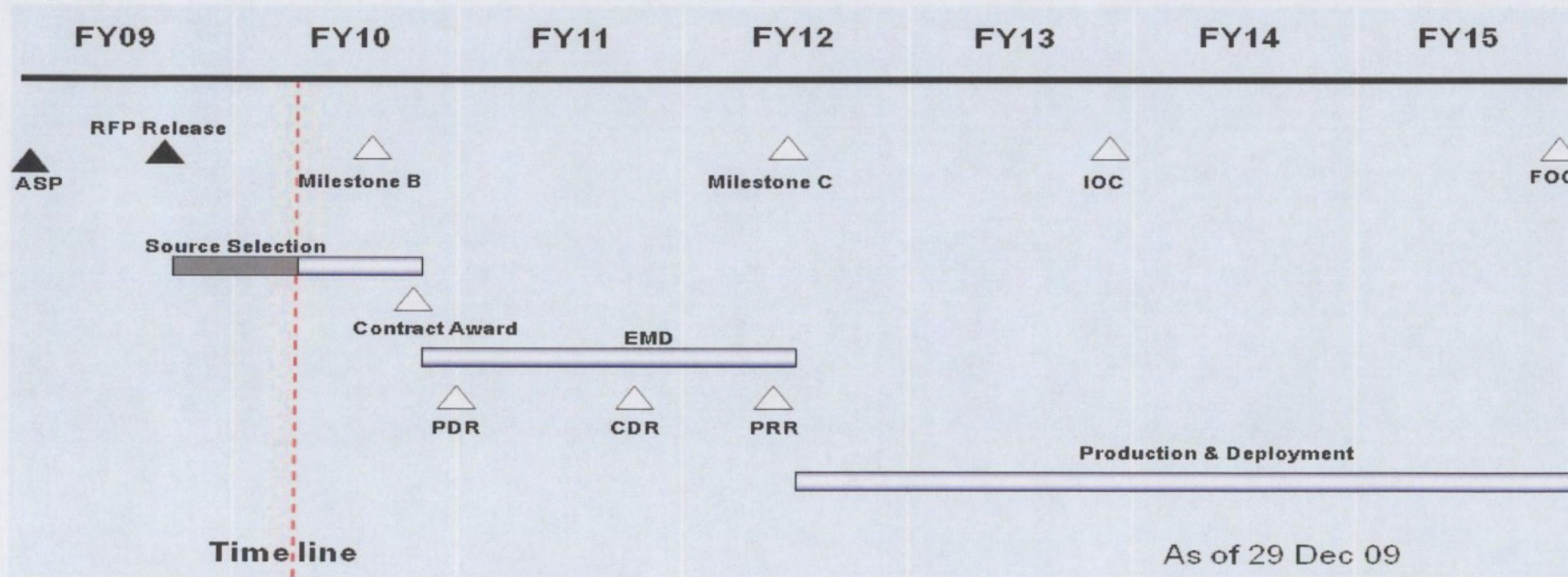
PE 0401219F: KC-10S

PROJECT

675195: Aircraft Modernization Program (AMP)



KC-10 CNS/ATM Schedule



UNCLASSIFIED

R-1 Line Item #226

Page 10 of 12

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

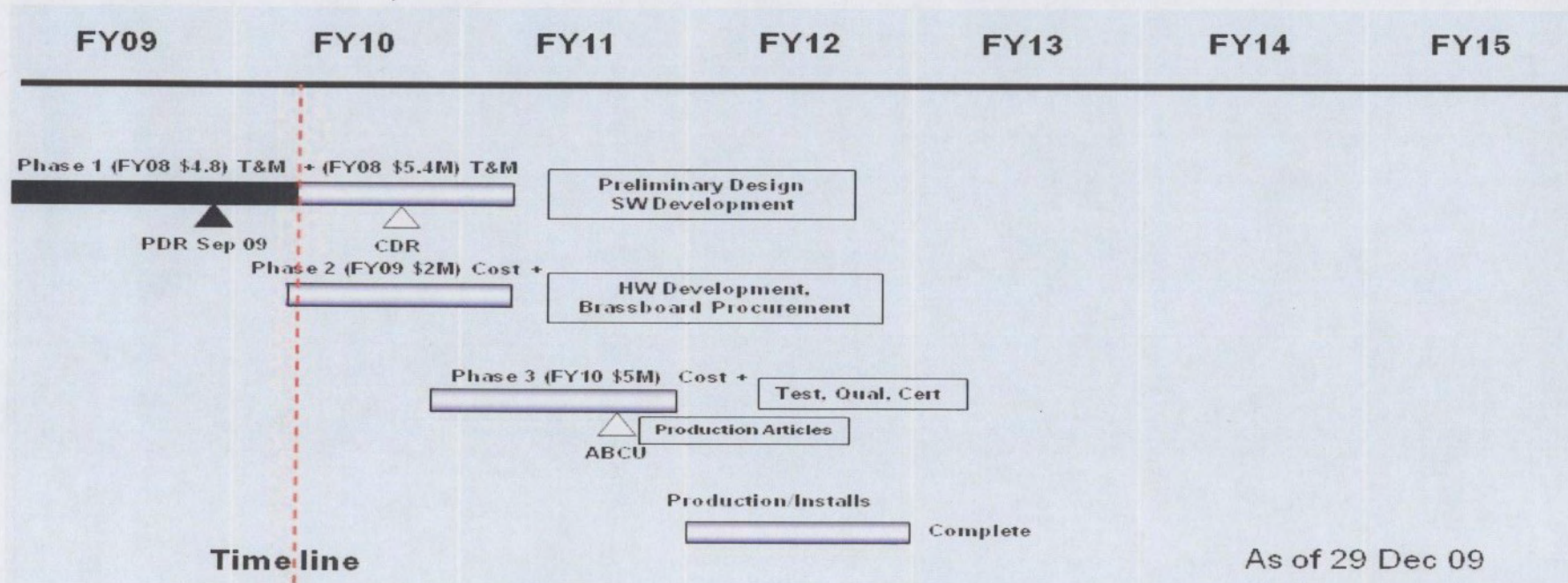
PE 0401219F: KC-10S

PROJECT

675195: Aircraft Modernization Program (AMP)



KC-10 A-BCU Schedule



UNCLASSIFIED

R-1 Line Item #226
Page 11 of 12

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401219F: <i>KC-10S</i>	PROJECT 675195: <i>Aircraft Modernization Program (AMP)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Capabilities Development Document (CDD) AFROCC Approved	1	2009	1	2009
CNS/ATM Engineering Manufacturing Development (EMD) RFP Release	3	2009	3	2009
Source Selection CNS/ATM	4	2009	4	2009
Source Selection CNS/ATM (1)	1	2010	3	2010
CNS/ATM EMD Contract Award/Milestone B	1	2010	4	2010
CNS/ATM EMD	1	2011	4	2011
BCU Preliminary Design Review	4	2009	4	2009
BCU Phase II Contract Award	1	2010	1	2010
BCU Critical Design Review	3	2010	3	2010
BCU Phase III Contract Award	4	2010	4	2010
Two BCU Prototypes Complete	3	2011	3	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401314F: <i>OPERATIONAL SUPPORT AIRLIFT</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	4.916	4.988	0.000	4.988	4.986	10.947	10.940	92.120	Continuing	Continuing
675355: <i>Presidential Aircraft Recapitalization</i>	0.000	4.916	4.988	0.000	4.988	4.986	10.947	10.940	92.120	0.000	4.916

A. Mission Description and Budget Item Justification

FY2010 funding request supports development planning for the Presidential Aircraft Recapitalization (PAR) effort. The PAR will recapitalize the VC-25A system and support the Office of the President in executing Constitutional roles of Commander-in-Chief, Head-of-State, and Chief Executive. The principal mission of the PAR is to provide the President of the United States and the President's staff and guests with safe, comfortable, and reliable air transportation with the same level of security and communications capability as is available at the White House. As a "national level" airborne communications node providing voice, data, video, processed imagery, and network services, the PAR enables the President and traveling staff to address the full range of political and military operations. Funding supports key development planning efforts and products including: systems engineering strategy and analysis; risk analysis and management; concept definition and trade studies; test and evaluation strategy; Life Cycle Cost estimates; sustainment and logistics analysis; information support and network analysis; technology and manufacturing maturity analysis; and acquisition planning and analysis.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	4.916	0.000	0.000	0.000
Current President's Budget	0.000	4.916	4.988	0.000	4.988
Total Adjustments	0.000	0.000	4.988	0.000	4.988
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	4.988	0.000	4.988

UNCLASSIFIED

R-1 Line Item #227

Page 1 of 7

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0401314F: *OPERATIONAL SUPPORT AIRLIFT*

Change Summary Explanation

None

UNCLASSIFIED

R-1 Line Item #227

Page 2 of 7

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401314F: <i>OPERATIONAL SUPPORT AIRLIFT</i>	PROJECT 675355: <i>Presidential Aircraft Recapitalization</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675355: <i>Presidential Aircraft Recapitalization</i>	0.000	4.916	4.988	0.000	4.988	4.986	10.947	10.940	92.120	0.000	4.916
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This funding supports development planning for the Presidential Aircraft Recapitalization (PAR) effort. The PAR will recapitalize the VC-25A system and support the Office of the President in executing Constitutional roles of Commander-in-Chief, Head-of-State, and Chief Executive. The principal mission of the PAR is to provide the President of the United States and the President's staff and guests with safe, comfortable, and reliable air transportation with the same level of security and communications capability as is available at the White House. As a "national level" airborne communications node providing voice, data, video, processed imagery, and network services, the PAR enables the President and traveling staff to address the full range of political and military operations. Funding supports key development planning efforts and products including: systems engineering strategy and analysis; risk analysis and management; concept definition and trade studies; test and evaluation strategy; life cycle cost estimates; sustainment and logistics analysis; information support and network analysis; technology and manufacturing maturity analysis; and acquisition planning and analysis.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Development planning: <i>FY 2009 Accomplishments:</i> In FY2009: N/A <i>FY 2010 Plans:</i> In FY2010: Systems engineering strategy and analysis; risk analysis and management; concept definition, requirements analysis and trade studies; test and evaluation strategy; life cycle cost estimates; sustainment and logistics analysis; information support and network analysis; technology and manufacturing maturity analysis; and acquisition planning and analysis.	0.000	4.916	4.988	0.000	4.988

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401314F: <i>OPERATIONAL SUPPORT AIRLIFT</i>	PROJECT 675355: <i>Presidential Aircraft Recapitalization</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> In FY2011 OCO: N/A</p> <p><i>FY 2011 OCO Plans:</i> In FY2011: Systems engineering strategy and analysis; risk analysis and management; concept definition, requirements analysis and trade studies; test and evaluation strategy; life cycle cost estimates; sustainment and logistics analysis; information support and network analysis; technology and manufacturing maturity analysis; and acquisition planning and analysis.</p>					
Accomplishments/Planned Programs Subtotals	0.000	4.916	4.988	0.000	4.988

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (4455): N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Awaiting Presidential Aircraft Recapitalization Analysis of Alternatives update to be deemed sufficient by OSD/CAPE before proceeding to acquisition strategy. Acquisition schedules dependent upon approved acquisition strategy.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401314F: <i>OPERATIONAL SUPPORT AIRLIFT</i>	PROJECT 675355: <i>Presidential Aircraft Recapitalization</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government led studies	TBD/ Various	ASC/XRX Dayton, OH	0.000	4.916	Apr 2010	4.988	Apr 2011	0.000		4.988	Continuing	Continuing	0.000
Subtotal			0.000	4.916		4.988		0.000		4.988			0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	4.916	4.988	0.000	4.988			0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401314F: <i>OPERATIONAL SUPPORT AIRLIFT</i>	PROJECT 675355: <i>Presidential Aircraft Recapitalization</i>
--	---	---

	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Expect completion of key development planning efforts and products including: systems engineering strategy and analysis; risk analysis and management; concept definition, requirements analysis and							■	■	■	■	■	■																				

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401314F: <i>OPERATIONAL SUPPORT AIRLIFT</i>	PROJECT 675355: <i>Presidential Aircraft Recapitalization</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Expect completion of key development planning efforts and products including: systems engineering strategy and analysis; risk analysis and management; concept definition, requirements analysis and	3	2010	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401315F: <i>C-STOL AIRCRAFT</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	1.283	0.000	1.283	1.312	1.330	1.348	1.376	Continuing	Continuing
675379: <i>Light Mobility Aircraft</i>	0.000	0.000	1.283	0.000	1.283	1.312	1.330	1.348	1.376	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Light Mobility Aircraft (LiMA) program will fill an Air Force light mobility gap by acquiring Commercial-Off-The-Shelf (COTS) aircraft, which are also suitable for building partner capacity (BPC) especially in lesser developed partner nations (PN). Suitable aircraft may be single or multi-engine, fixed-wing and capable of operating from austere, unprepared surfaces. This program supports irregular warfare efforts that help prepare partner nations to defend and govern themselves by demonstrating an airlift capability that is consistent with their needs for supporting infrastructure, performance, anticipated methods of employment, acquisition and sustainment costs, and multi-role/multi-mission capability.

FY2011 RDT&E funding will be used for missionization and integration of non-standard components (e.g., High Frequency (HF) communications equipment) as well as key development planning efforts and products such as systems engineering strategy and analysis, risk analysis and management, test and evaluation strategy, life cycle cost estimates, sustainment and logistics analysis, and acquisition planning and analysis.

This is a FY2011 new start.

This effort supports a non-developmental system and therefore is assigned to Budget Activity 7, Operational Systems Development.

UNCLASSIFIED

R-1 Line Item #228

Page 1 of 7

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401315F: <i>C-STOL AIRCRAFT</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	1.283	0.000	1.283
Total Adjustments	0.000	0.000	1.283	0.000	1.283
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	1.283	0.000	1.283

Change Summary Explanation

This is a FY2011 new start.

UNCLASSIFIED

R-1 Line Item #228

Page 2 of 7

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401315F: <i>C-STOL AIRCRAFT</i>	PROJECT 675379: <i>Light Mobility Aircraft</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675379: <i>Light Mobility Aircraft</i>	0.000	0.000	1.283	0.000	1.283	1.312	1.330	1.348	1.376	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Light Mobility Aircraft (LiMA) program will fill an Air Force light mobility gap by acquiring Commercial-Off-The-Shelf (COTS) aircraft, which are also suitable for building partner capacity (BPC) especially in lesser developed partner nations (PN). Suitable aircraft may be single or multi-engine, fixed-wing and capable of operating from austere, unprepared surfaces. This program supports irregular warfare efforts that help prepare partner nations to defend and govern themselves by demonstrating an airlift capability that is consistent with their needs for supporting infrastructure, performance, anticipated methods of employment, acquisition and sustainment costs, and multi-role/multi-mission capability.

FY2011 RDT&E funding will be used for missionization and integration of non-standard components (e.g., High Frequency (HF) communications equipment) as well as key development planning efforts and products such as systems engineering strategy and analysis, risk analysis and management, test and evaluation strategy, life cycle cost estimates, sustainment and logistics analysis, and acquisition planning and analysis.

This is a FY2011 new start.

This effort supports a non-developmental system and therefore is assigned to Budget Activity 7, Operational Systems Development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Conduct Light Mobility Aircraft (LiMA) development planning and missionization activities. <i>FY 2009 Accomplishments:</i> In FY 2009: N/A	0.000	0.000	1.283	0.000	1.283

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401315F: <i>C-STOL AIRCRAFT</i>	PROJECT 675379: <i>Light Mobility Aircraft</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: N/A</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Conduct missionization and integration of non-standard components (e.g., High Frequency (HF) communications equipment) as well as key development planning efforts and products such as systems engineering strategy and analysis, risk analysis and management, test and evaluation strategy, life cycle cost estimates, sustainment and logistics analysis, and acquisition planning and analysis.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 (OCO): N/A</p>					
Accomplishments/Planned Programs Subtotals	0.000	0.000	1.283	0.000	1.283

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (4627): <i>Related Activities:</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 040315F: <i>C-STOL Aircraft</i>	0.000	0.000	65.699	0.000	65.699	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

A full and open competitive source selection is planned.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

R-1 Line Item #228

Page 4 of 7

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401315F: <i>C-STOL AIRCRAFT</i>				PROJECT 675379: <i>Light Mobility Aircraft</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Ligt Mobility Aircraft (LiMA) Missionization	C/TBD	TBD TBD	0.000	0.000		1.283	Jun 2011	0.000		1.283	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		1.283		0.000		1.283			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	1.283	0.000	1.283			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

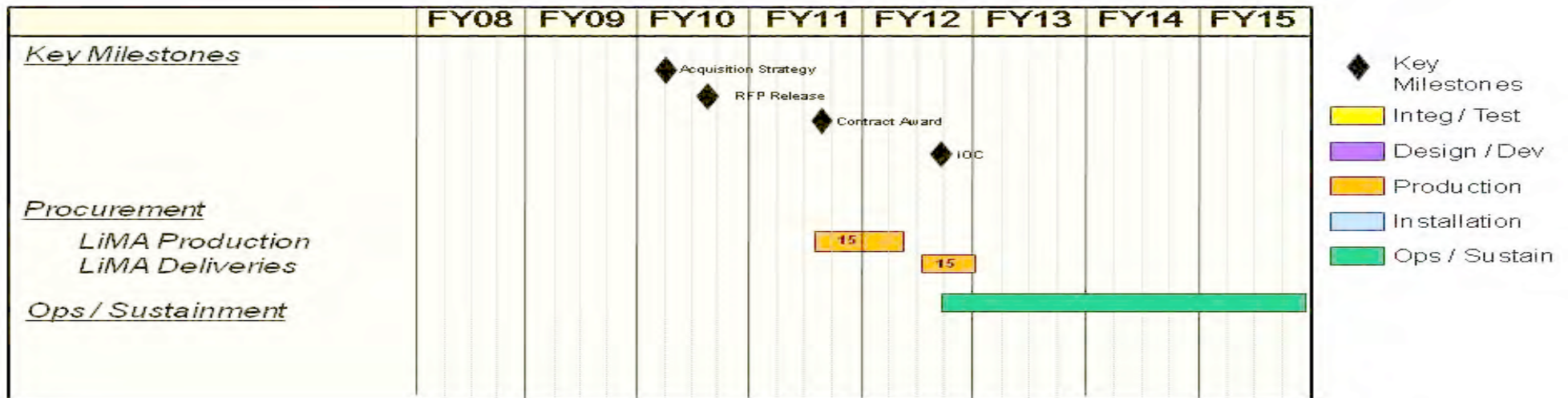
R-1 ITEM NOMENCLATURE

PE 0401315F: *C-STOL AIRCRAFT*

PROJECT

675379: *Light Mobility Aircraft*

Light Mobility Aircraft (LiMA) Schedule



UNCLASSIFIED

R-1 Line Item #228

Page 6 of 7

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0401315F: *C-STOL AIRCRAFT*

PROJECT

675379: *Light Mobility Aircraft*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Release Request for Proposal	3	2010	3	2010
Contract Award	3	2011	3	2011

UNCLASSIFIED

R-1 Line Item #228

Page 7 of 7

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401839F: <i>Airlift/Other Tactical Data Link</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	7.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
675040: <i>Airlift/Other Tactical Data Link</i>	7.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	19.008

A. Mission Description and Budget Item Justification

Tactical Data Links (TDL), as a subset of the broader Airborne Network, are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs are used by all service theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include, but are not limited to: Link-16, Link-11, Situational Awareness Data Link (SADL), Variable Message Format (VMF), Integrated Broadcast Service (IBS), Tactical Targeting Network Technology (TTNT) and Multifunction Advanced Data Link (MADL).

This effort provides critical capability and enhancements to the Airborne Network by creating common development, integration and interoperability across the Air Mobility and Special Operations Forces (SOF) Fleets. This development effort incorporates Line of Sight (LOS) and Beyond Line of Sight (BLOS) TDL capability into the Air Mobility and SOF Fleets to include, but not be limited to: C-17, KC-135, C-130, KC-10, C-5 and other Air Mobility, Refueling, and SOF aircraft. TDLs provide a secure, jam-resistant, digital-data-transfer-network capability with new and standardized waveform and data format allowing intra- and inter-flight communications. TDLs increase mission effectiveness, provide situational awareness, provide positive identification of aircraft in the network, correlate on- and off-board sensor data, target, and threat information. TDL efforts include, but are not limited to: changes and additions to the TDL message standard (MIL-STD-6016D) and other data link interoperability standards including necessary Interface Change Proposals (ICPs); interoperability certification testing with the Joint Interoperability Test Center (JITC); future development, integration, and verification of TDL Operational Flight Program (OFP) upgrades and federated networking components and applications; data gathering processes for future network-centric assessments for all Air Mobility Command (AMC) and Air Force Special Operations Command (AFSOC) platforms; and Joint Tactical Radio System (JTRS) migration activities.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

Airlift/Other Tactical Data Link program is in Budget Activity 7, Operational System Development, since it supports integration of tactical data links into operational systems.

UNCLASSIFIED

R-1 Line Item #229

Page 1 of 13

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401839F: <i>Airlift/Other Tactical Data Link</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	7.923	0.000	0.000	0.000	0.000
Current President's Budget	7.700	0.000	0.000	0.000	0.000
Total Adjustments	-0.223	0.000	0.000	0.000	0.000
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.223	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

Change Summary Explanation

In FY09, Congress provided USAF requested transfer of \$12.612M APAF funding to \$8.0M RDT&E funds.

UNCLASSIFIED

R-1 Line Item #229

Page 2 of 13

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401839F: <i>Airlift/Other Tactical Data Link</i>	PROJECT 675040: <i>Airlift/Other Tactical Data Link</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675040: <i>Airlift/Other Tactical Data Link</i>	7.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	19.008
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Tactical Data Links (TDL), as a subset of the broader Airborne Network, are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs are used by all service theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include, but are not limited to: Link-16, Link-11, Situational Awareness Data Link (SADL), Variable Message Format (VMF), Integrated Broadcast Service (IBS), Tactical Targeting Network Technology (TTNT) and Multifunction Advanced Data Link (MADL).

This effort provides critical capability and enhancements to the Airborne Network by creating common development, integration and interoperability across the Air Mobility and Special Operations Forces (SOF) Fleets. This development effort incorporates Line of Sight (LOS) and Beyond Line of Sight (BLOS) TDL capability into the Air Mobility and SOF Fleets to include, but not be limited to: C-17, KC-135, C-130, KC-10, C-5 and other Air Mobility, Refueling, and SOF aircraft. TDLs provide a secure, jam-resistant, digital-data-transfer-network capability with new and standardized waveform and data format allowing intra- and inter-flight communications. TDLs increase mission effectiveness, provide situational awareness, provide positive identification of aircraft in the network, correlate on- and off-board sensor data, target, and threat information. TDL efforts include, but are not limited to: changes and additions to the TDL message standard (MIL-STD-6016D) and other data link interoperability standards including necessary Interface Change Proposals (ICPs); interoperability certification testing with the Joint Interoperability Test Center (JITC); future development, integration, and verification of TDL Operational Flight Program (OFP) upgrades and federated networking components and applications; data gathering processes for future network-centric assessments for all Air Mobility Command (AMC) and Air Force Special Operations Command (AFSOC) platforms; and Joint Tactical Radio System (JTRS) migration activities.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

Airlift/Other Tactical Data Link program is in Budget Activity 7, Operational System Development, since it supports integration of tactical data links into operational systems.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

R-1 Line Item #229

Page 3 of 13

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0401839F: <i>Airlift/Other Tactical Data Link</i>		PROJECT 675040: <i>Airlift/Other Tactical Data Link</i>		
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Mobility Air Forces (MAF) Airborne Networking Integration (MANI) <i>FY 2009 Accomplishments:</i> In FY 2009: Continued Group A Joint Tactical Radio System (JTRS) Installation and Integration (I&I) Risk Reduction on 4 MAF Platforms: C-5, C-17, KC-10 & C-130J. Completed Aircraft Information Broker(AIB) Output Interface Document (OID), System/Subsystem Specification (SSS), cockpit and cargo display installation designs. Completed AMF JTRS I&I Design and Verification, Radio Frequency (RF) Interoperability Test Plan (ITP) and provide preliminary I&I cost data. <i>FY 2010 Plans:</i> In FY 2010: N/A <i>FY 2011 Base Plans:</i> In FY 2011: N/A <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.		2.822	0.000	0.000	0.000	0.000
MAJOR THRUST: MAF Airborne-network Multi-Layered Sensing (MAMLS) <i>FY 2009 Accomplishments:</i> In FY 2009: Continued MAF DLI Internet Protocol (IP) Beyond Line of Sight (BLOS) Network Architecture Risk Reduction including development of Command & Control (C2) message schema for compatible information exchange between MAF aircraft and ground C2 nodes. Completed Air Force Research Lab (AFRL) in-house simulation of C2 message exchange and Real-Time Information in the Cockpit (RTIC). Demonstrated Common Situational Awareness (CSA) software, secure C2 message transfer and RTIC display between emulated MAF aircraft and Tanker Airlift Control Center (TACC) via Secure Internet Protocol Router Network (SIPRNet) connectivity.		2.198	0.000	0.000	0.000	0.000

UNCLASSIFIED

R-1 Line Item #229

Page 4 of 13

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0401839F: <i>Airlift/Other Tactical Data Link</i>		PROJECT 675040: <i>Airlift/Other Tactical Data Link</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2009 Accomplishments:</i> In FY 2009: Developed C2 message schema interface and integration into AMC terrestrial C2 ground systems.</p> <p><i>FY 2010 Plans:</i> In FY2010: N/A</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: N/A</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>								
<p>MAJOR THRUST: Operational/Program Office Support</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Operational/Program Office Support</p> <p><i>FY 2010 Plans:</i> In FY 2010: N/A</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: N/A</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>				0.726	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals				7.700	0.000	0.000	0.000	0.000

UNCLASSIFIED

R-1 Line Item #229

Page 6 of 13

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401839F: <i>Airlift/Other Tactical Data Link</i>	PROJECT 675040: <i>Airlift/Other Tactical Data Link</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207434F: <i>Link 16 Sup & Sus, (RDT&E)</i>	278.961	65.619	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207445F: <i>Fighter TDL, (RDT&E)</i>	55.069	66.872	85.492	0.000	85.492	169.748	118.655	0.000	0.000	0.000	0.000
• PE 0207446F: <i>Bomber TDL, (RDT&E)</i>	21.603	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207448F: <i>C2ISR TDL, (RDT&E)</i>	1.671	1.659	1.584	0.000	1.584	1.608	1.633	1.658	1.682	0.000	0.000
• PE 0604281F: <i>TDN Enterprise, (RDT&E)</i>	0.000	87.444	102.941	0.000	102.941	67.790	40.507	43.037	34.930	0.000	0.000
• PE 0207434F (1): <i>Link 16 Sup & Sus, (OPAF)</i>	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207445F (2): <i>Fighter TDL, (OPAF)</i>	5.788	9.585	0.929	0.000	0.929	7.695	6.925	7.043	12.785	0.000	0.000
• PE 0207446F (3): <i>Bomber TDL, (OPAF)</i>	0.000	0.000	0.000	0.000	0.000	0.339	0.337	0.368	0.972	0.000	0.000
• PE Not Provided (5074): <i>PE0207434F, Link 16 Sup & Sus, (OPAF)</i>	16.079	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0604281F (4): <i>TDN Enterprise, (OPAF)</i>	0.000	32.343	21.742	0.000	21.742	9.270	0.337	0.311	0.240	0.000	0.000
• PE 0207434F (5): <i>Link 16 Sup & Sus, (O&M)</i>	131.597	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0207445F (6): <i>Fighter TDL, (O&M)</i>	0.208	0.198	0.219	0.000	0.219	0.221	0.257	0.258	0.268	0.000	0.000
• PE 0401839F: <i>Airlift TDL, (O&M)</i>	1.574	8.175	7.857	0.000	7.857	3.629	1.634	1.666	2.944	0.000	0.000
	0.000	33.727	31.382	0.000	31.382	19.165	17.303	20.026	21.534	0.000	0.000

UNCLASSIFIED

R-1 Line Item #229

Page 7 of 13

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401839F: <i>Airlift/Other Tactical Data Link</i>	PROJECT 675040: <i>Airlift/Other Tactical Data Link</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0604281F (7): <i>TDN Enterprise, (O&M)</i>											

D. Acquisition Strategy

The 653rd Electronics Systems Group (ELSG) provides for common development of integration and interoperability across the entire Airborne Network and ensures that TDLS are procured and maintained as joint, end-to-end, command-and-control systems. Platform acquisition strategies vary by program, but the majority of development and integration is normally accomplished by the weapon system prime contractor.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401839F: <i>Airlift/Other Tactical Data Link</i>				PROJECT 675040: <i>Airlift/Other Tactical Data Link</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Group A Risk Reduction/ Design - MANI	Various/ Various	Various Various	10.021	0.000		0.000		0.000		0.000	0.000	10.021	Continuing
C-130 AMP AMF JTRS Risk Reduction	Various/ Various	Various Various	1.350	0.000		0.000		0.000		0.000	0.000	1.350	0.000
AFRL Lab Development	Various/ Various	AFRL Dayton, Ohio	2.198	0.000		0.000		0.000		0.000	0.000	2.198	0.000
Subtotal			13.569	0.000		0.000		0.000		0.000	0.000	13.569	

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AMC C2 Interface Development	Various/ Various	Various Various	0.604	0.000		0.000		0.000		0.000	0.000	0.604	0.000
Subtotal			0.604	0.000		0.000		0.000		0.000	0.000	0.604	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401839F: <i>Airlift/Other Tactical Data Link</i>	PROJECT 675040: <i>Airlift/Other Tactical Data Link</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test	Various/ Various	Various Various	0.567	0.000		0.000		0.000		0.000	0.000	0.567	Continuing
Subtotal			0.567	0.000		0.000		0.000		0.000	0.000	0.567	

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office and Contractor	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	Continuing
Support	C/FFP	Various Various	3.541	0.000		0.000		0.000		0.000	0.000	3.541	Continuing
Subtotal			3.541	0.000		0.000		0.000		0.000	0.000	3.541	

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
	18.281	0.000		0.000		0.000		0.000	0.000	18.281	

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401839F: <i>Airlift/Other Tactical Data Link</i>	PROJECT 675040: <i>Airlift/Other Tactical Data Link</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

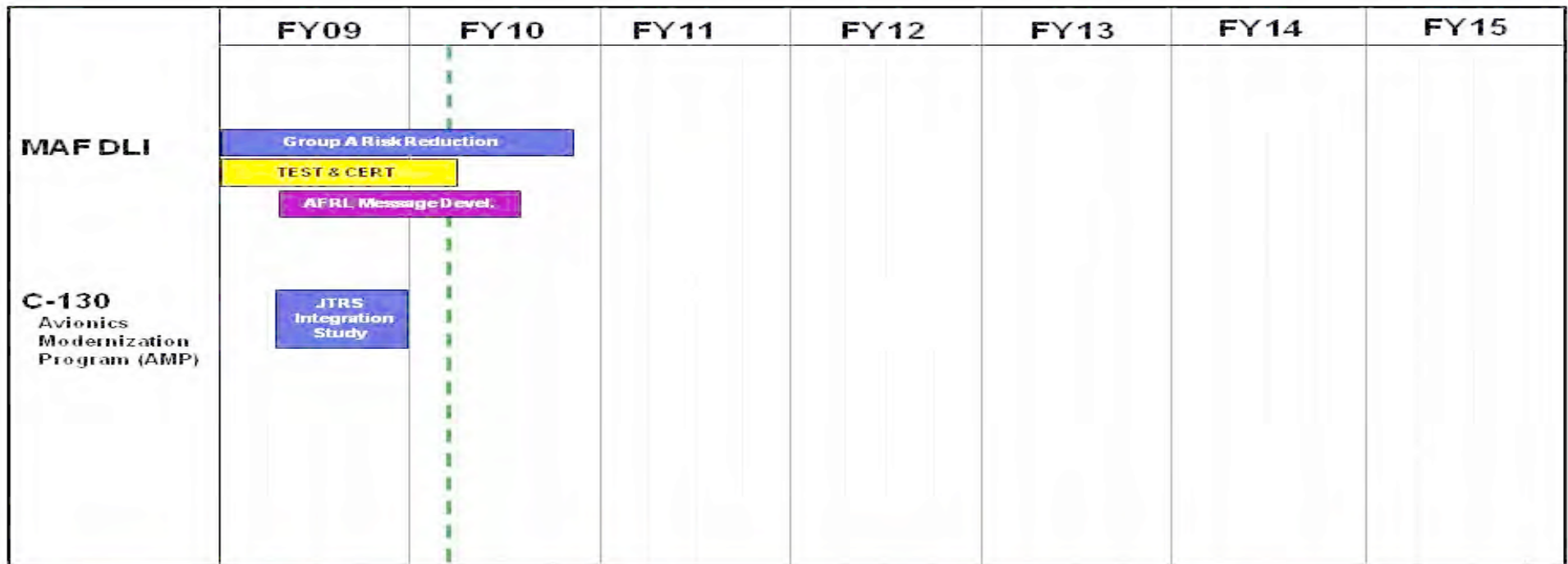
PE 0401839F: *Airlift/Other Tactical Data Link*

PROJECT

675040: *Airlift/Other Tactical Data Link*



Mobility Air Forces Data Link Integration (MAF DLI) Schedule (as of 10 Dec 09)



Concept
 Design / Development
 Production / Fielding
 Integration / Test
 Sustainment

Integrity - Service - Excellence

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401839F: <i>Airlift/Other Tactical Data Link</i>	PROJECT 675040: <i>Airlift/Other Tactical Data Link</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Group A Risk Reduction	1	2009	4	2010
MAF/DLI Test & Certification	1	2009	1	2010
AFRL Message Development	2	2009	3	2010
AMF JTRS Risk Reduction/Integration Study	2	2009	4	2009

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0408011F: <i>SPECIAL TACTICS/COMBAT CONTROL</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	7.549	11.354	7.345	10.325	17.670	7.454	7.571	7.686	7.798	Continuing	Continuing
675138: <i>ST System Development</i>	7.549	11.354	7.345	10.325	17.670	7.454	7.571	7.686	7.798	Continuing	Continuing

A. Mission Description and Budget Item Justification

Battlefield Air Operations (BAO) Kit is a program within the overarching Battlefield Airmen Modernization (BA-Mod) Program. BAO Kit will develop a Family of Systems (FoS) that provides a state-of-the-art Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) suite for AFSOC's Battlefield Airmen. BAO Kit will enhance the three core capabilities of Line of Sight (LOS) targeting, Beyond Line of Sight (XLOS) targeting, and Battlefield Air Operations Human Machine Interface (BAO HMI) while reducing the risk of fratricide and substantially reducing the weight carried. This program will develop and enhance technologies for Battlefield Airmen Combat Controllers (CCT) to recognize, identify, range, nominate and designate targets during both day and night. BAO Kit will also significantly reduce the time required to find, fix, track, target and engage the enemy by providing highly accurate target grid coordinates in three dimensions, generating target imagery both pre and post-strike, and transmitting target data to Command and Control centers. All BAO Kit systems are light, compact and portable for use by dismounted Battlefield Airmen. The significant improvements in operational capability, BAO Kit Increment II, will build upon the HMI and XLOS effort and deliver enhanced capability for the dismounted soldier in terms of dramatic weight reduction, and increased mission effectiveness across the conflict spectrum.

This program is in Budget Activity 7, Operational System Development, since it improves the already fielded capabilities of the Battlefield Airmen Combat Control Teams by demonstrating technology, component and subsystem maturity.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0408011F: <i>SPECIAL TACTICS/COMBAT CONTROL</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	7.549	11.354	0.000	10.325	10.325
Current President's Budget	7.549	11.354	7.345	10.325	17.670
Total Adjustments	0.000	0.000	7.345	0.000	7.345
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	7.345	0.000	7.345

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0408011F: <i>SPECIAL TACTICS/COMBAT CONTROL</i>	PROJECT 675138: <i>ST System Development</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675138: <i>ST System Development</i>	7.549	11.354	7.345	10.325	17.670	7.454	7.571	7.686	7.798	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note
FY 2011 funding totals include \$10.325M requested for Overseas Contingency Operations.

A. Mission Description and Budget Item Justification

Battlefield Air Operations (BAO) Kit is a program within the overarching Battlefield Airmen Modernization (BA-Mod) Program. BAO Kit will develop a Family of Systems (FoS) that provide a state-of-the-art Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) suite for AFSOC's Battlefield Airmen. BAO kit will enhance the three core capabilities of Line of Sight (LOS) targeting, Beyond Line of Sight (XLOS) targeting, and Battlefield Air Operations Human Machine Interface (BAO HMI) while reducing the risk of fratricide and substantially reducing the weight carried. This program will develop and enhance technologies for Battlefield Airmen Combat Controllers (CCT) to recognize, identify, range, nominate, and design targets during both day and night. BAO Kit will also significantly reduce the time required to find, fix, track, target and engage the enemy by providing highly accurate target grid coordinates in three dimensions, generating target imagery both pre and post strike, and transmitting target data to Command and Control centers. All BAO Kit systems are light, compact and portable for use by dismounted Battlefield Airmen. Five sub-component projects (Human I/O, Machine to Machine Software, Power Generation and Management, Communication and Small Wearable Computers) were managed separately prior to the HMI CDD being approved in May 2007. These five components now make up the HMI program.

The significant improvement in operational capability, coupled with dramatic weight reduction, will provide increased mission effectiveness across the conflict spectrum.

Program is in Budget Activity 7 because it provides for the development of technologies and capabilities in support of operational system development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue BAO Kit system and equipment development	7.549	11.354	7.345	10.325	17.670

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0408011F: <i>SPECIAL TACTICS/COMBAT CONTROL</i>	PROJECT 675138: <i>ST System Development</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2009 Accomplishments:</i> In FY 2009: Continue BAO Kit software development (rolled into BAO Kit system and equipment development in FY08 and 09)</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continue system test and evaluation efforts</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continue program office operations effort</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Continuation of above listed activities</p>					
Accomplishments/Planned Programs Subtotals	7.549	11.354	7.345	10.325	17.670

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0408011F: <i>Tactical C-E Equipment Other Procurement, AF</i>	12.484	9.565	11.453	0.000	11.453	15.007	15.274	15.504	15.775	0.000	0.000
• PE 0305234F: <i>WASP Aircraft, AF</i>	0.000	3.608	3.275	0.000	3.275	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The evolutionary acquisition strategy will focus on meeting immediate requirements with current technology while pursuing future increments for improved accuracy, increased vertical and horizontal integration, and reduced weight. Future increments will be incorporated as funding and technology allow.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0408011F: <i>SPECIAL TACTICS/COMBAT CONTROL</i>	PROJECT 675138: <i>ST System Development</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0408011F: <i>SPECIAL TACTICS/COMBAT CONTROL</i>	PROJECT 675138: <i>ST System Development</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Human Machine Interface (HMI)	C/Various	Various Various	4.750	4.797	Apr 2010	1.604	Nov 2010	0.000		1.604	Continuing	Continuing	0.000
Line of Sight	TBD/TBD	TBD TBD	0.050	5.632	Apr 2010	2.087	Nov 2010	10.325		12.412	0.000	18.094	0.000
Machine-To-Machine C4ISR System	C/CPFF	Systems Research & Applications Corp Dayton, Ohio	0.000	0.474	Dec 2009	0.862	Oct 2010	0.000		0.862	Continuing	Continuing	Continuing
Beyond Line of Sight Targeting System	C/CPFF	Various Various	2.470	0.000		2.121	Nov 2010	0.000		2.121	Continuing	Continuing	0.000
Subtotal			7.270	10.903		6.674		10.325		16.999			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
N/A	TBD/TBD	TBD TBD	0.000	0.000		0.050	Dec 2010	0.000		0.050	0.000	0.050	0.000
Subtotal			0.000	0.000		0.050		0.000		0.050	0.000	0.050	0.000

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0408011F: <i>SPECIAL TACTICS/COMBAT CONTROL</i>	PROJECT 675138: <i>ST System Development</i>
--	--	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Agency Support	MIPR	46TS Eglin AFB, FL	0.000	0.231	Jan 2010	0.421	Dec 2010	0.000		0.421	0.000	0.652	0.000
Integration and Certification	Various	Various Various	0.279	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.279	0.231		0.421		0.000		0.421			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Support	Various	Various Various	0.000	0.220	Nov 2009	0.200	Mar 2011	0.000		0.200	Continuing	Continuing	Continuing
Subtotal			0.000	0.220		0.200		0.000		0.200			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	7.549	11.354		7.345		10.325		17.670			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0408011F: <i>SPECIAL TACTICS/COMBAT CONTROL</i>	PROJECT 675138: <i>ST System Development</i>
--	--	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
--	------------------------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

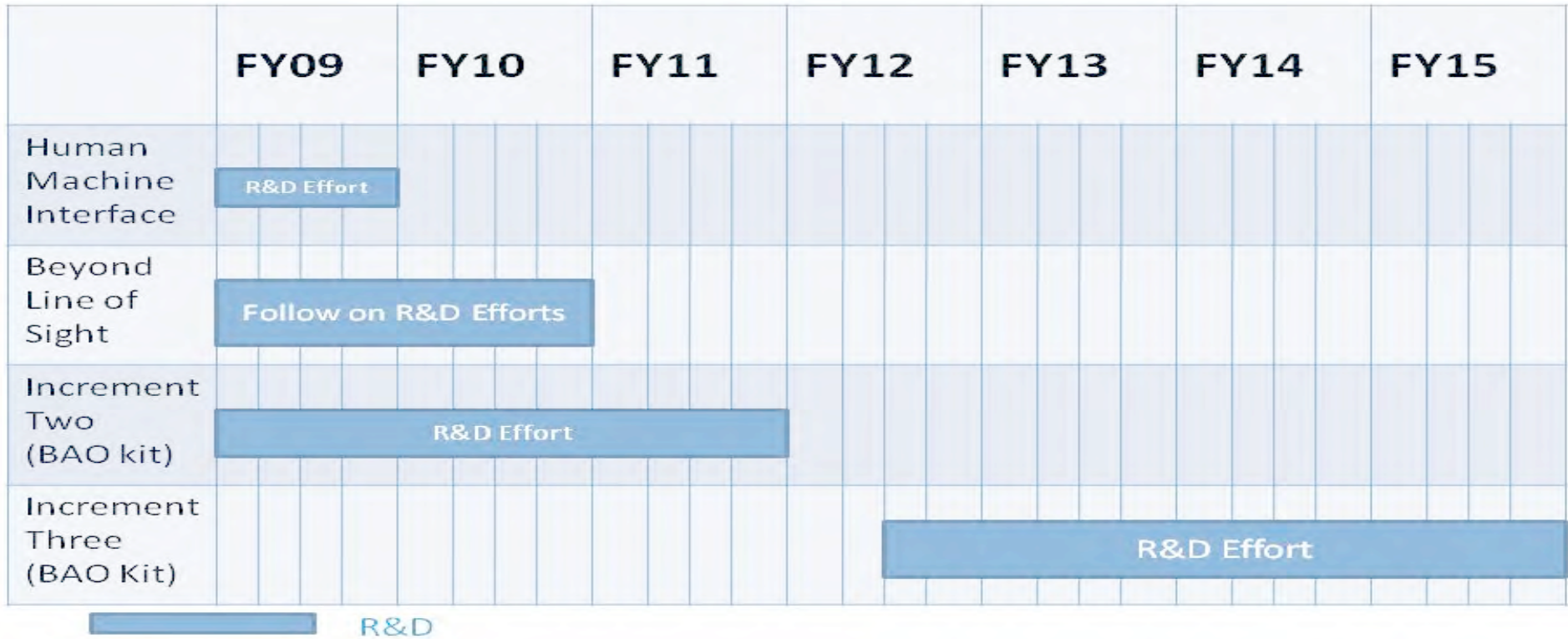
PE 0408011F: *SPECIAL TACTICS/COMBAT CONTROL*

PROJECT

675138: *ST System Development*

BAO Kit Schedule

As of 7 Aug 09



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0408011F: <i>SPECIAL TACTICS/COMBAT CONTROL</i>	PROJECT 675138: <i>ST System Development</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
HMI Research & Development	1	2009	4	2009
Beyond LOS Development	1	2009	4	2010
Increment II	1	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702207F: <i>Depot Maintenance (Non-IF)</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	1.489	1.508	1.514	0.000	1.514	1.536	1.587	1.612	1.636	Continuing	Continuing
673326: <i>Precision Measurement & Calibration</i>	1.489	1.508	1.514	0.000	1.514	1.536	1.587	1.612	1.636	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program develops, tests, and evaluates national and Air Force measurement standards (hardware) and calibration equipment in support of all Air Force programs and activities, including Precision Measurement Equipment Laboratories (PMELs) worldwide. Metrology research and development provides technology to support systems in all phases of development and acquisition, as well as Air Force R&D laboratories, test ranges, ground test facilities, and operational weapons systems support. Rapidly changing technology requires continuing research and development of measurement standards and calibration equipment to ensure modern weapon systems meet Air Force readiness objectives. This program addresses all metrology disciplines and includes the technology areas of laser, infrared, microwave, millimeter wave, optical, physical, mechanical, electrical, electronic, and ionizing radiation measurements. Metrology is a technical discipline devoted to the science of measurements and to the study and improvement of measurement technology. Measurements are the foundation of military system development, quality assurance, hardware conformance testing and system readiness tests. The integrity of these tests is assured through calibration and traceability assurance schemes. The capability to measure and calibrate must parallel the emergence of new technology, new ranges, and new capabilities of military systems. Lack of new measurement capability impedes or blocks the successful exploitation of new technologies, especially in the movement from development laboratory to production to deployment. R&D efforts are essential within the DoD to pace these requirements, otherwise, these same new systems will suffer time delays, excessive cost, and increased risk due to unreliable test results in all phases of development, production, deployment and operation.

This program is in budget activity 7 - Operational System Development because it supports operational systems.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702207F: <i>Depot Maintenance (Non-IF)</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	1.527	1.508	0.000	0.000	0.000
Current President's Budget	1.489	1.508	1.514	0.000	1.514
Total Adjustments	-0.038	0.000	1.514	0.000	1.514
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.038	0.000	1.514	0.000	1.514

Change Summary Explanation

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner."

UNCLASSIFIED

R-1 Line Item #231

Page 2 of 8

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702207F: <i>Depot Maintenance (Non-IF)</i>	PROJECT 673326: <i>Precision Measurement & Calibration</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
673326: <i>Precision Measurement & Calibration</i>	1.489	1.508	1.514	0.000	1.514	1.536	1.587	1.612	1.636	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This program develops, tests, and evaluates national and Air Force measurement standards (hardware) and calibration equipment in support of all Air Force programs and activities, including Precision Measurement Equipment Laboratories (PMELs) worldwide. Metrology research and development provides technology to support systems in all phases of development and acquisition, as well as Air Force R&D laboratories, test ranges, ground test facilities, and operational weapons systems support. Rapidly changing technology requires continuing research and development of measurement standards and calibration equipment to ensure modern weapon systems meet Air Force readiness objectives. This program addresses all metrology disciplines and includes the technology areas of laser, infrared, microwave, millimeter wave, optical, physical, mechanical, electrical, electronic, and ionizing radiation measurements. Metrology is a technical discipline devoted to the science of measurements and to the study and improvement of measurement technology. Measurements are the foundation of military system development, quality assurance, hardware conformance testing and system readiness tests. The integrity of these tests is assured through calibration and traceability assurance schemes. The capability to measure and calibrate must parallel the emergence of new technology, new ranges, and new capabilities of military systems. Lack of new measurement capability impedes or blocks the successful exploitation of new technologies, especially in the movement from development laboratory to production to deployment. R&D efforts are essential within the DoD to pace these requirements, otherwise, these same new systems will suffer time delays, excessive cost, and increased risk due to unreliable test results in all phases of development, production, deployment and operation.

This program is in budget activity 7 - Operational System Development because it supports operational systems.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue development of national measurement standards to support Air Force infrared / laser / electro-optical weapon systems and support equipment. <i>FY 2009 Accomplishments:</i> In FY 2009: Continuation of above listed activities	0.504	0.578	0.549	0.000	0.549

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702207F: <i>Depot Maintenance (Non-IF)</i>	PROJECT 673326: <i>Precision Measurement & Calibration</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2010 Plans:</i> In FY 2010: Continuation of above listed activities					
<i>FY 2011 Base Plans:</i> In FY 2011: Continuation of above listed activities					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not applicable					
Accomplishments/Planned Programs Subtotals	1.489	1.508	1.514	0.000	1.514

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (7389): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy
Primarily accomplish through intergovernmental transfer between the Department of Defense and other Federal Departments.

E. Performance Metrics
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0702207F: <i>Depot Maintenance (Non-IF)</i>					PROJECT 673326: <i>Precision Measurement & Calibration</i>				

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
National Institute of Standards & Technology	MIPR	TBD TBD	1.258	1.215		1.435		0.000		1.435	Continuing	Continuing	Continuing
Department of Energy	MIPR	TBD TBD	0.045	0.050		0.000		0.000		0.000	Continuing	Continuing	Continuing
DoD Army	MIPR	TBD TBD	0.012	0.040		0.000		0.000		0.000	Continuing	Continuing	Continuing
AFMC	TBD/TBD	TBD TBD	0.076	0.078		0.079		0.000		0.079	Continuing	Continuing	Continuing
AFMC (AEDC)	MIPR	TBD TBD	0.090	0.125		0.000		0.000		0.000	0.000	0.215	0.000
Contract	TBD/TBD	TBD TBD	0.008	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			1.489	1.508		1.514		0.000		1.514			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.489	1.508		1.514		0.000		1.514			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702976F: <i>Facilities Restoration & Modernization (Logistics)</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	44.778	8.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
675367: <i>Alternative Energy</i>	44.778	8.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification

Alternative energy initiatives validate the operational use of alternative energy technologies for use at Air Force installations. The effort includes evaluating coal to liquid technology, wind, solar, hybrid wind diesel power production and geo-thermal ground source heat pumps. Federal law requires all federal agencies to increase the use of renewable. Annual goals for electricity generated with renewable increase every year beginning with FY07 with a final goal of 25% in 2025. This initiative provides alternative sources for electric power that decreases US dependence of foreign oil.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	44.778	8.000	0.000	0.000	0.000
Current President's Budget	44.778	8.000	0.000	0.000	0.000
Total Adjustments	0.000	0.000	0.000	0.000	0.000
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

Change Summary Explanation

FY09 Congressional Earmarks to research and develop alternative energy

UNCLASSIFIED

R-1 Line Item #232

Page 1 of 8

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702976F: <i>Facilities Restoration & Modernization (Logistics)</i>	PROJECT 675367: <i>Alternative Energy</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675367: <i>Alternative Energy</i>	44.778	8.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Alternative energy initiatives validate the operational use of alternative energy technologies for use at Air Force installations. The effort includes evaluating coal to liquid technology, wind, solar, hybrid wind diesel power production and geo-thermal ground source heat pumps. Federal law requires all federal agencies to increase the use of renewable. Annual goals for electricity generated with renewable increase every year beginning with FY07 with a final goal of 25% in 2025. This initiative provides alternative sources for electric power that decreases US dependence of foreign oil.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Research and Develop Alternative Energy Initiatives <i>FY 2009 Accomplishments:</i> In FY 2009: Continuation of above listed activities <i>FY 2010 Plans:</i> In FY 2010: Continuation of above listed activities <i>FY 2011 Base Plans:</i> In FY 2011: N/A <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A	27.078	8.000	0.000	0.000	0.000
MAJOR THRUST: Research the Handling of CTL Bi-Products	5.000	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702976F: <i>Facilities Restoration & Modernization (Logistics)</i>	PROJECT 675367: <i>Alternative Energy</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2010 Plans:</i> In FY 2010: N/A <i>FY 2011 Base Plans:</i> In FY 2011: N/A <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A						
MAJOR THRUST: Evaluate the Concept of Hybrid Wind Diesel <i>FY 2009 Accomplishments:</i> In FY 2009: Continuation of above listed activities <i>FY 2010 Plans:</i> In FY 2010: N/A <i>FY 2011 Base Plans:</i> In FY 2011: N/A <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A		0.500	0.000	0.000	0.000	0.000
MAJOR THRUST: Investigate the use of Biomass Gasifier to generate Electrical Energy <i>FY 2009 Accomplishments:</i> In FY 2009: Continuation of above listed activities <i>FY 2010 Plans:</i> In FY 2010: N/A		2.400	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702976F: <i>Facilities Restoration & Modernization (Logistics)</i>	PROJECT 675367: <i>Alternative Energy</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> In FY 2011: N/A					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A					
Accomplishments/Planned Programs Subtotals	44.778	8.000	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (7847): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy
Office of Primary Responsibility (OPR) will determine contract vehicle.

E. Performance Metrics
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702976F: <i>Facilities Restoration & Modernization (Logistics)</i>	PROJECT 675367: <i>Alternative Energy</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Research and Develop Alternative Energy	TBD/TBD	TBD TBD	44.778	8.000	Apr 2011	0.000		0.000		0.000	0.000	52.778	0.000
Subtotal			44.778	8.000		0.000		0.000		0.000	0.000	52.778	0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	44.778	8.000	0.000	0.000	0.000	0.000	52.778	0.000

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702976F: <i>Facilities Restoration & Modernization (Logistics)</i>	PROJECT 675367: <i>Alternative Energy</i>
--	--	---

	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Research and Develop Alternative Energy	■	■	■	■																												

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0702976F: *Facilities Restoration & Modernization (Logistics)*

PROJECT

675367: *Alternative Energy*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Research and Develop Alternative Energy	1	2009	4	2009

UNCLASSIFIED

R-1 Line Item #232

Page 8 of 8

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708012F: <i>Logistic Support Activities</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	23.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
675054: <i>CAM Modernization</i>	23.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Project was set up to fund the development of the Air Force Core Automated Maintenance System (CAMS) which is the standard Air Force base-level automated maintenance information management system for managing weapon systems worldwide. The system supports aircraft, communications-electronics, and support equipment maintenance activities at worldwide operating bases, Air National Guard/AF Reserve sites, and selected North Atlantic Treaty Organization (NATO) locations. CAMS provides on-line remote terminals connected to the Standard Base-Level Computer (SBLC) system throughout the maintenance complexes. CAMS automates aircraft history, aircraft scheduling, aircrew debriefing processes, and provides a common interface for entering base-level maintenance data into other logistics management systems. That development was completed in FY2003.

The FY 2007 funds are for a Congressional add for the Reliability and Maintainability Information System (REMIS) and Omnibus add for Cargo Movement Operations System (CMOS). REMIS provides a single, primary Air Force data system for collecting and processing equipment maintenance data which is used to provide information on reliability and maintainability, trend analysis, failure prediction and weapon system availability. REMIS funds are being used to support the migration/modernization of REMIS to Global Combat Support System - Air Force.

CMOS is a joint-use system that integrates computer hardware, software, and communications to effectively plan, document and manage outbound and inbound cargo and passengers; and to plan, schedule, and monitor the execution of transportation activities in support of deployment and reception of forces. CMOS provides joint warfighters with an end-to-end distribution capability and real time in-transit visibility during all passenger and cargo movements. CMOS is operational at 247 US Air Force, US Army, US Navy, US Marine Corps, National Security Agency, and Defense Contract Management Agency sites, with plans to activate additional US Army sites. This RDT&E funding will be used primarily to install/implement CMOS software and provide implementation training at new US Army sites. Funding will also be used to develop new software capabilities required by US Army customers.

No FY 2009 funds are being requested.

This program is in Budget Activity 7, Operational System Development, because projects are being engineered to support operational weapon systems already in existence.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708012F: <i>Logistic Support Activities</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	23.042	0.000	0.000	0.000	0.000
Total Adjustments	23.042	0.000	0.000	0.000	0.000
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	23.042	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 675054: *CAM Modernization*

Congressional Add: *Logisitic Support Activities.*

	<u>FY 2009</u>	<u>FY 2010</u>
Congressional Add Subtotals for Project: 675054	23.042	0.000
Congressional Add Totals for all Projects	23.042	0.000

Change Summary Explanation

FY 2009: Above Threshold Reprogramming (ATR) for Fusion Center.

UNCLASSIFIED

R-1 Line Item #233

Page 2 of 8

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708012F: <i>Logistic Support Activities</i>	PROJECT 675054: <i>CAM Modernization</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675054: <i>CAM Modernization</i>	23.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This Project was set up to fund the development of the Air Force Core Automated Maintenance System (CAMS) which is the standard Air Force base-level automated maintenance information management system for managing weapon systems worldwide. The system supports aircraft, communications-electronics, and support equipment maintenance activities at worldwide operating bases, Air National Guard/AF Reserve sites, and selected North Atlantic Treaty Organization (NATO) locations. CAMS provides on-line remote terminals connected to the Standard Base-Level Computer (SBLC) system throughout the maintenance complexes. CAMS automates aircraft history, aircraft scheduling, aircrew debriefing processes, and provides a common interface for entering base-level maintenance data into other logistics management systems. That development was completed in FY2003.

The FY 2007 funds are for a Congressional add for the Reliability and Maintainability Information System (REMIS) and Omnibus add for Cargo Movement Operations System (CMOS). REMIS provides a single, primary Air Force data system for collecting and processing equipment maintenance data which is used to provide information on reliability and maintainability, trend analysis, failure prediction and weapon system availability. REMIS funds are being used to support the migration/modernization of REMIS to Global Combat Support System - Air Force.

CMOS is a joint-use system that integrates computer hardware, software, and communications to effectively plan, document and manage outbound and inbound cargo and passengers; and to plan, schedule, and monitor the execution of transportation activities in support of deployment and reception of forces. CMOS provides joint warfighters with an end-to-end distribution capability and real time in-transit visibility during all passenger and cargo movements. CMOS is operational at 247 US Air Force, US Army, US Navy, US Marine Corps, National Security Agency, and Defense Contract Management Agency sites, with plans to activate additional US Army sites. This RDT&E funding will be used primarily to install/implement CMOS software and provide implementation training at new US Army sites. Funding will also be used to develop new software capabilities required by US Army customers.

No FY 2009 funds are being requested.

This program is in Budget Activity 7, Operational System Development, because projects are being engineered to support operational weapon systems already in existence.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708012F: <i>Logistic Support Activities</i>	PROJECT 675054: <i>CAM Modernization</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
Congressional Add: Logistic Support Activities. <i>FY 2009 Accomplishments:</i> In FY09: Provide a Fusion Center combining data from 13 legacy inventory systems to enable item in-transit tracking by serial number. Enhance existing system with software integration patches and hardware components. <i>FY 2010 Plans:</i> In FY10: N/A	23.042	0.000
Congressional Adds Subtotals	23.042	0.000

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (8064): <i>Not Applicable</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

REMIS is executing an incremental code conversion and migration approach of its current functionality from a stand alone mainframe HP/TANDEM environment to the GCSS-AF framework. Code conversion and migration efforts will be obtained under a directed award (sole source), Time and Material with Award Fee Incentives contract.

CMOS will be installing/implementing CMOS software and providing implementation training at new US Army sites. CMOS will also be developing new software functionality to comply with Defense Transportation Regulation mandated electronic data interchange upgrades and will address other compliancy and maintenance issues. Functional upgrades will be added to improve in-transit visibility. Software implementation and training will be provided under an existing contract vehicle. Actual software development will be via a competitively awarded contract expected to be FFP.

Develop a Fusion Center combining data from 13 legacy inventory systems to enable item in-transit tracking by serial number. Enhances existing systems with software integration patches and hardware components.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708012F: <i>Logistic Support Activities</i>	PROJECT 675054: <i>CAM Modernization</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708012F: <i>Logistic Support Activities</i>	PROJECT 675054: <i>CAM Modernization</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Develop Fusion Center	TBD/TBD	Various Various	23.042	0.000		0.000		0.000		0.000	0.000	23.042	1.259
N/A	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.873
Subtotal			23.042	0.000		0.000		0.000		0.000	0.000	23.042	2.132

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	23.042	0.000		0.000		0.000		0.000	0.000	23.042	2.132

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0708012F: *Logistic Support Activities*

PROJECT

675054: *CAM Modernization*

Exhibit R-4: REMIS and CMOS

Fiscal Year	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REMIS GCSS-AF Migration/Modernization																												
CMOS Modification																												

As of 7 January 2008

- ☆ Major Event or Milestone
- ▬ Planned Ongoing Activity
- ▬ Ongoing Activity that is Complete
- ▲ Completed Event
- △ Planned Task(s)

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708012F: <i>Logistic Support Activities</i>	PROJECT 675054: <i>CAM Modernization</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Develop Fusion Center	1	2009	4	2009

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708610F: <i>Logistics Information Technology (LOGIT)</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	144.861	246.250	227.614	0.000	227.614	150.329	53.333	4.740	4.974	Continuing	Continuing
675208: <i>Expeditionary Combat Support System (ECSS)</i>	144.861	246.250	227.614	0.000	227.614	150.329	53.333	4.740	4.974	Continuing	Continuing

A. Mission Description and Budget Item Justification

ECSS is utilizing a Commercial-Off-The-Shelf (COTS) Enterprise Resource Planning (ERP) application to replace 240+ wholesale and retail legacy logistics Information Technology (IT) systems. ECSS is a component of the larger eLog21 systems architecture and consists of modules that will streamline and integrate financials, order management, purchasing, inventory management, distribution, and other business functions of the Air Force onto one platform. Use of ERP/COTS products will provide the warfighter and the AF enterprise with DoD and industry best business practices and capabilities, including product support & engineering, supply chain management, expeditionary logistics Command & Control, acquisition & procurement, and maintenance, repair and overhaul. ECSS will comply with the DoD IT Standards Registry (DISR), Business Enterprise Architecture (BEA), Chief Financial Officer (CFO) Act, and the Joint Financial Management Improvement Program (JFMIP). ECSS will reside on the Global Combat Support System-Air Force (GCSS-AF) Integration Framework (IF). Release 1 FY09-11 efforts include: Pilot A, B, and C activity, Data Cleansing, Solution Development, Early Operational Assessment, testing (to include pre-Milestone B User Evaluation Test in FY10 and preparation for Initial Operational Test & Evaluation in CY11), Training, and Site Preparation. Activities include gap analysis and risk reduction efforts to support Releases 2-4.

This program is in Budget Activity 7, Operational System Development because the program modernizes Automated Information Systems (AIS).

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708610F: <i>Logistics Information Technology (LOGIT)</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	154.861	255.106	0.000	0.000	0.000
Current President's Budget	144.861	246.250	227.614	0.000	227.614
Total Adjustments	-10.000	-8.856	227.614	0.000	227.614
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-10.000	-8.856	227.614	0.000	227.614

Change Summary Explanation

The ECSS Milestone Decision Authority (MDA) approved a major program restructure in September 2009 to reduce overall program risk and implement smaller initial implementation steps. This restructure preserves all planned ECSS functionality by implementing four releases with six pilots versus the original approach of three releases with no pilots. Under this revised construct, the program is pursuing separate Milestone B and C events for each release. Lower level FY09-11 program activities have been rephased to reflect 2009 rescissions. Despite introduction of additional risk, rephased activities support full executability of Release 1 to the MDA approved schedule.

FY2010 Appropriations Conference produced an FY2009 \$10M RDT&E rescission.

FY2011: The FY 2010 President's Budget submittal did not reflect FY2011 through FY 2015 finding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

R-1 Line Item #234

Page 2 of 11

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0708610F: <i>Logistics Information Technology (LOGIT)</i>				PROJECT 675208: <i>Expeditionary Combat Support System (ECSS)</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675208: <i>Expeditionary Combat Support System (ECSS)</i>	144.861	246.250	227.614	0.000	227.614	150.329	53.333	4.740	4.974	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

ECSS is utilizing a Commercial-Off-The-Shelf (COTS) Enterprise Resource Planning (ERP) application to replace 240+ wholesale and retail legacy logistics Information Technology (IT) systems. ECSS is a component of the larger eLog21 systems architecture and consists of modules that will streamline and integrate financials, order management, purchasing, inventory management, distribution, and other business functions of the Air Force onto one platform. Use of ERP/COTS products will provide the warfighter and the AF enterprise with DoD and industry best business practices and capabilities, including product support & engineering, supply chain management, expeditionary logistics Command & Control, acquisition & procurement, and maintenance, repair and overhaul. ECSS will comply with the DoD IT Standards Registry (DISR), Business Enterprise Architecture (BEA), Chief Financial Officer (CFO) Act, and the Joint Financial Management Improvement Program (JFMIP). ECSS will reside on the Global Combat Support System-Air Force (GCSS-AF) Integration Framework (IF). Release 1 FY09-11 efforts include: Pilot A, B, and C activity, Data Cleansing, Solution Development, Early Operational Assessment, testing (to include pre-Milestone B User Evaluation Test in FY10 and preparation for Initial Operational Test & Evaluation in CY11), Training, and Site Preparation. Activities include gap analysis and risk reduction efforts to support Releases 2-4.

This program is in Budget Activity 7, Operational System Development because the program modernizes Automated Information Systems (AIS).

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue ERP System Integration. <i>FY 2009 Accomplishments:</i> In FY 2009: Restructured program and modified System Integrator/COTS software contracts; completed Release 1 blueprinting to include completion/consolidation of the Logistics Financial Blueprint into the Core ECSS Blueprint and resolution of action items identified at the Logistics	144.861	246.250	227.614	0.000	227.614

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0708610F: <i>Logistics Information Technology (LOGIT)</i>		PROJECT 675208: <i>Expeditionary Combat Support System (ECSS)</i>				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>Financial Preliminary Design Review (PDR); initiated Solution Development Labs (SDLs); accomplished enterprise risk mitigation for revised COTS software footprint to include gap analysis; developed functional specifications and initial technical specifications; established formal test strategy and aligned Test community relationships/processes. Developed and coordinated initial draft of the Test & Evaluation Master Plan (TEMP); developed fielding strategy including sequencing across 600 installations.</p> <p><i>FY 2010 Plans:</i> In FY 2010: Complete Release 1 Milestone B. Conduct Release 1 Pilot A and B preparation to include Data Cleansing, Solution Development Labs, Functional Integration Test/System Integration Test, Training, and Site Preparation. Continue work on Release 1 Pilot C activities including technical specifications and Solution Development Lab preparation. Complete Release 1 Pilot A Early Operational Assessment and User Evaluation Test. Execute Release 1 Pilot A Go-live. Continue gap analysis and risk reduction activities for Releases 2-4; including enterprise architecture and process blueprinting of Complex Maintenance, Repair, & Overhaul, Product Lifecycle Management, and Advanced Supply Chain Planning.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Execute Release 1 Pilot B Go-Live. Conduct Release 1 Pilot C Solution Development Labs and Functional Integration Test/System Integration Test. Execute Release 1 Pilot C Go-live. Prepare for Initial Operational Test & Evaluation (IOT&E) in early FY 2012. Continue gap analysis and risk reduction activities for Releases 2-4.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>								
Accomplishments/Planned Programs Subtotals				144.861	246.250	227.614	0.000	227.614

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708610F: <i>Logistics Information Technology (LOGIT)</i>	PROJECT 675208: <i>Expeditionary Combat Support System (ECSS)</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0708610F: <i>Logistics Information Technology (LOGIT), (OPAF)</i>	12.214	0.000	30.914	0.000	30.914	31.994	31.634	0.176	0.179	0.000	0.000
• PE 0708610F (1): <i>Logistics Information Technology (LOGIT), (O&M)</i>	29.254	50.671	53.909	0.000	53.909	46.284	34.534	29.408	28.763	0.000	0.000

D. Acquisition Strategy

The ECSS acquisition strategy used a two-fold approach to award a COTS software solution followed by selection of a System Integrator. ECSS COTS and System Integrator Firm-Fixed Price (FFP) contracts were awarded using Enterprise Software Initiative (ESI) Blanket Purchase Agreement (BPA) (based on GSA schedule). Under the provisions of the System Integrator contract, funds are incrementally obligated; however, the contractor cannot invoice for payment until the performance-based milestone events are achieved and accepted by the AF. The Sep 2009 MDA-approved program restructure did not fundamentally affect the originally approved acquisition strategy or change program scope.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0708610F: <i>Logistics Information Technology (LOGIT)</i>				PROJECT 675208: <i>Expeditionary Combat Support System (ECSS)</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ERP/COTS System Integration	C/FFP	AFMC/754th ELSG/EC Wright Patterson AFB, OH	90.199	132.585	Nov 2009	119.709	Nov 2010	0.000		119.709	Continuing	Continuing	Continuing
OEM Technical Support (COTS Product)	C/FFP	AFMC/754th ELSG/EC Numerous Locations	1.382	5.000	May 2010	5.200	May 2011	0.000		5.200	Continuing	Continuing	Continuing
Subtotal			91.581	137.585		124.909		0.000		124.909			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Contractor Support	C/Various	MCR, BTAS, ETC Wright Patterson AFB, OH	7.137	12.350	Dec 2009	13.048	Dec 2010	0.000		13.048	Continuing	Continuing	Continuing
Engineering Support	C/Various	Jacobs Wright Patterson AFB, OH	5.907	14.154	Dec 2009	15.000	Dec 2010	0.000		15.000	Continuing	Continuing	Continuing
Subtotal			13.044	26.504		28.048		0.000		28.048			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708610F: <i>Logistics Information Technology (LOGIT)</i>	PROJECT 675208: <i>Expeditionary Combat Support System (ECSS)</i>
--	--	---

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Operations	TBD/ Various	AFMC/554th ELSG/EC Wright Patterson AFB, OH	1.442	3.466	Oct 2009	3.500	Oct 2010	0.000		3.500	Continuing	Continuing	Continuing
FFRDC - MITRE Engineering Support	C/FFP	MITRE Wright Patterson AFB, OH	2.961	3.700	Oct 2009	3.540	Oct 2010	0.000		3.540	Continuing	Continuing	Continuing
Subtotal			4.403	7.166		7.040		0.000		7.040			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708610F: <i>Logistics Information Technology (LOGIT)</i>	PROJECT 675208: <i>Expeditionary Combat Support System (ECSS)</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Capabilities Integration Environment (Development & Test) ---Hardware/Software/ Contractor Support	C/FFP	643rd ELSS Maxwell AFB Gunter Annex, AL	4.022	6.096	Jan 2010	8.964	Jan 2011	0.000		8.964	Continuing	Continuing	Continuing
Data ETL---Legacy Data	C/Various	AFMC/754th ELSG/EC Numerous Locations	30.847	66.125	Jun 2010	53.851	Jun 2011	0.000		53.851	Continuing	Continuing	Continuing
Logistics Training Development ---Training Development & Support Materials	TBD/TBD	TBD TBD	0.000	0.013	Jan 2010	1.000	Jun 2011	0.000		1.000	Continuing	Continuing	Continuing
Global Combat Support System AF (GCSS-AF)---Risk Reduction Activities	C/Various	754th ELSG/GC Maxwell AFB Gunter Annex, AL	0.000	1.400	Apr 2010	2.400	Apr 2011	0.000		2.400	Continuing	Continuing	Continuing
Independent Verification & Validation (IV&V)---IV&V Support	C/FFP	AFMC/754th ELSG/EC Wright Patterson AFB, OH	0.964	1.361	Jan 2010	1.402	Jun 2011	0.000		1.402	Continuing	Continuing	Continuing
Subtotal			35.833	74.995		67.617		0.000		67.617			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708610F: <i>Logistics Information Technology (LOGIT)</i>	PROJECT 675208: <i>Expeditionary Combat Support System (ECSS)</i>
--	--	---

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	144.861	246.250	227.614	0.000	227.614			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708610F: <i>Logistics Information Technology (LOGIT)</i>	PROJECT 675208: <i>Expeditionary Combat Support System (ECSS)</i>
--	--	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Release 1: Technology Development	1	2009	3	2010
Release 1, Pilot A: User Evaluation Test (UET)	3	2010	3	2010
Release 1: Milestone B (MS B)	3	2010	3	2010
Release 1, Pilot A: Tools & Vehicle Mgmt - Go Live	4	2010	4	2010
Release 1, Pilot B: Equipment Mgmt - Go-Live	1	2011	1	2011
Release 1, Pilot C: Retail Materiel Mgmt	3	2011	3	2011
Release 1, Phase C: Retail Materiel Management	1	2009	4	2011
Releases 2-4	4	2011	4	2011
Gap Analysis & Risk Reduction Activity	4	2009	4	2011

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	22.133	38.258	6.141	0.000	6.141	6.231	6.323	6.415	6.506	Continuing	Continuing
673318: <i>Product Data Systems Modernization (PDSM)</i>	0.483	0.578	0.562	0.000	0.562	0.575	0.579	0.588	0.596	Continuing	Continuing
675042: <i>Log Application Logistics Integration (LALI)</i>	21.650	5.710	5.579	0.000	5.579	5.656	5.744	5.827	5.910	Continuing	Continuing
675044: <i>Logistics Systems Development (LSD)</i>	0.000	31.970	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification

This program element supports two active projects, 3318 and 5042, and a third, 5044, provides a budgetary accounting location for projects funded through Congressional interest. Product Data System Modernization (PDSM), (project 3318), upgrades Air Force digital data standards to commercial industry standards supporting the Joint Computer-Aided Acquisition Logistic Support (JCALS) System. Logistics Application Logistics Integration (LALI), (project 5042), is the effort to migrate existing Installations and Logistics (IL) legacy systems to the common Global Combat Support System - Air Force (GCSS-AF) Integration Framework (IF). Logistics Systems Development (LSD), (project 5044), provides a budgetary accounting location for various projects having Congressional interest.

This program is a Budget Activity 7, Operational System Development, because projects are being engineered to support already operational weapon systems.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	15.820	6.288	0.000	0.000	0.000
Current President's Budget	22.133	38.258	6.141	0.000	6.141
Total Adjustments	6.313	31.970	6.141	0.000	6.141
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		31.970			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	6.313	0.000	6.141	0.000	6.141

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 675042: Log Application Logistics Integration (LALI)

Congressional Add: *WR-ALC Strategic Airlift Aircraft Availability Improvement*

Congressional Add: *Accelerator-Driven non-Destructive Testing*

Congressional Add: *Warner Robbins Air Logistics Center Special Operations Forces*

Congressional Add: *Micro-Grid Energy Storage Utilizing a Deployable Zinc-Bromide Flow Battery*

Congressional Add: *Engineering Training and Knowledge Preservation System (ETKPS)*

Congressional Add: *Engine Health Management Data Repository Center (EHMDRC)*

Congressional Add Subtotals for Project: 675042

Project: 675044: Logistics Systems Development (LSD)

Congressional Add: *ALC Logistics Integration Environment*

Congressional Add: *Accelerator-Driven Non-Destructive Testing*

	<u>FY 2009</u>	<u>FY 2010</u>
	3.360	0.000
	2.000	0.000
	0.800	0.000
	1.600	0.000
	1.600	0.000
	5.100	0.000
	14.460	0.000
	0.000	0.800
	0.000	2.000

UNCLASSIFIED

R-1 Line Item #235

Page 2 of 29

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>
--	---

Congressional Add Details (\$ in Millions, and Includes General Reductions)

	FY 2009	FY 2010
Congressional Add: <i>Alternate Energy Research and Integration</i>	0.000	18.450
Congressional Add: <i>Assessment of Alternate Energy for Aircraft Ground Equipment</i>	0.000	1.600
Congressional Add: <i>Demonstration and Validation of Renewable Energy Technology</i>	0.000	0.800
Congressional Add: <i>Engine Health Management Plus Data Repository Center</i>	0.000	2.400
Congressional Add: <i>Freedom Fuels/Coal Fuel Alliance</i>	0.000	3.920
Congressional Add: <i>Mitigating RoHS Lead-Free Issues in Aerospace Circuit Board Manufacturing</i>	0.000	0.800
Congressional Add: <i>Technical Order Modernization</i>	0.000	1.200
Congressional Add Subtotals for Project: 675044	0.000	31.970
Congressional Add Totals for all Projects	14.460	31.970

Change Summary Explanation

In FY 2009, Congress added \$38.8M to PE 78611F for tasks that were placed in project 5042 but were for non LALI activities. \$31.04M of these funds were moved out of PE 78611F via technical adjustment; \$29.6M was moved to PE 72976F and \$1.44M was moved to PE 33141F. The tasks moved to PE 72976F include: Expeditionary 200 kW+ Alternative Power Generator (\$0.8M), Alternative Energy Fuel Cell Power (\$1.6M), Assessment of Alternative Energy for Aircraft Ground Equipment (\$1.6M), Eielson AFB Alternative Energy Source Program (\$2.4M), Freedom Fuels/Coal Fuels Alliance (\$3.2M), and Alternative Energy Research (\$20.0M). The task moved to PE 33141F is Technical Order Modernization Environment (\$1.44M). The remaining \$7.76M of these funds will be executed out of PE 78611F Project 5042. These tasks include: WR-ALC Strategic Airlift Aircraft Availablilty Improvement (\$3.360M), Micro-Grid Energy Storage Utilizing a Deployable Zinc-Bromide Flow Battery (\$1.6M), Accelerator-Driven Non-Destructive Testing (\$2.0M), and Warner Robbins Air Logistics Center Special Operations Forces (\$0.8M). The AF will direct these funds to the correct program office for execution.

Reductions in FY09 as a result of higher AF priorities.

In FY 2010, \$31.970M to PE 78611F for various projects having Congressional interest. These Congressional interest projects include ALC Logistics Integration Environment (\$0.8M), Accelerator-Driven Non-Destructive Testing (\$2.0M), Alternate Energy Research and Integration (\$18.450M), Assessment of Alternate Energy for Aircraft Ground Equipment (AGE) (\$1.6M), Demonstration and Validation of Renewable Energy Technology (\$0.8M), Engine Health Management Plus Data Repository Center (\$2.4M), Freedom Fuels/Coal Fuel Alliance (\$3.920M), Mitigating RoHS Lead-Free Issues in Aerospace Circuit Board Manufacturing (\$0.8M), Technical Order Modernization (\$1.2M). The Air Force will direct these funds to the correct program office for execution.

UNCLASSIFIED

R-1 Line Item #235

Page 3 of 29

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0708611F: *Support Systems Development*

In FY 2011: The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 673318: <i>Product Data Systems Modernization (PDSM)</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
673318: <i>Product Data Systems Modernization (PDSM)</i>	0.483	0.578	0.562	0.000	0.562	0.575	0.579	0.588	0.596	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project implements the Air Force Technical Order (TO) functionality. The Enhanced Technical Information Management System (ETIMS) Enterprise is an integration of custom developed software with new and existing applications/components of Electronic Technical Order Viewer, Joint Computer-aided Acquisition and Logistics Support (JCALS), and Document Automation & Production Service (DAPS) On-Demand printing and distribution service. It will provide user friendly, technically accurate, and up-to-date digital technical data at the point of use that is acquired, sustained, distributed and available in digital format from a single point of access for all technical data users. ETIMS will develop new software and integrate existing TO databases. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development, because projects are being engineered to support operational weapon systems already in existence.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Air Force Technical Order functionality implementation of Enhanced Technical Information System (ETIMS) Enterprise. <i>FY 2009 Accomplishments:</i> In FY 2009: Continue multi-year ETIMS effort to provide user friendly, accurate, up-to-date digital technical data to users at point-of-use.	0.483	0.578	0.562	0.000	0.562

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 673318: <i>Product Data Systems Modernization (PDSM)</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010: Continue ETIMS. Develop and incorporate integration of custom developed software into legacy applications and components.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continue ETIMS. Develop and incorporate technical data activities and integratortechical data integ. Incorporate Management and support of AF technical data activities</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	0.483	0.578	0.562	0.000	0.562

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (8701): <i>Not Applicable</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

ETIMS will incrementally develop enhancements to the existing project to ensure a user friendly, technically accurate, and current digital TO management solution at the point of use. The acquisition will be a Cost Plus-Fixed Fee (CPFF) contract line item on a competitively awarded contract utilizing Full and Open Competition (FAR Part 15).

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 673318: <i>Product Data Systems Modernization (PDSM)</i>
--	---	--

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Manage and Support Technical Data activities	C/FP	NGIT 754 ELSG/ILMT Wright Patterson AFB, OH	0.133	0.168	Feb 2010	0.159	Feb 2011	0.000		0.159	Continuing	Continuing	Continuing
Technical Data Integrator/Developer Support	C/CPFF	SAIC 754 ELSG/ILMT Wright Patterson AFB, OH	0.284	0.330	Feb 2010	0.335	Feb 2011	0.000		0.335	Continuing	Continuing	Continuing
Subtotal			0.417	0.498		0.494		0.000		0.494			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Program Office (SPO) Operations	C/FP	OASIS 754 ELSG/ILMT Wright Patterson AFB, OH	0.066	0.080		0.068		0.000		0.068	Continuing	Continuing	Continuing
Subtotal			0.066	0.080		0.068		0.000		0.068			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 673318: <i>Product Data Systems Modernization (PDSM)</i>

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.483	0.578	0.562	0.000	0.562			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

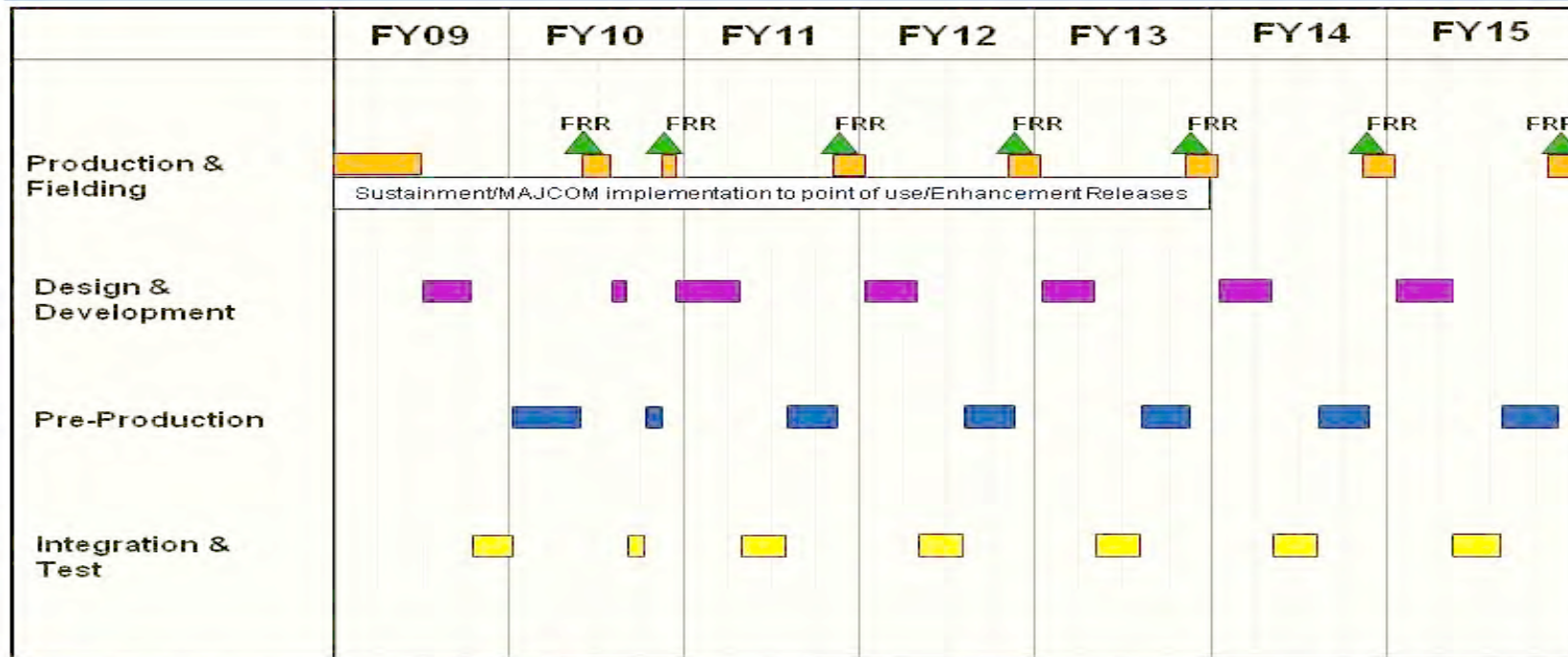
PE 0708611F: Support Systems Development

PROJECT

673318: Product Data Systems Modernization (PDSM)



Enhanced Technical Information Management System (ETIMS) Schedule



Concept activities
 Design / development
 Integration / test
 FRR – Field Readiness Review for Enhancement Releases
 Production / fielding
 Pre-Production
 Key events

Depicted by installation/production flow

UNCLASSIFIED

R-1 Line Item #235

Page 9 of 29

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0708611F: *Support Systems Development*

PROJECT

673318: *Product Data Systems Modernization (PDSM)*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Production/Fielding	1	2009	4	2011
Design/Development	3	2009	2	2011
Pre-Production	1	2010	4	2010
Integration/Test	4	2009	3	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>				PROJECT 675042: <i>Log Application Logistics Integration (LALI)</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675042: <i>Log Application Logistics Integration (LALI)</i>	21.650	5.710	5.579	0.000	5.579	5.656	5.744	5.827	5.910	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Log Application Logistics Integration (LALI) is the effort to migrate existing Logistics Installations and Mission Support (LIMS) legacy systems to the common Global Combat Support System - Air Force Data Services (GCSS-AFDS) Integration Framework and provide integration support to assist this effort. The target is a suite of components that are continuously updated or refined to embrace emerging best practices and commercial information technology innovations. The strategic plan is the creation of a logistics enterprise system using common software and hardware products requiring a smaller number of interfacing transactions.

LALI funding will also provide data discovery and data migration in support of the Expeditionary Combat Support System (ECSS) and provide the ability to keep corporate aggregated data available to senior decision makers during ECSS deployment by base. Activities also include studies and analysis to support both current program planning and execution and future program planning.

Additionally, funding will initiate and implement planned legacy system development for the Integrated Maintenance Data System (IMDS) and other outdated systems which must be replaced, modified, or upgraded to sustain these IT systems for the warfighter.

Activities in this Project also include FY2009 Congressional Adds for non-LALI work. The AF has directed these funds to the correct program office for execution.

This program is in Budget Activity 7, Operational System Development, because projects are being engineered to support operational weapons systems already in existence.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Logistics Application Logistics Integration (LALI) project	7.190	5.710	5.579	0.000	5.579

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 675042: <i>Log Application Logistics Integration (LALI)</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2009 Accomplishments:</i> In FY 2009: Continue multi-year LALI effort to migrate Logistics Installations and Mission Support (LIMS) legacy systems to the common Global Combat Support System - Air Force Data Services (GCSS-AFDS).</p> <p><i>FY 2010 Plans:</i> In FY 2010: Continue LALI. Provide data discovery and migration in support of Expeditionary Combat Support System (ECSS), PE 78610F. Provide studies and analysis to provide both current and future LIMS development and support, to include Integrated Maintenance Data System (IMDS), Service Oriented Architecture (SOA), and Community of Interest (COI).</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: Continue LALI. Continue ECSS support. Continue LIMS studies and analysis. Initiate, develop, implement, and support legacy and follow-on logistics systems.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>					
Accomplishments/Planned Programs Subtotals	7.190	5.710	5.579	0.000	5.579

	FY 2009	FY 2010
<p>Congressional Add: WR-ALC Strategic Airlift Aircraft Availability Improvement</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Develop the C-5 MSG-3 maintenance program to convert the fleet to the new inspection program. In addition, funding was used to develop the C-17 transition plan and ensure the plan</p>	3.360	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 675042: <i>Log Application Logistics Integration (LALI)</i>
B. Accomplishments/Planned Program (\$ in Millions)		
	FY 2009	FY 2010
<p>complies with the C-17 business case analysis (BCA) course of action, as approved Chief of Staff (CoS).</p> <p><i>FY 2010 Plans:</i> In FY 2010: N/A</p>		
<p>Congressional Add: Accelerator-Driven non-Destructive Testing</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Researched a nondestructive inspection technology to characterize material integrity throughout the entire life cycle, thus providing a unique complementary tool for developing improved damage tolerance methodologies. The principles of positron annihilation spectroscopy (PAS) provides a nondestructive evaluation tool due to its inherent sensitivity range in which material defects can be detected.</p> <p><i>FY 2010 Plans:</i> In FY 2010: N/A</p>	2.000	0.000
<p>Congressional Add: Warner Robbins Air Logistics Center Special Operations Forces</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Developed Enhancement Program (AREP) and High Velocity Maintenance (HVM) program through the development of standard visual work cards (SVWCs). SVWCs integrate maintenance technical instructions, inspect/repair data, and aircraft schematic drawings for various maintenance operations used by aircraft maintenance personnel. SVWCs will benefit the Air Force by creating efficiencies related to overall aircraft maintenance work card content management.</p> <p><i>FY 2010 Plans:</i> In FY 2010: N/A</p>	0.800	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 675042: <i>Log Application Logistics Integration (LALI)</i>
B. Accomplishments/Planned Program (\$ in Millions)		
	FY 2009	FY 2010
Congressional Add: Micro-Grid Energy Storage Utilizing a Deployable Zinc-Bromide Flow Battery <i>FY 2009 Accomplishments:</i> In FY 2009: Demonstrates the feasibility of providing a Deployable Zinc-Bromide Flow Battery for use in a variety of applications including Micro-Grid Energy Storage. <i>FY 2010 Plans:</i> In FY 2010: N/A	1.600	0.000
Congressional Add: Engineering Training and Knowledge Preservation System (ETKPS) <i>FY 2009 Accomplishments:</i> In FY 2009: ETKPS provides the AFMC Science and Engineering workforce with competency mapping and knowledge preservation capabilities that are consistent with the SAF/AQR and AF/A1 Competency Development Initiative (CDI) competency mapping protocols. <i>FY 2010 Plans:</i> In FY 2010: N/A	1.600	0.000
Congressional Add: Engine Health Management Data Repository Center (EHMDRC) <i>FY 2009 Accomplishments:</i> In FY 2009: EHMDRC provides support for the development of the KC-135 Ultrasonic Inspection Equipment effort. <i>FY 2010 Plans:</i> In FY 2010: N/A	5.100	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 675042: <i>Log Application Logistics Integration (LALI)</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
Congressional Adds Subtotals	14.460	0.000

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (9054): <i>Not Applicable</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The Engineering & Integration Architecture (EIPA) Flight of the 643rd Electronic Systems Squadron (ELSS) manages the logistics systems engineering and integration issues for the Air Force. EIPA performs a set of activities required by the 754th GCSS-AF to deliver world-class capabilities to our customers. This includes enterprise architecture, engineering technical and functional support of services for the development, integration, installation of modernized Logistics Information Systems, maintenance, and deactivation of redundant systems. The focus is on facilitating the improvement of the systems efficiency through integration and technology insertion and exploiting GCSS-AF provided data services and business intelligence as we move to Service Oriented Architecture (SOA) based exposure of data.

Legacy IT programs will incrementally develop enhancements for such programs as IMDS and others to enable continued required capabilities.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 675042: <i>Log Application Logistics Integration (LALI)</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
LALI Support Contractor (Portfolio Management, Architecture, & Data Management)	C/FP	AF/A4/7 BPA (TAG) Bolling AFB, Washington, D.C.	0.859	0.061	Mar 2010	0.060	Mar 2011	0.000		0.060	Continuing	Continuing	Continuing
LALI Support Contractor (Data Management, Enterprise Architecture, & System Modernization support)	C/FP	AF/A4/7 BPA (TAG) Bolling AFB, Washington, D.C.	1.158	0.934	Mar 2010	0.976	Mar 2011	0.000		0.976	Continuing	Continuing	Continuing
LALI Support Contractor (Data Migration/ Warehousing)	MIPR	GCSS-AFDS WPAFB, OH	2.079	0.079	Sep 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
LALI Support Contractor (Data Management)	C/FP	GCSS-AFDS WPAFB, OH	1.106	0.828	Jan 2010	0.822	Mar 2011	0.000		0.822	Continuing	Continuing	Continuing
LALI Service Oriented Architecture (SOA) Support	MIPR	AF/A4/7 BPA (TAG) Bolling AFB, Washington, D.C.	0.000	1.106	Mar 2010	1.097	Mar 2011	0.000		1.097	Continuing	Continuing	Continuing
LIMS Community of Interest (COI) Support	MIPR	AF/A4/7 BPA (TAG) Bolling AFB, Washington, D.C.	0.000	1.106	Mar 2010	1.097	Mar 2011	0.000		1.097	Continuing	Continuing	Continuing
WR-ALC Strategic Airlift Aircraft Availabilitty Improvement Congressional Add	SS/FFP	Intergraph Corporation Madison, AL	6.065	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
	MIPR		2.000	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 675042: <i>Log Application Logistics Integration (LALI)</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Accerlerator-Driven Non-Destructive Testing Congressional Add		Counterproliferation Branch, 711 HPW/RHPC Brooks AFB, TX											
Warner Robbins Air Logistics Center Special Operations Forces Congressional Add	C/FP	Intergraph Corporation Madison, AL	3.699	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Micro-Grid Energy Storage Utilizing a Deployable Zinc-Bromide Flow Battery Congressional Add	C/FFP	Premium Power, Inc. North Reading, MA	1.600	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Engineering Training and Knowledge Preservation System (ETKPS) Congressional Add	TBD/TBD	TBD TBD	1.600	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Engine Health Management Data Repository Center (EHMDRC) Congressional Add	TM	RJLee Group Tinker AFB, Oklahoma City, OK	5.100	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
IMDS	TBD/TBD	TBD TBD	0.000	0.079	Apr 2010	0.022	Apr 2011	0.000		0.022	Continuing	Continuing	Continuing
Subtotal			25.266	4.193		4.074		0.000		4.074			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>				PROJECT 675042: <i>Log Application Logistics Integration (LALI)</i>					

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMO Tasks (supporting Integration & Development)	C/FP	AF/A4/7 BPA (TAG) Bolling AFB, Washington, D.C.	1.705	1.319	Jan 2010	1.309	Mar 2011	0.000		1.309	Continuing	Continuing	Continuing
Portal/Systems Engineering Support (Integration Task)	C/FP	GCSS-AFDS WPAFB, OH	0.134	0.127	Feb 2010	0.126	Mar 2011	0.000		0.126	Continuing	Continuing	Continuing
Subtotal			1.839	1.446		1.435		0.000		1.435			

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support Contractor (Test Development Range)	C/FP	GCSS-AFDS WPAFB, OH	0.053	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.053	0.000		0.000		0.000		0.000			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>					PROJECT 675042: <i>Log Application Logistics Integration (LALI)</i>				

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMO Support (System Program Office management and operations)	TBD/TBD	AF/A4/7 BPA (TAG) Bolling AFB, Washington, D.C.	0.096	0.071	Dec 2009	0.070	Dec 2010	0.000		0.070	Continuing	Continuing	Continuing
Subtotal			0.096	0.071		0.070		0.000		0.070			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	27.254	5.710	5.579	0.000	5.579			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

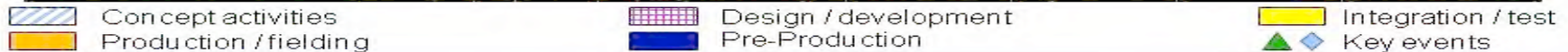
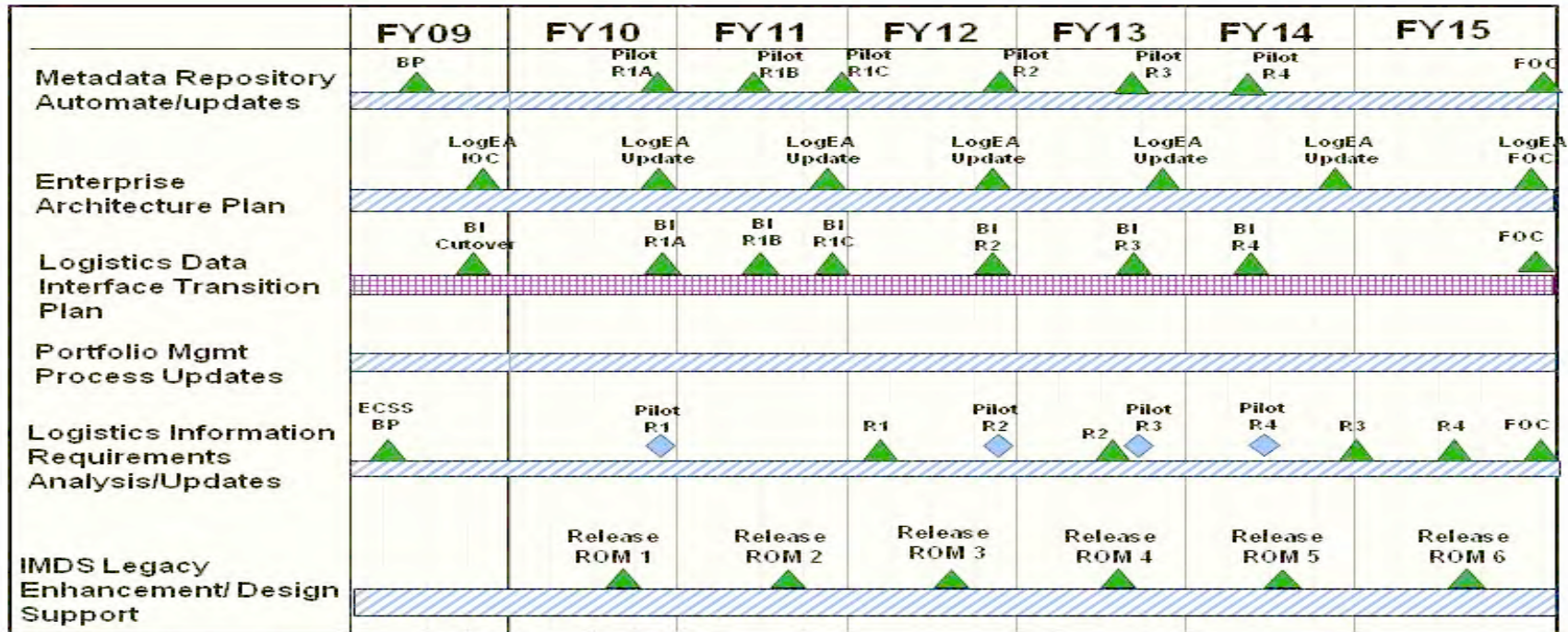
PE 0708611F: Support Systems Development

PROJECT

675042: Log Application Logistics Integration (LALI)



Logistics Application Logistics Integration (LALI) Schedule



UNCLASSIFIED

R-1 Line Item #235

Page 20 of 29

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 675042: <i>Log Application Logistics Integration (LALI)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Metadata Repository (Automate/Updates)	1	2009	4	2011
Metadata Repository (Automate/Updates) Blueprinting (BP)	2	2009	2	2009
Metadata Repository (Automate/Updates) Pilot R1A	4	2010	4	2010
Metadata Repository (Automate/Updates) Pilot R1B	2	2011	2	2011
Metadata Repository (Automate/Updates) Pilot R1C	4	2011	4	2011
Logistics Enterprise Architecture (LogEA) Plan	1	2009	4	2011
LogEA Initial Operational Capability (IOC)	4	2009	4	2009
LogEA Update	4	2010	4	2010
LogEA Update (1)	4	2011	4	2011
Logistics Data Interface (Log DI) Transition Plan	1	2009	4	2011
Log DI Transition Plan Baseline Interface (BI) Cutover	4	2009	4	2009
Portfolio Management Process Updates	1	2009	4	2011
Logistics Information Requirements (LogIR) Analysis/Updates	1	2009	4	2011
LogIR Analysis/Updates Blueprinting (BP)	2	2009	2	2009
LogIR Analysis/Updates Pilot R1	1	2009	4	2010
Legacy Enhancement/Design Support	1	2009	4	2011
Release ROM 1	3	2010	3	2010
Release ROM 2	3	2011	3	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 675044: <i>Logistics Systems Development (LSD)</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675044: <i>Logistics Systems Development (LSD)</i>	0.000	31.970	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Logistics Systems Development (LSD) is a budgetary accounting location for various LSD projects having Congressional interest.

In FY2010 these LSD projects include ALC Logistics Integration, Accelerator-Driven Non-Destructive Testing, Alternate Energy Research and Integration, Assessment of Alternate Energy for Aircraft Ground Equipment (AGE), Demonstration and Validation of Renewable Energy Technology, Engine Health Management Plus Data Repository Center, Freedom Fuels/Coal Fuel Alliance, Mitigating RoHS Lead-Free Issues in Aerospace Circuit Board Manufacturing, and Technical Order Modernization. The Air Force will direct these funds to the correct program office for execution.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
Congressional Add: ALC Logistics Integration Environment <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Initiate ALC Logistics Integration Environment project	0.000	0.800
Congressional Add: Accelerator-Driven Non-Destructive Testing <i>FY 2009 Accomplishments:</i> In FY 2009: N/A	0.000	2.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 675044: <i>Logistics Systems Development (LSD)</i>
B. Accomplishments/Planned Program (\$ in Millions)		
	FY 2009	FY 2010
<i>FY 2010 Plans:</i> In FY 2010: Initiate Accelerator-Driven Non-Destructive Testing project		
Congressional Add: Alternate Energy Research and Integration <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Initiate Alternate Energy Research and Integration project	0.000	18.450
Congressional Add: Assessment of Alternate Energy for Aircraft Ground Equipment <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Initiate Assessment of Alternate Energy for Aircraft Ground Equipment project	0.000	1.600
Congressional Add: Demonstration and Validation of Renewable Energy Technology <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Initiate Demonstration and Validation of Renewable Energy Technology project	0.000	0.800
Congressional Add: Engine Health Management Plus Data Repository Center	0.000	2.400

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 675044: <i>Logistics Systems Development (LSD)</i>
B. Accomplishments/Planned Program (\$ in Millions)		
	FY 2009	FY 2010
<i>FY 2009 Accomplishments:</i> In FY 2009: N/A		
<i>FY 2010 Plans:</i> In FY 2010: Initiate Engine Health Management Plus Data Repository Center project		
Congressional Add: Freedom Fuels/Coal Fuel Alliance <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Initiate Freedom Fuels/Coal Fuel Alliance project	0.000	3.920
Congressional Add: Mitigating RoHS Lead-Free Issues in Aerospace Circuit Board Manufacturing <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Initiate Mitigating RoHS Lead-Free Issues in Aerospace Circuit Board Manufacturing project	0.000	0.800
Congressional Add: Technical Order Modernization <i>FY 2009 Accomplishments:</i> In FY 2009: N/A	0.000	1.200

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 675044: <i>Logistics Systems Development (LSD)</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
<i>FY 2010 Plans:</i> In FY 2010: Initiate Technical Order Modernization project		
Congressional Adds Subtotals	0.000	31.970

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE Not Provided (9784): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Logistics Systems Development (LSD) is a budgetary accounting location for various LSD projects having Congressional interest.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>				PROJECT 675044: <i>Logistics Systems Development (LSD)</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ALC Logistics Integration Congressional Add	TBD/TBD	TBD TBD	0.000	0.800	Sep 2010	0.000		0.000		0.000	0.000	0.800	0.000
Accelerator-Driven Non-Destructive Testing Congressional Add	TBD/TBD	TBD TBD	0.000	2.000	Sep 2010	0.000		0.000		0.000	0.000	2.000	0.000
Alternate Energy Research and Integration Congressional Add	TBD/TBD	TBD TBD	0.000	18.450	Sep 2010	0.000		0.000		0.000	0.000	18.450	0.000
Assessment of Alternate Energy for Aircraft Ground Equipment (AGE) Congressional Add	TBD/TBD	TBD TBD	0.000	1.600	Sep 2010	0.000		0.000		0.000	0.000	1.600	0.000
Demonstration and Validation of Renewable Energy Technology Congressional Add	TBD/TBD	TBD TBD	0.000	0.800	Sep 2010	0.000		0.000		0.000	0.000	0.800	0.000
Engine Health Management Plus Data Repository Center Congressional Add	TBD/TBD	TBD TBD	0.000	2.400	Sep 2010	0.000		0.000		0.000	0.000	2.400	0.000
Freedom Fuels/Coal Fuel Alliance Congressional Add	TBD/TBD	TBD TBD	0.000	3.920	Sep 2010	0.000		0.000		0.000	0.000	3.920	0.000
Mitigating RoHS Lead-Free Issues in	TBD/TBD	TBD TBD	0.000	0.800	Sep 2010	0.000		0.000		0.000	0.000	0.800	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>					PROJECT 675044: <i>Logistics Systems Development (LSD)</i>				

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aerospace Circuit Board Manufacturing Congressional Add													
Technical Order Modernization Congressional Add	TBD/TBD	TBD TBD	0.000	1.200	Sep 2010	0.000		0.000		0.000	0.000	1.200	0.000
Subtotal			0.000	31.970		0.000		0.000		0.000	0.000	31.970	0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	31.970	0.000	0.000	0.000	0.000	31.970	0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0708611F: *Support Systems Development*

PROJECT

675044: *Logistics Systems Development (LSD)*



Logistics Systems Development (LSD) Schedule

	FY09	FY10	FY11	FY12	FY13	FY14	FY15
ALC Logistics Integration Environment		█					
Accelerator-Driven Non-Destructive Testing		█					
Alternate Energy Research and Integration		█					
Assessment of Alternate Energy for Aircraft Ground Equipment (AGE)		█					
Demonstration and Validation of Renewable Energy Technology		█					
Engine Health Management Plus Data Repository Center		█					
Freedom Fuels/Coal Fuel Alliance		█					
Mitigating RoHS Lead-Free Issues in Aerospace Circuit Board Manufacturing		█					
Technical Order Modernization		█					

- Concept activities
- Production / fielding
- Design / development
- Operations / sustainment
- Integration / test
- Key events

FY10 Staffer Brief

UNCLASSIFIED

R-1 Line Item #235

Page 28 of 29

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708611F: <i>Support Systems Development</i>	PROJECT 675044: <i>Logistics Systems Development (LSD)</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
LSD Congressional Add - ALC Logistics Integration	1	2010	4	2010
LSD Congressional Add - Accelerator-Driven Non-Destructive Testing	1	2010	4	2010
LSD Congressional Add - Alternate Energy Research and Integration	1	2010	4	2010
LSD Congressional Add - Assessment of Alternate Energy for Aircraft Ground Equipment (AGE)	1	2010	4	2010
LSD Congressional Add - Demonstration and Validation of Renewable Energy Technology	1	2010	4	2010
LSD Congressional Add - Engine Health Management Plus Data Repository Center	1	2010	4	2010
LSD Congressional Add - Freedom Fuels/Coal Fuel Alliance	1	2010	4	2010
LSD Congressional Add - Mitigating RoHS Lead-Free Issues in Aerospace Circuit Board Manufacturing	1	2010	4	2010
LSD Congressional Add - Technical Order Modernization	1	2010	4	2010

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804743F: <i>OTHER FLIGHT TRAINING</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	2.000	0.805	0.667	0.000	0.667	0.337	0.351	0.349	0.348	Continuing	Continuing
675303: <i>ADSS Development</i>	2.000	0.805	0.667	0.000	0.667	0.337	0.351	0.349	0.348	0.000	0.000

A. Mission Description and Budget Item Justification

Program supports the Air Education and Training command (AETC) Decision Support System (ADSS) which is an automated information system that provides AETC leadership and staff with key management information about training production status, including monitoring and assessment of training. The data and reports from ADSS provide the vital feedback mechanism essential to an effective programming and management process. The hardware and software components of ADSS interact and communicate via the DOD standard communications infrastructure. The system uses DOD information transfer assets that provide seamless communications within and across systems and media.

Recent changes in funding use laws requires compliance with the NDAA and resulting AFI 65-601 allocation/use of development funds. ADSS development funds must now use 3600 funds vice previously used 3400 funds. New law does not allow use of 3400 funds for RDT&E actions. Per direction in the memorandum from SAF/FMBM dated 15 Aug 07, and IAW DoD FRM Vol 2A, 010212 B1, all developmental activities involved in bringing a program to its system objective are to be funded in RDT&E.

This program is Budget Activity 7 - Operational System Development.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804743F: <i>OTHER FLIGHT TRAINING</i>
--	---

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	0.805	0.000	0.000	0.000
Current President's Budget	2.000	0.805	0.667	0.000	0.667
Total Adjustments	2.000	0.000	0.667	0.000	0.667
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	2.000	0.000	0.667	0.000	0.667

Change Summary Explanation

FY11: The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804743F: <i>OTHER FLIGHT TRAINING</i>	PROJECT 675303: <i>ADSS Development</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675303: <i>ADSS Development</i>	2.000	0.805	0.667	0.000	0.667	0.337	0.351	0.349	0.348	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Program supports the Air Education and Training command (AETC) Decision Support System (ADSS) which is an automated information system that provides AETC leadership and staff with key management information about training production status, including monitoring and assessment of training. The data and reports from ADSS provide the vital feedback mechanism essential to an effective programming and management process. The hardware and software components of ADSS interact and communicate via the DOD standard communications infrastructure. The system uses DOD information transfer assets that provide seamless communications within and across systems and media.

Recent changes in funding use laws requires compliance with the NDAA and resulting AFI 65-601 allocation/use of development funds. ADSS development funds must now use 3600 funds vice previously used 3400 funds. New law does not allow use of 3400 funds for RDT&E actions. Per direction in the memorandum from SAF/FMBM dated 15 Aug 07, and IAW DoD FRM Vol 2A, 010212 B1, all developmental activities involved in bringing a program to its system objective are to be funded in RDT&E.

This program is Budget Activity 7 - Operational System Development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Development of AETC Decision Support System (ADSS)	2.000	0.805	0.667	0.000	0.667
<i>FY 2009 Accomplishments:</i>					
In FY 2009: Development of AETC Decision Support System (ADSS)					
<i>FY 2010 Plans:</i>					
In FY 2010: Continue development of AETC Decision Support System (ADSS)					

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804743F: <i>OTHER FLIGHT TRAINING</i>	PROJECT 675303: <i>ADSS Development</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> In FY 2011: Continue development of AETC Decision Support System (ADSS)					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A					
Accomplishments/Planned Programs Subtotals	2.000	0.805	0.667	0.000	0.667

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (10109): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Contract will be awarded with full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804743F: <i>OTHER FLIGHT TRAINING</i>	PROJECT 675303: <i>ADSS Development</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Efforts for AETC ADSS	Various/ Various	TBD TBD	2.000	0.805	Dec 2010	0.667	Dec 2011	0.000		0.667	Continuing	Continuing	Continuing
Subtotal			2.000	0.805		0.667		0.000		0.667			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.000	0.805	0.667	0.000	0.667			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

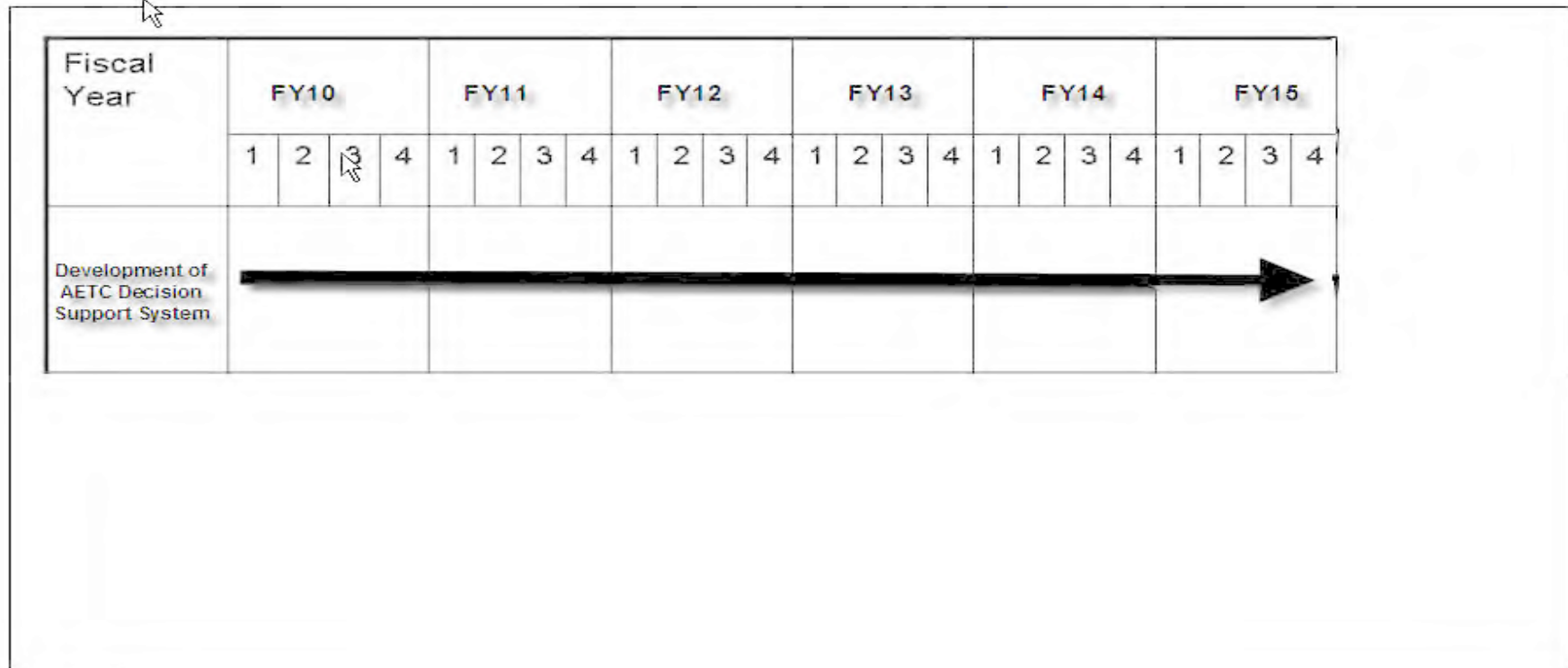
R-1 ITEM NOMENCLATURE

PE 0804743F: *OTHER FLIGHT TRAINING*

PROJECT

675303: *ADSS Development*

ADSS DEVELOPMENT



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0804743F: *OTHER FLIGHT TRAINING*

PROJECT

675303: *ADSS Development*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Development of AETC Decision Support System (ADSS)	1	2009	4	2010

UNCLASSIFIED

R-1 Line Item #236

Page 7 of 7

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804757F: <i>JOINT NATIONAL TRAINING CENTER</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	3.115	3.220	9.000	0.000	9.000	0.000	0.000	0.000	0.000	Continuing	Continuing
675124: <i>Training Transformation</i>	3.115	3.220	9.000	0.000	9.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Supports the SECDEF's Transformation in Training/Joint National Training Capability (JNTC). Develops capabilities that integrate live, virtual, and constructive elements into a seamless joint training environment. Using a scientific and phased approach, researches new technologies and methods that provide a crucial technology-based foundation supporting all JNTC operations.

This program is in Budget Activity 7- Operational Systems Development because it supports rapid transformation of Department of Defense training into a Joint National Training Capability.

Due to an inadvertent error the Air Force requests a technical adjustment changing R-1 Line NO. 237 "Joint National Training Center" to \$0.0M. The following exhibits reflect the requested transfer amounts.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	3.214	3.220	0.000	0.000	0.000
Current President's Budget	3.115	3.220	9.000	0.000	9.000
Total Adjustments	-0.099	0.000	9.000	0.000	9.000
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.099	0.000	9.000	0.000	9.000

UNCLASSIFIED

R-1 Line Item #237

Page 1 of 9

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0804757F: *JOINT NATIONAL TRAINING CENTER*

Change Summary Explanation

FY09:

- Decreased by Air Force for higher priorities

FY11:

- Funds Transferred to OSD OPS-D4574 CE2T2 Program Tech Sup

UNCLASSIFIED

R-1 Line Item #237

Page 2 of 9

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804757F: <i>JOINT NATIONAL TRAINING CENTER</i>	PROJECT 675124: <i>Training Transformation</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675124: <i>Training Transformation</i>	3.115	3.220	9.000	0.000	9.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Supports the SECDEF's Transformation in Training/Joint National Training Capability (JNTC). Develops capabilities that integrate live, virtual, and constructive elements into a seamless joint training environment. Using a scientific and phased approach, researches new technologies and methods that provide a crucial technology-based foundation supporting all JNTC operations. This program is in budget activity 7- Operational Systems Development because it supports rapid transformation of Department of Defense training into a Joint National Training Capability.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue Air Force Modeling and Simulations Tool Kit (AFMSTT) Air Warfare Simulation (AWSIM) Upgrades <i>FY 2009 Accomplishments:</i> In FY2009: Enhancements to rapid database generation <i>FY 2010 Plans:</i> In FY 2010: Integration of Battlefield Air Operations Kit and the Indirect Fire Forward Air Controller Trainer (I-FACT) into AFMSTT <i>FY 2011 Base Plans:</i> In FY 2011: NA <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.	0.944	1.565	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804757F: <i>JOINT NATIONAL TRAINING CENTER</i>	PROJECT 675124: <i>Training Transformation</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Begin/Continue Concept of Operations for Space DMOC into JNTC Live -Virtual-Constructive events <i>FY 2009 Accomplishments:</i> In FY 2009: Integration of space effects models into the joint training environment/development of validated and authoritative space modeling and simulation data <i>FY 2010 Plans:</i> In FY 2010: Integration of space effects models into the joint training environment/development of validated and authoritative space modeling and simulation data <i>FY 2011 Base Plans:</i> In FY 2011: NA <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.	1.000	1.098	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	3.115	3.220	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0804757: <i>Joint National Training Center, APAF</i>	2.442	2.714	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	42.588
	18.711	4.164	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	90.421

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804757F: <i>JOINT NATIONAL TRAINING CENTER</i>	PROJECT 675124: <i>Training Transformation</i>
--	--	--

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0804757 (1): <i>Joint National Training Center, OPAF</i>											

D. Acquisition Strategy

The acquisition strategy is competitive, with cost plus fixed fee and firm fixed price contracts.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804757F: <i>JOINT NATIONAL TRAINING CENTER</i>	PROJECT 675124: <i>Training Transformation</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AFMSTT	C/Various	L3 Mesa , AZ North...	4.113	1.565	Jan 2010	0.000		0.000		0.000	0.000	5.678	0.000
DMOC-S	C/Various	SPARTA Schriever AFB, CO	4.070	1.098	Mar 2010	0.000		0.000		0.000	0.000	5.168	0.000
Ops Support, System Acq, Engineering & Development Studies	C/Various	Various Various	3.642	0.557		0.000		0.000		0.000	0.000	4.199	0.000
DMOC (DTNG)	C/Various	Lockheed Martin Corp Kirtland AFB, NM	1.030	0.000		0.000		0.000		0.000	0.000	1.030	0.000
Subtotal			12.855	3.220		0.000		0.000		0.000	0.000	16.075	0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.855	3.220	0.000	0.000	0.000	0.000	16.075	0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

R-1 Line Item #237

Page 7 of 9

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0804757F: *JOINT NATIONAL TRAINING CENTER*

PROJECT

675124: *Training Transformation*



JNTC Schedule

	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Air Force Modeling and Simulation Training Toolkit (AFMSTT)	[Purple bar]						
Basic Operating Support, System Acquisition Support, Engineering Support	[Purple bar]						
Space Distributed Mission Operations Center	[Purple bar]						

- | | | |
|-----------------------|--------------------------|--------------------|
| Concept activities | Design / development | Integration / test |
| Production / fielding | Operations / sustainment | Key events |

UNCLASSIFIED

R-1 Line Item #237

Page 8 of 9

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804757F: <i>JOINT NATIONAL TRAINING CENTER</i>	PROJECT 675124: <i>Training Transformation</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
AFMSTT (Annual Contract Award)	2	2009	2	2010
Basic Operating Support, System Acquisition, Engineering Support (Annual Contract Award)	1	2009	1	2010
Concept of Operations for Space DMOC-S (Annual Contract Award)	3	2009	3	2010

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804772F: <i>TRAINING DEVELOPMENTS</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	1.769	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
675311: <i>Continuous Learning</i>	0.000	1.769	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification

Program develops specialized training, instructional systems development, and common use training centers. Additionally, develops training course materials, career ladder training, and Career Development Courses (CDC's) as well as tasks and training analysis, trainer development flights, and AF Occupational Measurement Squadron (AFOMS).

Program further provides Continuous Learning (CL) and establishes formal systematic approach for insertion of new technologies into education training systems. CL develops, employs and utilizes advanced technologies such as Visualization, Virtual Environment, Artificial Intelligence and Speech Recognition for increase effective learning. Specifically, supports studies, contractor support, equipment, software, travel required for design, development and implementation of CL.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	1.769	0.000	0.000	0.000
Current President's Budget	0.000	1.769	0.000	0.000	0.000
Total Adjustments	0.000	0.000	0.000	0.000	0.000
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

UNCLASSIFIED

R-1 Line Item #238

Page 1 of 7

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804772F: <i>TRAINING DEVELOPMENTS</i>	PROJECT 675311: <i>Continuous Learning</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675311: <i>Continuous Learning</i>	0.000	1.769	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Program develops specialized training, instructional systems development, and common use training centers. Additionally, develops training course materials, career ladder training, and Career Development Courses (CDC's) as well as tasks and training analysis, trainer development flights, and AF Occupational Measurement Squadron (AFOMS).

Program further provides Continuous Learning (CL) and establishes formal systematic approach for insertion of new technologies into education training systems. CL develops, employs and utilizes advanced technologies such as Visualization, Virtual Environment, Artificial Intelligence and Speech Recognition for increase effective learning. Specifically, supports studies, contractor support, equipment, software, travel required for design, development and implementation of CL.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Development of Spiral 1 Activities <i>FY 2009 Accomplishments:</i> In FY 2009: N/A <i>FY 2010 Plans:</i> In FY 2010: Testing and Evaluation <i>FY 2011 Base Plans:</i> In FY 2011: N/A <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.	0.000	1.769	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804772F: <i>TRAINING DEVELOPMENTS</i>	PROJECT 675311: <i>Continuous Learning</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Accomplishments/Planned Programs Subtotals	0.000	1.769	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (10698): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Not applicable

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804772F: <i>TRAINING DEVELOPMENTS</i>	PROJECT 675311: <i>Continuous Learning</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development of Specialized Skill Training	Various/ Various	TBD TBD	0.000	1.519	Dec 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.000	1.519		0.000		0.000		0.000			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support for Spiral 1 Activities	SS/CPAF	CACI Chantilly, VA	0.000	0.250	Dec 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.000	0.250		0.000		0.000		0.000			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804772F: <i>TRAINING DEVELOPMENTS</i>	PROJECT 675311: <i>Continuous Learning</i>
--	---	--

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Support	TM	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	1.769	0.000	0.000	0.000			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0804772F: <i>TRAINING DEVELOPMENTS</i>	PROJECT 675311: <i>Continuous Learning</i>

Fiscal Year	FY08				FY09				FY10				FY12				FY13				FY14				FY15			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Development of Specialized Skill Training																												

TRAINING DEVELOPMENTS - PE 0804772

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0804772F: *TRAINING DEVELOPMENTS*

PROJECT

675311: *Continuous Learning*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Development of Specialized Skill Training	1	2010	4	2010

UNCLASSIFIED

R-1 Line Item #238

Page 7 of 7

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0808716F: <i>OTHER PERSONNEL ACTIVITIES</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	1.113	0.116	0.116	0.000	0.116	0.118	0.118	0.120	0.122	Continuing	Continuing
675141: <i>Engineering Analysis</i>	1.113	0.116	0.116	0.000	0.116	0.118	0.118	0.120	0.122	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Defense Equal Opportunity Management Institute (DEOMI) provides grants to the civilian academic community to conduct research on military and civilian equal opportunity issues using standard social science methodology. The research methodology includes developing a literature review proposing hypotheses and methods of research. The grantee will then gather appropriate data, draw conclusions and present discussions, recommendations and reports based on their funding.

Previously the US Air Force provided Operations & Maintenance (O&M) funding to DEOMI as their contribution. However, beginning with 2005, it was determined that Research, Development, Test & Evaluation (RDT&E) funding would be more proper.

This program is in Budget Activity 7 as it provides support to operational forces.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	1.113	0.116	0.000	0.000	0.000
Current President's Budget	1.113	0.116	0.116	0.000	0.116
Total Adjustments	0.000	0.000	0.116	0.000	0.116
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.116	0.000	0.116

UNCLASSIFIED

R-1 Line Item #239

Page 1 of 6

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0808716F: <i>OTHER PERSONNEL</i> <i>ACTIVITIES</i>	PROJECT 675141: <i>Engineering Analysis</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675141: <i>Engineering Analysis</i>	1.113	0.116	0.116	0.000	0.116	0.118	0.118	0.120	0.122	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Defense Equal Opportunity Management Institute (DEOMI) provides grants to the civilian academic community to conduct research on military and civilian equal opportunity issues using standard social science methodology and engineering analysis. The research methodology and analysis includes developing a literature review proposing hypotheses and methods of research. The grantee will then gather appropriate data, draw conclusions and present discussions, recommendations and reports based on their funding.

Previously the US Air Force provided Operations & Maintenance (O&M) funding to DEOMI as their contribution. However, beginning with 2005, it was determined that Research, Development, Test & Evaluation (RDT&E) funding would be more proper.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Conduct research on military and civilian equal opportunity issues. <i>FY 2009 Accomplishments:</i> In FY 2009: Continuation of above listed activities <i>FY 2010 Plans:</i> In FY 2010: Continuation of above listed activities <i>FY 2011 Base Plans:</i> In FY 2011: Continuation of above listed activities <i>FY 2011 OCO Plans:</i> In FY 2011 (OCO): N/A	1.113	0.116	0.116	0.000	0.116

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0808716F: <i>OTHER PERSONNEL</i> <i>ACTIVITIES</i>	PROJECT 675141: <i>Engineering Analysis</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Accomplishments/Planned Programs Subtotals	1.113	0.116	0.116	0.000	0.116

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (10956): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Grants will be awarded competitively.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0808716F: <i>OTHER PERSONNEL</i> <i>ACTIVITIES</i>	PROJECT 675141: <i>Engineering Analysis</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DEOMI	TBD/TBD	Various Various	1.113	0.116	Mar 2010	0.116	Mar 2011	0.000		0.116	Continuing	Continuing	Continuing
Subtotal			1.113	0.116		0.116		0.000		0.116			

Remarks
Contract method will be a grant

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.113	0.116	0.116	0.000	0.116			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0808716F: *OTHER PERSONNEL*
 ACTIVITIES

PROJECT

675141: *Engineering Analysis*

ENGINEERING ANALYSIS

Fiscal Year	FY09				FY10				FY11				FY12				FY13				FY14				FY15			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Receive Proposal		△				△					○				○				○				○				○	
Award Grant			△				△				○				○				○				○				○	

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0808716F: *OTHER PERSONNEL*
ACTIVITIES

PROJECT

675141: *Engineering Analysis*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Receive Grants	2	2009	2	2011
Award Grants	3	2009	3	2011

UNCLASSIFIED

R-1 Line Item #239

Page 6 of 6

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			PE 0901202F: <i>JOINT PERSONNEL RECOVERY AGENCY (JPRA)</i>								
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	5.590	11.376	6.107	0.000	6.107	6.081	6.063	6.155	6.246	Continuing	Continuing
675196: <i>EO/IR Warning & Countermeasures Tech</i>	5.590	11.376	6.107	0.000	6.107	6.081	6.063	6.155	6.246	Continuing	Continuing

A. Mission Description and Budget Item Justification

Joint Personnel Recovery Agency (JPRA) to execute tasks related to Commander, USJFCOM responsibilities as DoD Executive Agent (less policy) for Personnel Recovery. Provides separate PE to execute AF task to "fund JPRA" in DODD 2310.2. Includes funding for research and development (R&D), support equipment, contract services, and all associated costs specifically identified to support the JPRA headquarters at Ft. Belvoir, VA and other JPRA operating locations and project sites.

Funding provides USJFCOM capability to conduct Personnel Recovery advanced concept testing and development, identify, research, and exploit technologies to provide COCOM and Service Personnel Recovery capabilities.

Program is in Budget Activity 7 because it provides for development and testing in support of recovery capability.

B. Program Change Summary (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	5.590	11.376	0.000	0.000	0.000
Current President's Budget	5.590	11.376	6.107	0.000	6.107
Total Adjustments	0.000	0.000	6.107	0.000	6.107
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	6.107	0.000	6.107

UNCLASSIFIED

R-1 Line Item #240

Page 1 of 9

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0901202F: <i>JOINT PERSONNEL RECOVERY AGENCY (JPRA)</i>				PROJECT 675196: <i>EO/IR Warning & Countermeasures Tech</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675196: <i>EO/IR Warning & Countermeasures Tech</i>	5.590	11.376	6.107	0.000	6.107	6.081	6.063	6.155	6.246	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

PRMS currently in use at COCOM Rescue Coordination Centers and AF AOCs. JPRA oversaw development of PRMS during ACTD and fielding to COCOMs and Services. ACTD Transition Plan did not identify responsibility for funding further development of PRMS. PRMS is critical piece of Personnel Recovery capability for operations in CENTCOM AOR and for other MCOs worldwide.

JPRA executes DoD Executive Agent for Personnel Recovery, CDRUSJFCOM, responsibilities to assess current and future technologies for application to shortfalls in COCOM and Service Personnel Recovery capabilities

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Isolated Personnel Location, Survivability & Evasion Aid Development <i>FY 2009 Accomplishments:</i> In FY 2009: Continuation of above listed activities <i>FY 2010 Plans:</i> In FY 2010: Continuation of above listed activities <i>FY 2011 Base Plans:</i> In FY 2011: Continuation of above listed activities <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A	1.900	1.000	1.500	0.000	1.500

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901202F: <i>JOINT PERSONNEL RECOVERY AGENCY (JPRA)</i>	PROJECT 675196: <i>EO/IR Warning & Countermeasures Tech</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2010 Plans:</i> In FY 2010: Continuation of above listed activities					
<i>FY 2011 Base Plans:</i> In FY 2011: Continuation of above listed activities					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A					
Accomplishments/Planned Programs Subtotals	5.590	11.376	6.107	0.000	6.107

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (11300): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Contracts will be awarded through full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901202F: <i>JOINT PERSONNEL RECOVERY AGENCY (JPRA)</i>	PROJECT 675196: <i>EO/IR Warning & Countermeasures Tech</i>
--	--	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Personnel & Recovery Tactics, Techniques & Procedures	TBD/TBD	TBD TBD	0.752	3.926	Mar 2010	3.500	Jun 2011	0.000		3.500	Continuing	Continuing	0.100
Subtotal			0.752	3.926		3.500		0.000		3.500			0.100

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.590	11.376	6.107	0.000	6.107			0.880

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0901202F: *JOINT PERSONNEL RECOVERY AGENCY (JPRA)*

PROJECT

675196: *EO/IR Warning & Countermeasures Tech*

JPRA

Fiscal Year	FY08				FY09				FY10				FY11				FY12				FY13				FY14				FY15			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
PRMS/Tech Assessment		▲				▲				▲				▲				▲				▲				▲				▲		
PRESS			▲				▲				▲				▲				▲				▲				▲				▲	

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0901202F: *JOINT PERSONNEL
RECOVERY AGENCY (JPRA)*

PROJECT

675196: *EO/IR Warning & Countermeasures
Tech*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Software Improvement	1	2009	4	2010
Integration/Interoperability/Survivability Studies	2	2009	4	2010
Urban Operations	2	2009	4	2010
Aid Development	1	2009	4	2010

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901212F: <i>SERVICE-WIDE SUPPORT</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	3.648	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
675256: <i>Military Flight Operations Quality A</i>	3.648	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification

The Air Force has initiated development of MFOQA processes for various aircraft across the mission spectrum.

MFOQA is the analysis and trending of aircraft system and flight performance data to proactively enhance combat readiness through improvements in operations, maintenance, training and safety functions. Analysis of recorded data identifies and quantifies both normal and hazardous flight environments, identifies mishap precursors and potential mitigation measures, and where applicable, enables the monitoring of control measure effectiveness. Benefits are derived through a variety of analysis processes, including the operational trending of aggregate data and post-mission playback features for both aircrew flight operations training and maintenance diagnostics.

MFOQA provides tools for commanders to: establish a baseline for normal operations; identify, mitigate, and monitor operational risks while detecting precursors to aviation mishaps; and identify operational inefficiencies. MFOQA gives capabilities to multiple levels and functional areas to improve and enhance mission-effectiveness through awareness of abnormal trends, continuous knowledge of aircraft systems performance, and insight into the effectiveness of procedures, policy, and aircrew training on actual mission accomplishment.

MFOQA programs realize the following goals:

Mishap Reduction - Reduces the statistical rate of aviation mishaps by identifying risks, implementing effective control measures, and enabling continuous monitoring of risk mitigation.

Operational Efficiency - improves aircrew training effectiveness, reduces aircraft downtime, and modifies operations to reduce consumption and increase system component life cycles.

Operational Readiness - Enhances war-fighting capabilities by preserving resources available for operational requirements and improving mission performance.

UNCLASSIFIED

R-1 Line Item #241

Page 1 of 8

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901212F: <i>SERVICE-WIDE SUPPORT</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	3.008	0.000	0.000	0.000	0.000
Current President's Budget	3.648	0.000	0.000	0.000	0.000
Total Adjustments	0.640	0.000	0.000	0.000	0.000
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.640	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901212F: <i>SERVICE-WIDE SUPPORT</i>	PROJECT 675256: <i>Military Flight Operations Quality A</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675256: <i>Military Flight Operations Quality A</i>	3.648	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Air Force has initiated development of MFOQA processes for various aircraft across the mission spectrum.

MFOQA is the analysis and trending of aircraft system and flight performance data to proactively enhance combat readiness through improvements in operations, maintenance, training and safety functions. Analysis of recorded data identifies and quantifies both normal and hazardous flight environments, identifies mishap precursors and potential mitigation measures, and where applicable, enables the monitoring of control measure effectiveness. Benefits are derived through a variety of analysis processes, including the operational trending of aggregate data and post-mission playback features for both aircrew flight operations training and maintenance diagnostics.

MFOQA provides tools for commanders to: establish a baseline for normal operations; identify, mitigate, and monitor operational risks while detecting precursors to aviation mishaps; and identify operational inefficiencies. MFOQA gives capabilities to multiple levels and functional areas to improve and enhance mission-effectiveness through awareness of abnormal trends, continuous knowledge of aircraft systems performance, and insight into the effectiveness of procedures, policy, and aircrew training on actual mission accomplishment.

MFOQA programs realize the following goals:

Mishap Reduction - Reduces the statistical rate of aviation mishaps by identifying risks, implementing effective control measures, and enabling continuous monitoring of risk mitigation.

Operational Efficiency - improves aircrew training effectiveness, reduces aircraft downtime, and modifies operations to reduce consumption and increase system component life cycles.

Operational Readiness - Enhances war-fighting capabilities by preserving resources available for operational requirements and improving mission performance.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

R-1 Line Item #241

Page 3 of 8

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901212F: <i>SERVICE-WIDE SUPPORT</i>	PROJECT 675256: <i>Military Flight Operations Quality A</i>
--	--	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>MAJOR THRUST: Develop flight data collection modifications on aviation platforms.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: Develop flight data collection modifications on aviation platforms including but not limited to airlift such as the C-17, C-5 and C-130m trainers such as the T-5 and T-38, bombers such as the B-1 and B-2, fighters such as the F-15, F-16, F-22 and F-35, refuelers such as the KC-10 and KC-135, the CV-22, and Unmanned Aerial Systems such as the Predator and Global Hawk, providing insight into world-wide transportation operations. These upgrades provide information generated inflight for routine analysis to identify deviations from expected procedures and parameters.</p> <p><i>FY 2010 Plans:</i> In FY 2010: N/A</p> <p><i>FY 2011 Base Plans:</i> In FY 2011: N/A</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>	3.648	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	3.648	0.000	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0901212F: <i>3010 BP 10</i>	10.692	4.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0401130F: <i>3010 BP 11</i>	0.470	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0804740F: <i>3010 BP 11</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901212F: <i>SERVICE-WIDE SUPPORT</i>	PROJECT 675256: <i>Military Flight Operations Quality A</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0901212F (1): 3400	3.996	5.031	5.598	0.000	5.598	5.390	5.440	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The Lead Operating MAJCOMs (as defined by AAFP 10-9, Lead Operating Command Weapons System Management), in conjunction with the Air Force Safety Center and the Aeronautical System Center will determine the feasibility of each aircraft platform for MFOQA process implementation. Analysis software development and process implementation will occur on a staggered schedule, approximately 2 aircraft fleets per year.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0901212F: <i>SERVICE-WIDE SUPPORT</i>				PROJECT 675256: <i>Military Flight Operations Quality A</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Boeing (C-17)	TBD/TBD	TBD Wright Patterson	3.648	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Hawker Beachcraft (T-6)	TBD/TBD	TBD Wright Patterson	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			3.648	0.000		0.000		0.000		0.000			

Remarks

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.648	0.000		0.000		0.000		0.000			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0901212F: *SERVICE-WIDE SUPPORT*

PROJECT

675256: *Military Flight Operations Quality A*

Military Flight Operations Quality Assurance (MFOQA)

	2006	2007	2008	2009	2010	2011	2012	2013
Aircraft Data Collection Upgrades			██████████					
Software Development			██████████					
Results Distribution & Corrective Action			██████████					

UNCLASSIFIED

R-1 Line Item #241

Page 7 of 8

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0901212F: *SERVICE-WIDE SUPPORT*

PROJECT

675256: *Military Flight Operations Quality A*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Aircraft Data Collection Upgrades	1	2009	4	2009
Aircraft Fleet MFOQA Analysis Software Development	1	2009	4	2009
T-6 IDARS Upgrade	1	2009	3	2009
C-17 Data Recorder Upgrade	1	2009	1	2009

UNCLASSIFIED

R-1 Line Item #241

Page 8 of 8

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901218F: <i>Civilian Compensation Program</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	14.647	8.174	7.811	0.000	7.811	7.757	7.638	7.921	8.052	Continuing	Continuing
674139: <i>Civilian Compensation Program</i>	14.647	8.174	7.811	0.000	7.811	7.757	7.638	7.921	8.052	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element provides for payment of civilian compensation benefits for disability due to personal injury sustained while in the performance of duty or due to employment-related disease according to the Federal Employees Compensation Act (FECA) under Title 5 U.S.C., Chapter 81. The Department of Labor (DOL) administers this program and charges the Department of the Air Force for its employee costs; therefore, this is a MUST PAY bill for Air Force. The PE excludes manpower authorizations and costs.

This Program Element (PE) is in Budget Activity 7 in support of payment of civilian compensation benefits for disability due to personal injury sustained while in the performance of duty or due to employment-related disease according to the Federal Employees Compensation Act (FECA) under Title 5 U.S.C., Chapter 81.

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	14.647	8.174	0.000	0.000	0.000
Current President's Budget	14.647	8.174	7.811	0.000	7.811
Total Adjustments	0.000	0.000	7.811	0.000	7.811
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	7.811	0.000	7.811

Change Summary Explanation

N/A

UNCLASSIFIED

R-1 Line Item #242

Page 1 of 6

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901218F: <i>Civilian Compensation Program</i>	PROJECT 674139: <i>Civilian Compensation Program</i>
--	---	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674139: <i>Civilian Compensation Program</i>	14.647	8.174	7.811	0.000	7.811	7.757	7.638	7.921	8.052	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This program element provides for payment of civilian compensation benefits for disability due to personal injury sustained while in the performance of duty or due to employment-related disease according to the Federal Employees Compensation Act (FECA) under Title 5 U.S.C., Chapter 81. The Department of Labor (DOL) administers this program and charges the Department of the Air Force for its employee costs; therefore, this is a MUST PAY bill for Air Force. The PE excludes manpower authorizations and costs.

This Program Element (PE) is in Budget Activity 7 in support of payment of civilian compensation benefits for disability due to personal injury sustained while in the performance of duty or due to employment-related disease according to the Federal Employees Compensation Act (FECA) under Title 5 U.S.C., Chapter 81.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue a program to compensate employees assigned to RDT&E facilities for worked-related injury or disease. <i>FY 2009 Accomplishments:</i> In FY 2009: Continuation of above listed activities. <i>FY 2010 Plans:</i> In FY 2010: Continuation of above listed activities. <i>FY 2011 Base Plans:</i> In FY 2011: Continuation of above listed activities.	14.647	8.174	7.811	0.000	7.811

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901218F: <i>Civilian Compensation Program</i>	PROJECT 674139: <i>Civilian Compensation Program</i>
--	---	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not applicable.					
Accomplishments/Planned Programs Subtotals	14.647	8.174	7.811	0.000	7.811

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (11861): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy
Not Applicable.

E. Performance Metrics
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0901218F: <i>Civilian Compensation Program</i>				PROJECT 674139: <i>Civilian Compensation Program</i>					

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Continue development of compensation plan	TBD/TBD	TBD TBD	14.647	8.174	Aug 2010	7.811	Aug 2011	0.000		7.811	Continuing	Continuing	Continuing
Subtotal			14.647	8.174		7.811		0.000		7.811			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.647	8.174	7.811	0.000	7.811			

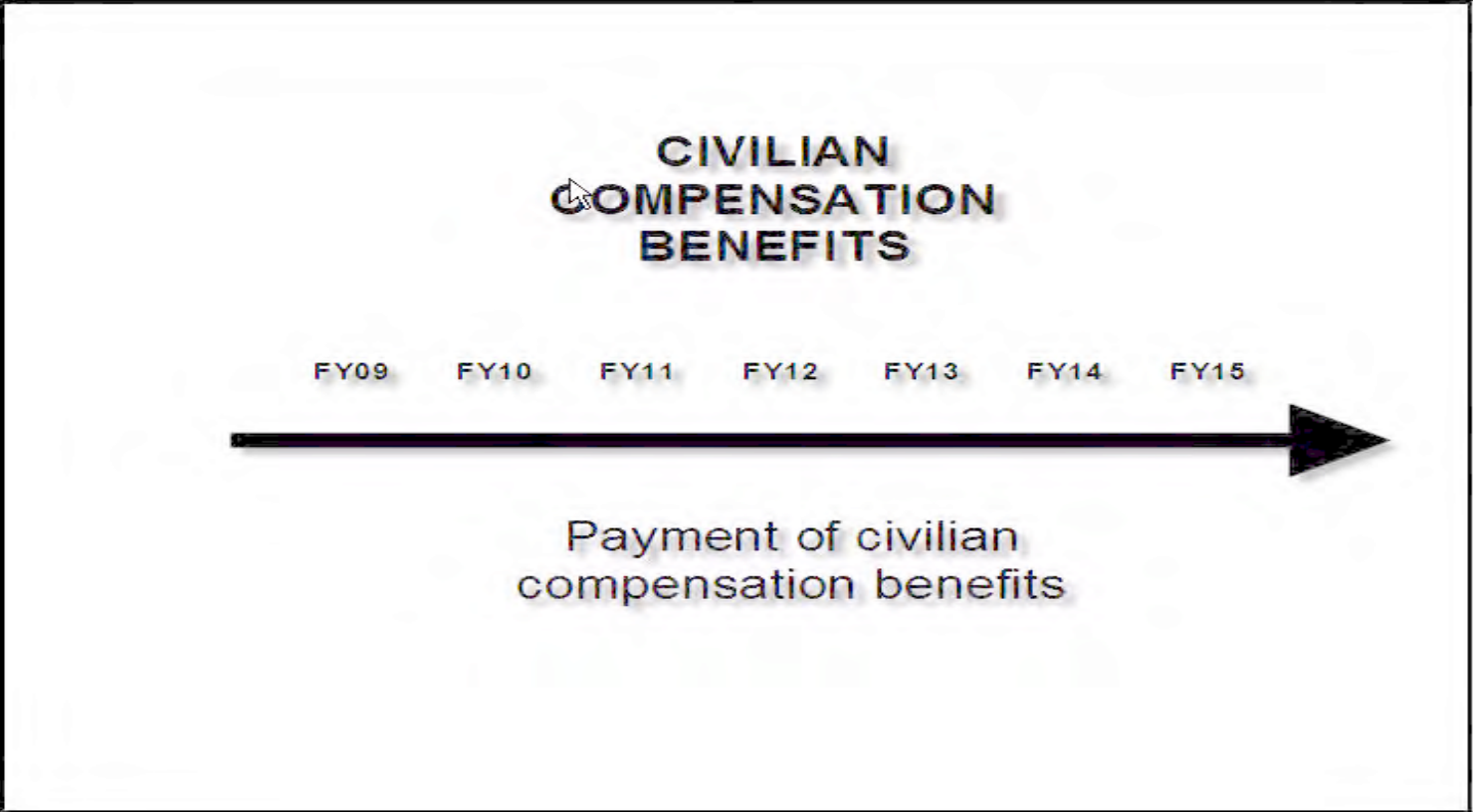
Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901218F: <i>Civilian Compensation Program</i>	PROJECT 674139: <i>Civilian Compensation Program</i>



UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0901218F: *Civilian Compensation Program*

PROJECT

674139: *Civilian Compensation Program*

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Continue development of compensation program	1	2009	4	2011

UNCLASSIFIED

R-1 Line Item #242

Page 6 of 6

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901220F: <i>PERSONNEL ADMINISTRATION</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	18.947	30.969	11.179	0.000	11.179	7.624	6.954	6.624	6.738	Continuing	Continuing
675194: <i>Personnel Services Delivery</i>	10.295	10.479	11.179	0.000	11.179	7.624	6.954	6.624	6.738	Continuing	Continuing
675272: <i>Defense Integrated Military Human Resources System (DIMHRS)</i>	8.652	20.490	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.950

Note
In FY 2009, 675194 Force Development Transformation was changed to Personnel Services Delivery to broaden the scope beyond force development to other personnel services which may be automated.

A. Mission Description and Budget Item Justification
Personnel Services Delivery (PSD), under the Personnel Administration program, funds operational developments necessary to acquire, field, and modify segments of an integrated Air Force Human Resource (HR) customer service delivery system that will effectively incorporate personnel, manpower, and pay services for the Total Force - Active Duty, Reserve, Guard, and Civilians. It supports the transition from the current AF personnel HR system enterprise, which includes the Military Personnel Data System (MilPDS) and other AF unique applications, into a Global Combat Support System-Air Force (GCSS-AF) compliant enterprise that supports the deployment of the Defense Integrated Military Human Resources System (DIMHRS). PSD is supported through the AF enterprise architecture using Enterprise Resource Planning (ERP) and other Commercial Off The Shelf (COTS) products. PSD provides the Air Force unique HR capabilities not delivered in DIMHRS, and ensures MilPDS and other legacy systems are compatible with DIMHRS. PSD supports the migration of legacy applications (those not subsumed by DIMHRS) and other information technology support to a Service Oriented Architecture (SOA)-based data services environment. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development, because it upgrades and develops capabilities for current operational systems.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901220F: <i>PERSONNEL ADMINISTRATION</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	18.575	10.492	0.000	0.000	0.000
Current President's Budget	18.947	30.969	11.179	0.000	11.179
Total Adjustments	0.372	20.477	11.179	0.000	11.179
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.372	20.477	11.179	0.000	11.179

Change Summary Explanation

FY11: The 2010 President's Budget submittal did not reflect FY 2011 through FY2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

UNCLASSIFIED

R-1 Line Item #243

Page 2 of 18

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901220F: <i>PERSONNEL ADMINISTRATION</i>	PROJECT 675194: <i>Personnel Services Delivery</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675194: <i>Personnel Services Delivery</i>	10.295	10.479	11.179	0.000	11.179	7.624	6.954	6.624	6.738	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Personnel Services Delivery (PSD), under the Personnel Administration program, funds operational developments necessary to acquire, field, and modify segments of an integrated Air Force Human Resource (HR) customer service delivery system that will effectively incorporate personnel, manpower, and pay services for the Total Force - Active Duty, Reserve, Guard, and Civilians. It supports the transition from the current AF personnel HR system enterprise, which includes the Military Personnel Data System (MilPDS) and other AF unique applications, into a Global Combat Support System-Air Force (GCSS-AF) compliant enterprise that supports the deployment of the Defense Integrated Military Human Resources System (DIMHRS). PSD is supported through the AF enterprise architecture using Enterprise Resource Planning (ERP) and other Commercial Off The Shelf (COTS) products. PSD will provide the Air Force unique HR capabilities not delivered in DIMHRS, and will ensure MilPDS and other legacy systems are compatible with DIMHRS. PSD will support the migration of legacy applications (those not subsumed by DIMHRS) and other information technology support to a SOA-based data services environment. Activities also include studies and analysis to support both current program planning and execution and future program planning.

Block 1 of the Force Development Toolkit which includes the airmen development plan module was deployed in Sep 2007, is operational, and sustainment actions are minimal as the operational environment is stable. In Dec 2008, the customer accepted Block 2 of the Force Development Toolkit which includes development plans for civilians, the personnel records display application, and role-based access. Block 2 was deployed at the end of Mar 2009.

This program is in Budget Activity 7, Operational System Development, because it upgrades and develops capabilities for current operational systems.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Develop AF Human Resource Applications to automate and create self-service capabilities to deliver personnel services.	6.585	6.751	2.777	0.000	2.777

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901220F: <i>PERSONNEL</i> <i>ADMINISTRATION</i>	PROJECT 675194: <i>Personnel Services Delivery</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Accomplishments/Planned Programs Subtotals	10.295	10.479	11.179	0.000	11.179

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (12110): <i>Other Procurement, AF WSC 834010 General Information Technologies</i>	1.012	0.698	0.684	0.000	0.684	0.695	0.708	0.719	0.731	0.000	0.000
• PE Not Provided (12122): <i>Operations and Maintenance, AF</i>	16.377	36.157	19.516	0.000	19.516	15.254	9.825	11.728	15.514	0.000	0.000

D. Acquisition Strategy
Personnel Services Delivery employs an evolutionary acquisition strategy to deliver incremental capabilities with development contracts that are awarded in a competitive environment.

E. Performance Metrics
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901220F: <i>PERSONNEL</i> <i>ADMINISTRATION</i>	PROJECT 675194: <i>Personnel Services Delivery</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Human Resources Applications and Data Services	TBD/TBD	TBD TBD	2.637	6.751	Mar 2010	1.777	Mar 2011	0.000		1.777	0.000	11.165	Continuing
Human Resource Applications (My XDP)	C/FFP	Centech Group Falls Church, VA	3.448	0.000		0.000		0.000		0.000	0.000	3.448	Continuing
SOA Governance	TBD/TBD	Lockheed Martin Gaithersburg, MD	0.500	0.000		0.000		0.000		0.000	0.000	0.500	Continuing
DIMHRS Interface	TBD/TBD	TBD TBD	0.000	0.000		5.500	Mar 2011	0.000		5.500	0.000	5.500	0.000
Subtotal			6.585	6.751		7.277		0.000		7.277	0.000	20.613	

Remarks
SOA Governance Contract Method & Type is an IDIQ contract; IDIQ was not included in Contract Method & Type menu, therefore, TBD was selected.

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Hardware/Software Test & Evaluation	TM	Lockheed Martin Gaithersburg, MD	0.894	1.034	Feb 2010	1.100	Jan 2011	0.000		1.100	Continuing	Continuing	Continuing
Subtotal			0.894	1.034		1.100		0.000		1.100			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901220F: <i>PERSONNEL</i> <i>ADMINISTRATION</i>	PROJECT 675194: <i>Personnel Services Delivery</i>
--	--	--

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Office Support	Various/ Various	PE Systems Fairfax VA; Jacobs: Lincoln MA	2.816	2.694	Dec 2009	2.802	Dec 2010	0.000		2.802	Continuing	Continuing	Continuing
Subtotal			2.816	2.694		2.802		0.000		2.802			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	10.295	10.479	11.179	0.000	11.179			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

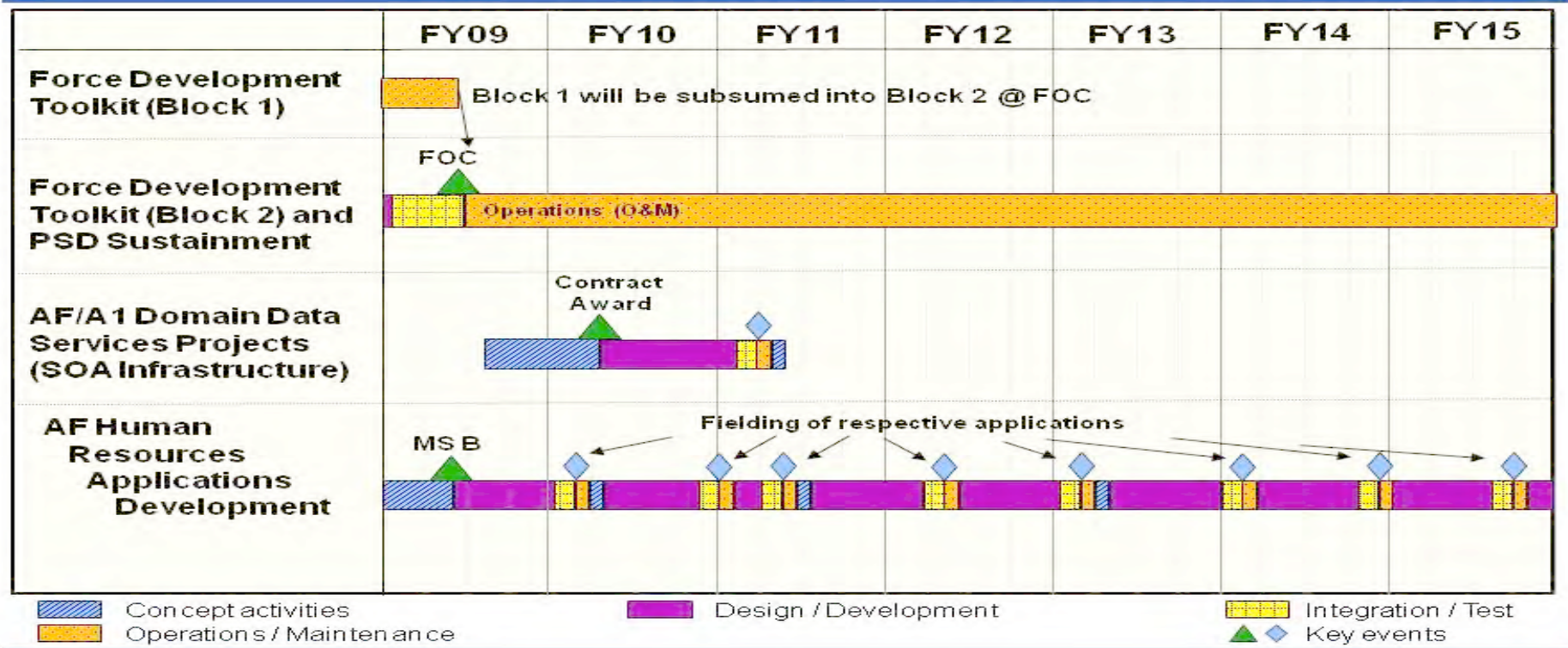
DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0901220F: PERSONNEL
 ADMINISTRATION

PROJECT
 675194: Personnel Services Delivery

Personnel Services Delivery Schedule



PB10 R-Docs

As of 15 Apr 09

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901220F: <i>PERSONNEL</i> <i>ADMINISTRATION</i>	PROJECT 675194: <i>Personnel Services Delivery</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
FDTK (Block 1 & 2) FOC	2	2009	2	2009
Domain Data Services Projects Contract Award	2	2010	2	2010
Domain Data Services Project Release	3	2010	2	2011
AF Human Resources Application Development MS B	2	2009	2	2009
AF Human Resources Applications Development Cycle	2	2010	4	2011
AF Human Resources Applications Releases	1	2010	2	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901220F: <i>PERSONNEL</i> <i>ADMINISTRATION</i>	PROJECT 675272: <i>Defense Integrated Military Human Resources System (DIMHRS)</i>
--	--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675272: <i>Defense Integrated Military Human Resources System (DIMHRS)</i>	8.652	20.490	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.950
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

DIMHRS is a Department of Defense (DoD) Enterprise Resource Planning (ERP) product, and requires specific Air Force (AF) management and budget control to prepare for implementation. To enable AF efforts, DoD allocates funds to the AF for DIMHRS RDT&E integration efforts as needed. Activities include communication, change management, testing, training, systems transition, deployment, data migration and schedule control. The AF must ensure full range of Human Resource (HR) & Pay requirements are presented to the DoD DIMHRS developer, are properly incorporated into DIMHRS, fully tested and then deployed. AF unique HR functionality, not provided by DIMHRS, is provided by PSD (BPAC 675194). PSD also supports the migration of legacy applications and is the basis for other information technology capabilities associated with AF Force Development. Activities also include studies and analysis to support both current program planning and execution and future program planning.

In Jan 2009, the DepSecDef directed a program restructure for DIMHRS. The AF will develop a Service-specific personnel and pay system, building on the DIMHRS core software to the maximum extent practical, and incorporating enterprise standards. An Acquisition Decision Memorandum is expected Aug 09 to provide further direction on Service specific development.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Integrate legacy systems with DIMHRS <i>FY 2009 Accomplishments:</i> In FY 2009: Integrate legacy systems with DIMHRS	7.662	20.490	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901220F: <i>PERSONNEL</i> <i>ADMINISTRATION</i>	PROJECT 675272: <i>Defense Integrated Military Human Resources System (DIMHRS)</i>
--	--	--

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<i>FY 2011 Base Plans:</i> In FY 2011: N/A					
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	8.652	20.490	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (12425): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

Defense Integrated Military Human Resource System employs an evolutionary acquisition strategy with spiral development contracts that are negotiated and awarded in a competitive environment.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901220F: <i>PERSONNEL</i> <i>ADMINISTRATION</i>	PROJECT 675272: <i>Defense Integrated Military Human Resources System (DIMHRS)</i>
--	--	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DIMHRS Interface Design/Integration	C/FFP	Booze Allen Hamilton Inc McLean, VA	7.442	20.490		0.000		0.000		0.000	0.000	27.932	Continuing
Subtotal			7.442	20.490		0.000		0.000		0.000	0.000	27.932	

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DIMHRS PMO Support	C/FFP	Booze Allen Hamilton Inc McLean, VA	0.920	0.000		0.000		0.000		0.000	0.000	0.920	Continuing
Functional Transition Study	C/FFP	Oracle ...	0.100	0.000		0.000		0.000		0.000	0.000	0.100	Continuing
DIMHRS Forms Analysis	C/FFP	SAIC ...	0.050	0.000		0.000		0.000		0.000	0.000	0.050	Continuing
Subtotal			1.070	0.000		0.000		0.000		0.000	0.000	1.070	

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901220F: <i>PERSONNEL</i> <i>ADMINISTRATION</i>	PROJECT 675272: <i>Defense Integrated Military Human Resources System (DIMHRS)</i>
--	--	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Integration Testing	C/FFP	Booze Allen Hamilton Inc McLean, VA	0.000	0.000		0.000		0.000		0.000	0.000	0.000	Continuing
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000	

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Finance Support to Enterprise Program Management Office	C/FFP	TBD Clearinghouse	0.140	0.000		0.000		0.000		0.000	0.000	0.140	Continuing
Program Management of AF DIMHRS Integration	C/FFP	Booze Allen Hamilton Inc McLean, VA	0.000	0.000		0.000		0.000		0.000	0.000	0.000	Continuing
Subtotal			0.140	0.000		0.000		0.000		0.000	0.000	0.140	

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901220F: <i>PERSONNEL</i> <i>ADMINISTRATION</i>	PROJECT 675272: <i>Defense Integrated Military Human Resources System (DIMHRS)</i>
--	--	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.652	20.490	0.000	0.000	0.000	0.000	29.142	

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

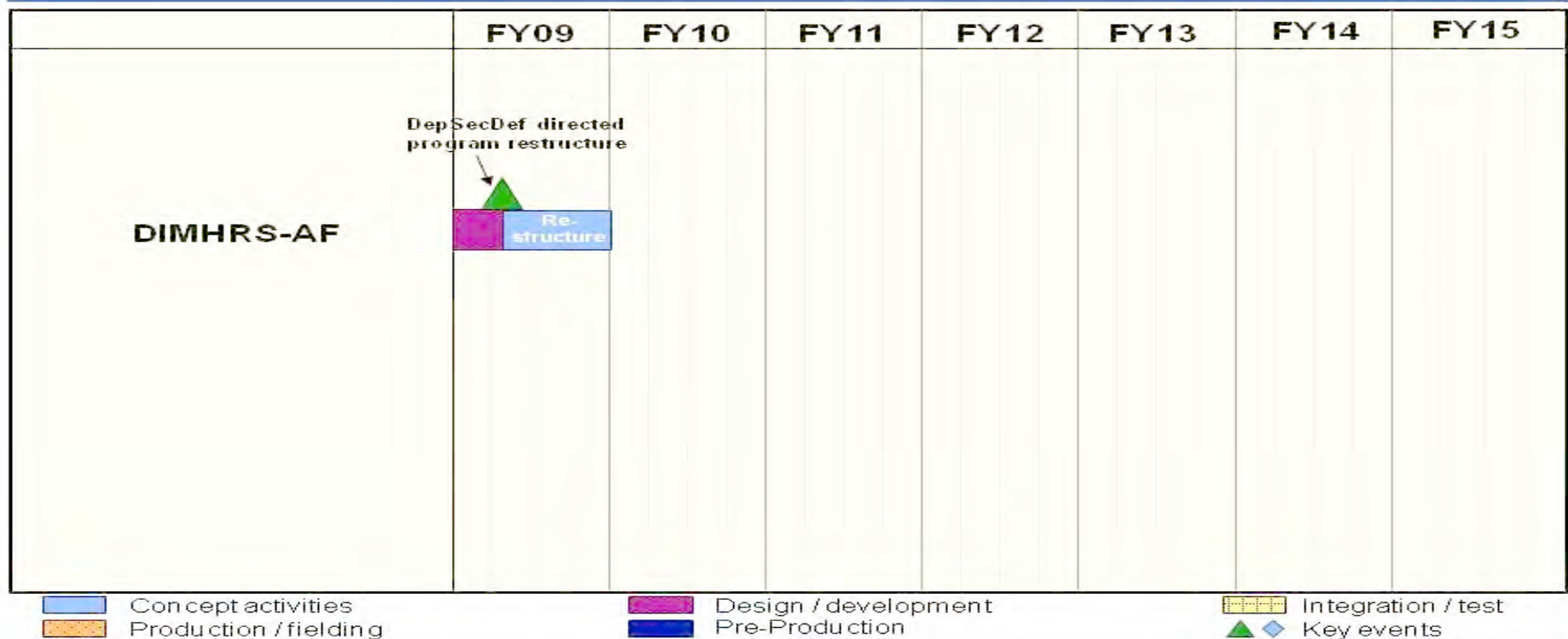
R-1 ITEM NOMENCLATURE

PE 0901220F: *PERSONNEL*
ADMINISTRATION

PROJECT

675272: *Defense Integrated Military Human Resources System (DIMHRS)*

DIMHRS Schedule



PB10 R-Docs

As of 5 Aug 09

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901220F: <i>PERSONNEL ADMINISTRATION</i>	PROJECT 675272: <i>Defense Integrated Military Human Resources System (DIMHRS)</i>
--	--	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Design and Development	1	2009	1	2009
DepSecDef directed restructure	2	2009	2	2009
Concept activities for restructure	2	2009	4	2009

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>
--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	22.999	55.891	49.816	0.000	49.816	0.000	0.000	0.000	0.000	Continuing	Continuing
675036: <i>Financial Information Resource System (FIRST)</i>	11.050	12.110	4.727	0.000	4.727	0.000	0.000	0.000	0.000	0.000	0.000
675179: <i>Defense Enterprise Accounting Management System - AF (DEAMS)</i>	11.949	43.781	45.089	0.000	45.089	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Financial Information Resource System (FIRST) is a software development effort to build a single system for programming and budget formulation that will allow the sunset of the Program Data System (PDS), Automated Budget Interactive Data Environment System (ABIDES) and Resource Allocation Programming Information Decision System (RAPIDS) legacy systems. The Budget Formulation (BF) capability supports force programming, formulation of budget requirements and deliberation of budget options, budget justification processes, and documentation. FIRST BF encompasses the budget exercise process, which affects all organizational levels, and is based on core financial and selected program information used to build the AF budget. In this budget, FIRST will provide the capability necessary to eventually replace the Program Data System (PDS) and conduct studies and analysis to support current and future program planning activities. SAF/FMP will identify the capabilities in a strategic plan to complete budget formulation. FIRST will comply with: the Clinger-Cohen Act; the Business Enterprise Architecture (BEA); Chief Financial Officer (CFO) Act; DoD Information Technology Standards Registry (DISR) guidelines, and; Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) guidelines.

Defense Enterprise Accounting and Management System (DEAMS) is replacing a commercial-off-the-shelf (COTS) based software configuration effort that will provide an auditable modern accounting and finance system. DEAMS will replace existing accounting and finance legacy systems to provide core funds execution management functions consistent with financial management laws, regulations and policy, general ledger, funds management, payments, receivables, cost and revenues, and fiduciary reporting. To date, DEAMS has fielded Increment 1, Spiral 1 with over 700 users at Scott AFB and ANG units providing commitment accounting capability, which have been successfully used for 2 successive year-end closeouts. DEAMS has also successfully released a Beta version of Increment 1, Spiral 2 to approx. 300 users that provide a full general accounting capability. Joint AF and USTRANSCOM technology demonstration includes investment funding, commitment accounting, cost accounting, Foreign Military Sales (FMS) accounting and contingency operations management. DEAMS is compliant with the Clinger-Cohen Act, Business Enterprise Architecture (BEA), and integrate into Global Combat Support System-Air Force (GCSS-AF). Activities also include studies and analysis to support current program planning, execution, and future program planning.

UNCLASSIFIED

R-1 Line Item #244

Page 1 of 20

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
--	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>
--	---

This program is in Budget Activity 7, Operational System Development, because the program modernizes Automated Information Systems (AIS).

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	16.737	55.991	0.000	0.000	0.000
Current President's Budget	22.999	55.891	49.816	0.000	49.816
Total Adjustments	6.262	-0.100	49.816	0.000	49.816
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	6.262	-0.100	49.816	0.000	49.816

Change Summary Explanation

Funding increase from FY 2009 to FY 2010 required to fund software development activities. Funding decrease from FY 2010 to FY 2011 reflects a reduced amount of development as focus begins to shift towards test and evaluation.

FY 2011 increase from Previous President's Budget to Current PBR/President's Budget required to fund pre-production and production activities.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>				PROJECT 675036: <i>Financial Information Resource System (FIRST)</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675036: <i>Financial Information Resource System (FIRST)</i>	11.050	12.110	4.727	0.000	4.727	0.000	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Financial Information Resource System (FIRST) is a software development effort to build a single system for programming and budget formulation that will allow the sunset of the Program Data System (PDS), Automated Budget Interactive Data Environment System (ABIDES) and Resource Allocation Programming Information Decision System (RAPIDS) legacy systems. The Budget Formulation (BF) capability supports force programming, formulation of budget requirements and deliberation of budget options, budget justification processes, and documentation. FIRST BF encompasses the budget exercise process, which affects all organizational levels, and is based on core financial and selected program information used to build the AF budget. In this budget, FIRST will provide the capability necessary to eventually replace the Program Data System (PDS). Activities also include studies and analysis to support both current program planning and execution and future program planning. SAF/FMP will identify the capabilities in a strategic plan to complete budget formulation.

FIRST will comply with: the Clinger-Cohen Act; the Business Enterprise Architecture (BEA); Chief Financial Officer (CFO) Act; DoD Information Technology Standards Registry (DISR) guidelines, and; Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) guidelines.

The BF increment includes three spirals. Spiral One was deployed on the GCSS-AF Integration Framework and provided data query and reporting capability (to include trend and statistical analysis). Spiral Two and Three were combined and a Pilot was deployed to the GCSS-AF in June 2007 which enabled the user to conduct an operational assessment of key budget options and deliberation functions as well as selected force programming capabilities. Spiral Two/Three, deployed in February 2008, provided partial budget programming, budget requirement formulation, budget option deliberation, force programming, flying hour cost modeling, civilian personnel cost modeling and exhibits, interfaces to related systems, and electronic submission of budget to OSD. Remaining Spiral Two/Three efforts (renamed to Increment I PDS to provide clearer insight into the current development activity) will implement customer-identified enhancements to enable replacement of legacy PDS. Follow on plans will be based on the SAF/FMP budget formulation strategic plan. In accordance with DoDI 8500.2, Information Assurance activities are broken out for FY09-FY10.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

R-1 Line Item #244

Page 3 of 20

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force						DATE: February 2010					
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>			PROJECT 675036: <i>Financial Information Resource System (FIRST)</i>					
B. Accomplishments/Planned Program (\$ in Millions)						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
<p><i>FY 2011 Base Plans:</i> In FY 2011, complete C&A for FIRST v2.2; perform IA-related sustainment activities; maintain FISMA compliance</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>											
Accomplishments/Planned Programs Subtotals						11.050	12.110	4.727	0.000	4.727	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0901538F: <i>Financial Management Information Systems (FMIS) (OPAF)</i>	0.606	0.834	0.845	0.000	0.845	0.859	0.874	0.887	0.901	0.000	0.000
• PE 0308610F: <i>Information Management - Automation - Program 3 (O&M)</i>	2.625	10.533	4.387	0.000	4.387	5.015	5.156	5.835	6.578	0.000	0.000
D. Acquisition Strategy											
<p>The FIRST program will execute a spiral delivery of budget formulation and force programming capabilities to replace legacy system. FIRST capability is being developed using the existing Cost Plus Award Fee (CPAF) contract. Follow on work, as defined in the SAF/FMP strategic plan, will be awarded through full and open competition.</p>											
E. Performance Metrics											
<p>Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.</p>											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>	PROJECT 675036: <i>Financial Information Resource System (FIRST)</i>
--	---	--

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Application Development & Test for Increment I (PDS) including GCSS-AF integration and current/future program planning activities	C/CPAF	Accenture Fairborn, Ohio	8.363	9.108	Jan 2010	2.257	Jan 2011	0.000		2.257	0.000	19.728	0.000
Subtotal			8.363	9.108		2.257		0.000		2.257	0.000	19.728	0.000

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Joint Interoperability Test Center (JITC)	MIPR	JITC Fort Huachuca, Arizona	0.061	0.000	Nov 2009	0.000	Nov 2010	0.000		0.000	Continuing	Continuing	Continuing
Responsible Test Organization (RTO)	Various/ Various	643 ELSS/EIRT Gunter AFB, AI	0.141	0.161	Jan 2010	0.175	Jan 2011	0.000		0.175	Continuing	Continuing	Continuing
Capabilities Integration Environment (CIE)	Various/ Various	643 ELSS/EIRT Gunter AFB, AI	0.050	0.200	Apr 2010	0.110	Apr 2011	0.000		0.110	Continuing	Continuing	Continuing
Defense Information Systems Agency (DISA)	MIPR	DISA Montgomery, AI	1.000	1.000	Nov 2009	0.500	Nov 2010	0.000		0.500	Continuing	Continuing	Continuing

UNCLASSIFIED

R-1 Line Item #244

Page 7 of 20

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>	PROJECT 675036: <i>Financial Information Resource System (FIRST)</i>
--	---	--

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Tech Support	Various/ Various	Quantech/ ETASS/MITRE Dayton, OH	0.791	0.983	Jan 2010	1.065	Jan 2011	0.000		1.065	Continuing	Continuing	0.000
Subtotal			2.043	2.344		1.850		0.000		1.850			

Remarks

Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA Support	Various/ Various	Quantech/PASS Dayton, OH	0.434	0.441	Jan 2010	0.401	Jan 2011	0.000		0.401	Continuing	Continuing	Continuing
Program Office Spt	Various/ Various	Various Various	0.210	0.217	Oct 2009	0.219	Oct 2010	0.000		0.219	Continuing	Continuing	0.000
Subtotal			0.644	0.658		0.620		0.000		0.620			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>	PROJECT 675036: <i>Financial Information Resource System (FIRST)</i>
--	---	--

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	11.050	12.110	4.727	0.000	4.727			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

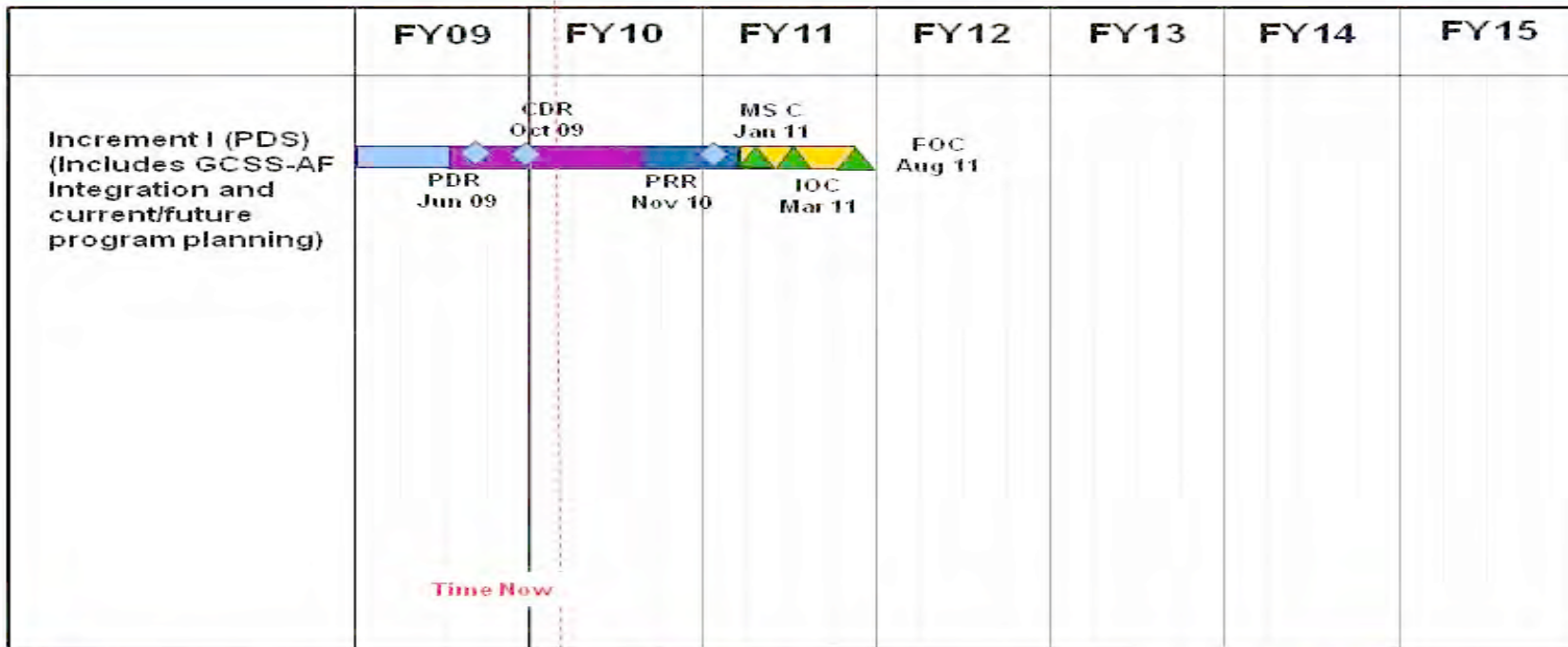
PE 0901538F: *Financial Management Information Systems (FMIS)*

PROJECT

675036: *Financial Information Resource System (FIRST)*



Program Schedule



- Concept activities
- Production / fielding

- Design / development
- Pre-Production

- Integration / test
- Key events

PB10 R-Docs

Depicted by installation/production flow

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>	PROJECT 675036: <i>Financial Information Resource System (FIRST)</i>
--	---	--

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Increment 1 (PDS) Preliminary Design Review (PDR)	3	2009	3	2009
Increment I (PDS) Critical Design Review (CDR)	1	2010	1	2010
Increment I (PDS) Production Readiness Review (PRR)	1	2011	1	2011
Increment I (PDS) Milestone C (MS C)	2	2011	2	2011
Increment I (PDS) Initial Operational Capability (IOC)	2	2011	2	2011
Increment I (PDS) Full Operational Capability (FOC)	4	2011	4	2011

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>	PROJECT 675179: <i>Defense Enterprise Accounting Management System - AF (DEAMS)</i>
--	---	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675179: <i>Defense Enterprise Accounting Management System - AF (DEAMS)</i>	11.949	43.781	45.089	0.000	45.089	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Defense Enterprise Accounting and Management System (DEAMS) is replacing a commercial-off-the-shelf (COTS) based software configuration effort that will provide an auditable modern accounting and finance system. DEAMS will replace existing accounting and finance legacy systems to provide core funds execution management functions consistent with financial management laws, regulations and policy, general ledger, funds management, payments, receivables, cost and revenues, and fiduciary reporting. To date, DEAMS has fielded Increment 1, Spiral 1 with over 700 users at Scott AFB and ANG units providing commitment accounting capability, which have been successfully used for 2 successive year-end closeouts. DEAMS has also successfully released a Beta version of Increment 1, Spiral 2 to approx. 300 users that provide a full general accounting capability. Joint AF and USTRANSCOM technology demonstration includes investment funding, commitment accounting, cost accounting, Foreign Military Sales (FMS) accounting and contingency operations management. DEAMS is compliant with the Clinger-Cohen Act, Business Enterprise Architecture (BEA), and integrate into Global Combat Support System-Air Force (GCSS-AF). Activities also include studies and analysis to support current program planning, execution, and future program planning.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: DEAMS Application Development and Test for AF Increment Capability <i>FY 2009 Accomplishments:</i> In FY 2009, Operation sustainment of Increment 1 Spiral 1. Development and Test of Increment 1 Spiral 2. Release of a Spirial 2 Beta to users. Set-up and testing of a government testing enviornment, GCSS pre-production testing enviornment, production enviornment, pre-COOP enviornment and a COOP environment. Developing interface to GCSS.	1.118	7.792	6.715	0.000	6.715

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>	PROJECT 675179: <i>Defense Enterprise Accounting Management System - AF (DEAMS)</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> In FY 2010, Support of Increment 1 Spiral 1. Completion of fielding of Increment 1 Spiral 2. Storage and maintenance of hardware footprint for Spirals 1 & 2. Continued development of interface to GCSS</p> <p><i>FY 2011 Base Plans:</i> In FY 2011, Operation of Increment 1 Spiral 1 and 2 functionality. Initial Design and Test of Increment 2. Increased storage and maintenance of hardware footprint for Spirals 1 & 2.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>						
<p>MAJOR THRUST: Integration/Support/Analysis</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009, Support of Increment 1 Spiral 1. Increment 1 systems integrator and government testing; running test scripts which will provide insight into suitability issues and identification of any interface problems.</p> <p><i>FY 2010 Plans:</i> In FY 2010, Rollout of Increment 1 Spiral 2 to Scott AFB. Pre contract award activities for Increment 2. EOA of Increment 1. Awarded an Independent Validation & Verification (IV&V) contract to provide an independent review of contractor performance and product.</p> <p><i>FY 2011 Base Plans:</i> In FY 2011, Increment 2 delta blueprinting. SI sustainment of Increment 1 solution. Increment 1 Sustainment pre-FOC. Help Desk Support, Blueprinting PDR. Initiate Design, Build and Test.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.</p>		8.618	32.468	34.230	0.000	34.230

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>	PROJECT 675179: <i>Defense Enterprise Accounting Management System - AF (DEAMS)</i>
--	---	---

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Program Management Office Support <i>FY 2009 Accomplishments:</i> In FY 2009, Sustainment of Inc 1 Spiral 1. Testing of Inc 1 Spiral 2. Increment 2 pre-milestone A activities. Increment 1 Acquisition support. <i>FY 2010 Plans:</i> In FY 2010, Inc 1 Spiral 2 fielding and support; Increment 2 Source selection and acquisition support; End-user training. <i>FY 2011 Base Plans:</i> In FY 2011, Sustainment of Inc 1 and Increment 2 Initial Development and acquisition support. Rollout/change management preparation <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.	2.213	3.521	4.144	0.000	4.144
Accomplishments/Planned Programs Subtotals	11.949	43.781	45.089	0.000	45.089

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE Not Provided (13136): <i>Transportation Working Capital Fund (TWCF)</i>	13.729	17.795	8.073	0.000	8.073	3.675	0.531	0.540	0.549	0.000	0.000
• PE 0308610F: <i>Information Management - Automation - Program 3 (O&M)</i>	0.492	0.400	1.799	0.000	1.799	2.142	19.922	23.155	19.646	0.000	0.000
	7.378	16.650	2.379	0.000	2.379	0.239	0.159	0.000	0.000	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>	PROJECT 675179: <i>Defense Enterprise Accounting Management System - AF (DEAMS)</i>
--	---	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0901538F: <i>Financial Management Information Systems (FMIS) (OPAF)</i>											

D. Acquisition Strategy

The DEAMS program will execute an incremental delivery of COTS-based accounting and financial management capabilities and subsume non-CFO compliant legacy functionality as capability is delivered. Due to solution complexity, the Program Office is investigating Cost Plus and Firm Fixed Price contract opportunities, subject to Milestone Decision Authority approval, which allow for equitable and sensible allocation of risk between the Government and the contractor.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>	PROJECT 675179: <i>Defense Enterprise Accounting Management System - AF (DEAMS)</i>
--	---	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DEAMS Application Development and Test for AF Increment Capability	Various/ Various	Various Various	0.223	9.862	Nov 2009	8.151	Nov 2010	0.000		8.151	Continuing	Continuing	Continuing
GCSS/DISA Support	MIPR	754 ELSG Gunter AFB, AL	1.118	7.792	Oct 2009	6.715	Oct 2010	0.000		6.715	Continuing	Continuing	Continuing
Subtotal			1.341	17.654		14.866		0.000		14.866			

Remarks

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Capabilities Integration Environment (CIE)	MIPR	754 ELSG Gunter AFB, AL	0.000	0.629	Dec 2009	0.063	Dec 2010	0.000		0.063	Continuing	Continuing	Continuing
Responsible Test Organization (RTO)	MIPR	754 ELSG Gunter AFB, AL	0.174	0.340	Dec 2009	0.134	Dec 2010	0.000		0.134	Continuing	Continuing	Continuing
Joint Interoperability Test Center (JITC)	MIPR	JITC Fort Huachuca, AZ	0.000	0.245	Oct 2009	0.016	Oct 2010	0.000		0.016	Continuing	Continuing	Continuing
	MIPR	AFOTEC Kirtland AFB, NM	0.180	0.098	Oct 2009	0.013	Oct 2010	0.000		0.013	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>	PROJECT 675179: <i>Defense Enterprise Accounting Management System - AF (DEAMS)</i>
--	---	---

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Air Force Operational Test & Evaluation Center (AFOTEC)													
Independent Verification and Validation (IV&V)	TM	CACI Fairborn OH	0.004	1.500	Nov 2009	1.500	Nov 2010	0.000		1.500	Continuing	Continuing	Continuing
Subtotal			0.358	2.812		1.726		0.000		1.726			

Remarks

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
A&AS Support (ETASS, Oracle)	Various	Various Various	2.397	4.280	Dec 2009	4.417	Dec 2010	0.000		4.417	Continuing	Continuing	Continuing
Program Office Support (PASS, SCS, Fund Type A (FTA))	Various	Various Various	2.213	3.521	Dec 2009	4.144	Dec 2010	0.000		4.144	Continuing	Continuing	Continuing
Functional Management Office Support (Change Management, Enterprise Resource Planning, Functional & Acquisition Support,	Various	Various Various	5.282	14.298	Oct 2009	18.681	Oct 2010	0.000		18.681	Continuing	Continuing	Continuing

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>	PROJECT 675179: <i>Defense Enterprise Accounting Management System - AF (DEAMS)</i>
--	---	---

Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Functional Test Center, Facilities, Strategic Communications)													
MITRE	FFRDC	MITRE Hanscom AFB, MA	0.358	1.216	Nov 2009	1.255	Nov 2010	0.000		1.255	Continuing	Continuing	Continuing
Subtotal			10.250	23.315		28.497		0.000		28.497			

Remarks

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	11.949	43.781	45.089	0.000	45.089			

Remarks

Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

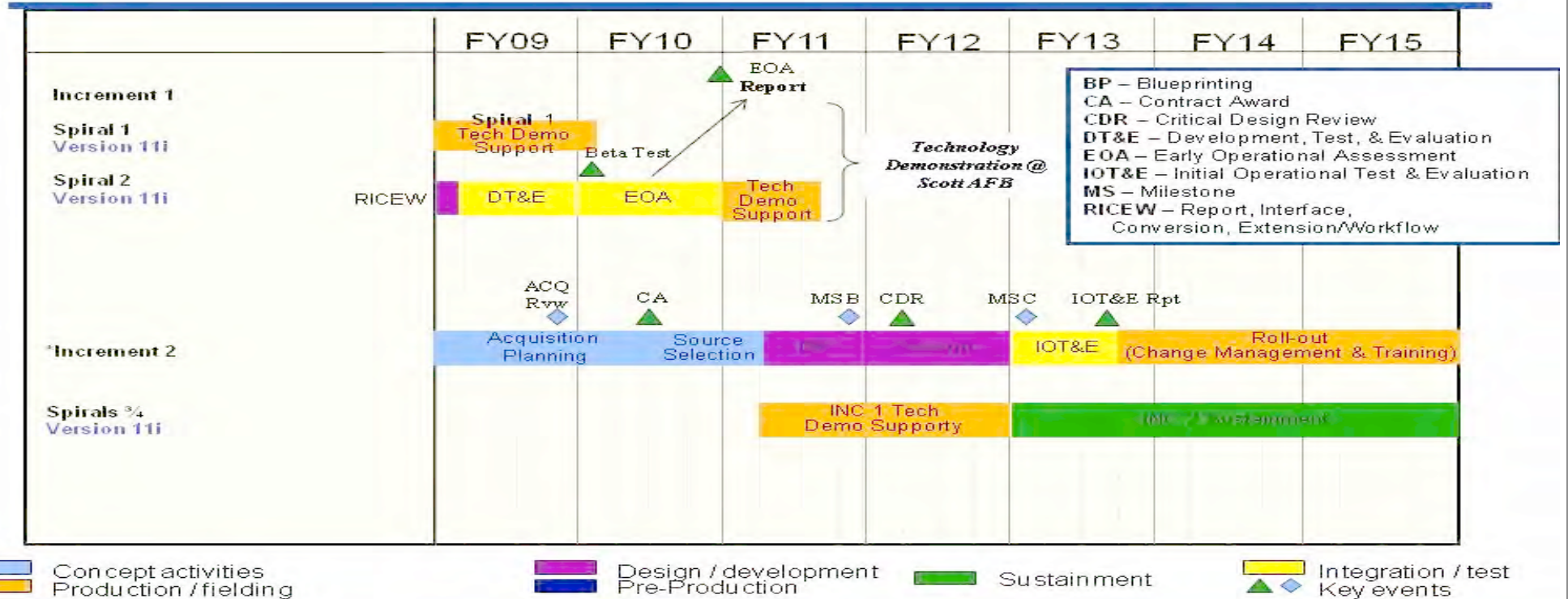
PE 0901538F: *Financial Management Information Systems (FMIS)*

PROJECT

675179: *Defense Enterprise Accounting Management System - AF (DEAMS)*



Program Schedule



PR 11 R-Docs

*Fact of Life – Increment 2 includes Spiral 3/4

Depicted by installation/production flow

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0901538F: <i>Financial Management Information Systems (FMIS)</i>	PROJECT 675179: <i>Defense Enterprise Accounting Management System - AF (DEAMS)</i>
--	---	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
AF Inc 1 Spiral 1	1	2009	1	2010
AF Inc 1 Spiral 2 RICEW	1	2009	1	2009
AF Inc 1 Spiral 2 DT&E	1	2009	4	2009
AF Inc 1 Beta Test	1	2010	1	2010
AF Inc 1 Spiral 2 EOA	1	2010	4	2010
AF Inc 1 Spiral 2 EOA Report	1	2011	1	2011
AF Inc 1 Spiral 2 Tech Demo Support	1	2011	3	2011
AF Inc 2 Acquisition Planning	1	2009	2	2010
AF Inc 2 Acquisition Planning Review	4	2009	4	2009
AF Inc 2 Source Selection	3	2010	1	2011
AF Inc 2 Contract Award	1	2011	1	2011
AF Inc 2 Blueprinting	2	2011	4	2011
AF Inc 2 Milestone B	4	2011	4	2011
AF Inc 2 Spiral 3/4 Inc 1 Tech Demo Support	2	2011	4	2011

UNCLASSIFIED