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**Department of Defense
Fiscal Year (FY) 2013 President's Budget Submission**

February 2012



Air Force

Justification Book Volume 3A

Research, Development, Test & Evaluation, Air Force

Volume 3 - A

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Air Force • President's Budget Submission FY 2013 • RDT&E Program

Table of Volumes

Budget Activity 7..... Volume 3A
Budget Activity 7..... Volume 3B

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Air Force • President's Budget Submission FY 2013 • RDT&E Program

Volume 3A Table of Contents

Introduction and Explanation of Contents..... Volume 3A - v

Comptroller Exhibit R-1..... Volume 3A - vii

Master Program Element Table of Contents (by Budget Activity then Line Item Number)..... Volume 3A - xxxiii

Master Program Element Table of Contents (Alphabetically by Program Element Title)..... Volume 3A - xli

Book Split Statement..... Volume 3A - xlix

FY13 PB Classified PEs..... Volume 3A - li

FY13 PB Crosswalk Report Volume 3A - liii

FY13 PB 1391s..... Volume 3A - lix

Exhibit R-2's..... Volume 3A - 1

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Fiscal Year 2013 Budget Estimates
RDT&E Descriptive Summaries
Budget Activities
February 2012

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 2013 Program/Budget Review Submission.

- 1) All exhibits in this document have been assembled in accordance with DoD 7000.14R, Financial Management Regulation, Volume 2B, 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 2013 RDT&E program with the exception of classified program elements. The format and contents of this document are in accordance to 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.

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.

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Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

Summary Recap of Budget Activities -----	FY 2011 Actuals	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Basic Research	476,425	530,859		530,859
Applied Research	1,176,015	1,219,086		1,219,086
Advanced Technology Development	502,853	627,102	58,600	685,702
Advanced Component Development & Prototypes	1,568,398	1,444,578		1,444,578
System Development & Demonstration	3,185,265	3,850,525		3,850,525
RDT&E Management Support	1,396,405	1,350,461		1,350,461
Operational Systems Development	19,115,999	17,457,590	201,000	17,658,590
Total Research, Development, Test & Evaluation	27,421,360	26,480,201	259,600	26,739,801
 Summary Recap of FYDP Programs -----				
Strategic Forces	466,679	533,079		533,079
General Purpose Forces	2,189,250	1,967,367	50,000	2,017,367
Intelligence and Communications	2,580,248	2,209,300	82,000	2,291,300
Mobility Forces	425,404	285,289		285,289
Research and Development	8,423,493	9,259,688	58,600	9,318,288
Central Supply and Maintenance	283,788	225,312		225,312
Training Medical and Other	7,330	1,956		1,956
Administration and Associated Activities	74,361	94,584		94,584
Support of Other Nations	3,636	3,798		3,798
Classified Programs	12,967,171	11,899,828	69,000	11,968,828
Total Research, Development, Test & Evaluation	27,421,360	26,480,201	259,600	26,739,801

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 Exhibit R-1 FY 2013 President's Budget (Published Version)
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 (Dollars in Thousands)

31 Jan 2012

Summary Recap of Budget Activities -----	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Basic Research	516,034		516,034
Applied Research	1,109,053		1,109,053
Advanced Technology Development	596,737		596,737
Advanced Component Development & Prototypes	1,181,177		1,181,177
System Development & Demonstration	4,966,724		4,966,724
RDT&E Management Support	1,190,349		1,190,349
Operational Systems Development	15,867,972	53,150	15,921,122
Total Research, Development, Test & Evaluation	25,428,046	53,150	25,481,196
Summary Recap of FYDP Programs -----			
Strategic Forces	222,582		222,582
General Purpose Forces	1,820,202		1,820,202
Intelligence and Communications	1,916,639		1,916,639
Mobility Forces	244,314		244,314
Research and Development	9,750,681		9,750,681
Central Supply and Maintenance	179,795		179,795
Training Medical and Other	1,760		1,760
Administration and Associated Activities	116,039		116,039
Support of Other Nations	3,851		3,851
Classified Programs	11,172,183	53,150	11,225,333
Total Research, Development, Test & Evaluation	25,428,046	53,150	25,481,196

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31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2011 Actuals	FY 2012 Base	FY 2012 OCO	FY 2012 Total	S e c
1	0601102F	Defense Research Sciences	01	336,021	364,328		364,328	U
2	0601103F	University Research Initiatives	01	127,656	152,273		152,273	U
3	0601108F	High Energy Laser Research Initiatives	01	12,748	14,258		14,258	U
		Basic Research		476,425	530,859		530,859	
4	0602102F	Materials	02	136,846	144,219		144,219	U
5	0602201F	Aerospace Vehicle Technologies	02	140,261	147,628		147,628	U
6	0602202F	Human Effectiveness Applied Research	02	89,862	86,663		86,663	U
7	0602203F	Aerospace Propulsion	02	198,878	207,406		207,406	U
8	0602204F	Aerospace Sensors	02	158,516	134,632		134,632	U
9	0602601F	Space Technology	02	114,718	115,158		115,158	U
10	0602602F	Conventional Munitions	02	60,365	60,656		60,656	U
11	0602605F	Directed Energy Technology	02	110,323	141,078		141,078	U
12	0602788F	Dominant Information Sciences and Methods	02	114,732	127,855		127,855	U
13	0602890F	High Energy Laser Research	02	51,514	53,791		53,791	U
		Applied Research		1,176,015	1,219,086		1,219,086	
14	0603112F	Advanced Materials for Weapon Systems	03	39,638	60,719		60,719	U
15	0603199F	Sustainment Science and Technology (S&T)	03	2,764	5,780		5,780	U
16	0603203F	Advanced Aerospace Sensors	03	42,105	63,066	58,600	121,666	U
17	0603211F	Aerospace Technology Dev/Demo	03	49,428	67,474		67,474	U
18	0603216F	Aerospace Propulsion and Power Technology	03	129,925	120,924		120,924	U
19	0603270F	Electronic Combat Technology	03	16,029	22,231		22,231	U

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1	0601102F	Defense Research Sciences	01	361,787		361,787	U
2	0601103F	University Research Initiatives	01	141,153		141,153	U
3	0601108F	High Energy Laser Research Initiatives	01	13,094		13,094	U
		Basic Research		516,034		516,034	
4	0602102F	Materials	02	114,166		114,166	U
5	0602201F	Aerospace Vehicle Technologies	02	120,719		120,719	U
6	0602202F	Human Effectiveness Applied Research	02	89,319		89,319	U
7	0602203F	Aerospace Propulsion	02	232,547		232,547	U
8	0602204F	Aerospace Sensors	02	127,637		127,637	U
9	0602601F	Space Technology	02	98,375		98,375	U
10	0602602F	Conventional Munitions	02	77,175		77,175	U
11	0602605F	Directed Energy Technology	02	106,196		106,196	U
12	0602788F	Dominant Information Sciences and Methods	02	104,362		104,362	U
13	0602890F	High Energy Laser Research	02	38,557		38,557	U
		Applied Research		1,109,053		1,109,053	
14	0603112F	Advanced Materials for Weapon Systems	03	47,890		47,890	U
15	0603199F	Sustainment Science and Technology (S&T)	03	6,565		6,565	U
16	0603203F	Advanced Aerospace Sensors	03	37,657		37,657	U
17	0603211F	Aerospace Technology Dev/Demo	03	81,376		81,376	U
18	0603216F	Aerospace Propulsion and Power Technology	03	151,152		151,152	U
19	0603270F	Electronic Combat Technology	03	32,941		32,941	U

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Line No	Program Element Number	Item	Act	FY 2011 Actuals	FY 2012 Base	FY 2012 OCO	FY 2012 Total	S e c
20	0603401F	Advanced Spacecraft Technology	03	75,103	74,009		74,009	U
21	0603444F	Maui Space Surveillance System (MSSS)	03	14,802	13,555		13,555	U
22	0603456F	Human Effectiveness Advanced Technology Development	03	23,445	25,283		25,283	U
23	0603601F	Conventional Weapons Technology	03	14,764	45,542		45,542	U
24	0603605F	Advanced Weapons Technology	03	16,104	48,666		48,666	U
25	0603680F	Manufacturing Technology Program	03	46,564	40,103		40,103	U
26	0603788F	Battlespace Knowledge Development and Demonstration	03	30,403	38,628		38,628	U
27	0603924F	High Energy Laser Advanced Technology Program	03	1,779	1,122		1,122	U
		Advanced Technology Development		502,853	627,102	58,600	685,702	
28	0603260F	Intelligence Advanced Development	04	4,993	4,013		4,013	U
29	0603287F	Physical Security Equipment	04	967	3,586		3,586	U
30	0603430F	Advanced EHF MILSATCOM (SPACE)	04	385,033	397,446		397,446	U
31	0603432F	Polar MILSATCOM (SPACE)	04	138,051	101,348		101,348	U
32	0603438F	Space Control Technology	04	63,310	44,635		44,635	U
33	0603742F	Combat Identification Technology	04	35,208	38,447		38,447	U
34	0603790F	NATO Research and Development	04	4,265	4,424		4,424	U
35	0603791F	International Space Cooperative R&D	04	581	615		615	U
36	0603830F	Space Protection Program (SPP)	04	8,306	7,299		7,299	U
37	0603850F	Integrated Broadcast Service - Dem/Val	04	20,396	20,046		20,046	U
38	0603851F	Intercontinental Ballistic Missile - Dem/Val	04	67,242	69,436		69,436	U
39	0603854F	Wideband Global SATCOM RDT&E (Space)	04	74,857	12,692		12,692	U

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 Exhibit R-1 FY 2013 President's Budget (Published Version)
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 (Dollars in Thousands)

31 Jan 2012

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20	0603401F	Advanced Spacecraft Technology	03	64,557		64,557	U
21	0603444F	Maui Space Surveillance System (MSSS)	03	29,256		29,256	U
22	0603456F	Human Effectiveness Advanced Technology Development	03	21,523		21,523	U
23	0603601F	Conventional Weapons Technology	03	36,352		36,352	U
24	0603605F	Advanced Weapons Technology	03	19,004		19,004	U
25	0603680F	Manufacturing Technology Program	03	37,045		37,045	U
26	0603788F	Battlespace Knowledge Development and Demonstration	03	31,419		31,419	U
27	0603924F	High Energy Laser Advanced Technology Program	03				U
		Advanced Technology Development		596,737		596,737	
28	0603260F	Intelligence Advanced Development	04	3,866		3,866	U
29	0603287F	Physical Security Equipment	04	3,704		3,704	U
30	0603430F	Advanced EHF MILSATCOM (SPACE)	04	229,171		229,171	U
31	0603432F	Polar MILSATCOM (SPACE)	04	120,676		120,676	U
32	0603438F	Space Control Technology	04	25,144		25,144	U
33	0603742F	Combat Identification Technology	04	32,243		32,243	U
34	0603790F	NATO Research and Development	04	4,507		4,507	U
35	0603791F	International Space Cooperative R&D	04	652		652	U
36	0603830F	Space Protection Program (SPP)	04	10,429		10,429	U
37	0603850F	Integrated Broadcast Service - Dem/Val	04	19,938		19,938	U
38	0603851F	Intercontinental Ballistic Missile - Dem/Val	04	71,181		71,181	U
39	0603854F	Wideband Global SATCOM RDT&E (Space)	04	12,027		12,027	U

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UNCLASSIFIED

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 (Dollars in Thousands)

31 Jan 2012

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Line No	Program Element Number	Item	Act	FY 2011 Actuals	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Sec
40	0603859F	Pollution Prevention - Dem/Val	04	2,447	2,075		2,075	U
41	0603860F	Joint Precision Approach and Landing Systems - Dem/Val	04	12,452	19,879		19,879	U
42	0604015F	Long Range Strike	04	192,816	294,911		294,911	U
43	0604283F	Battle Mgmt Com & Ctrl Sensor Development	04	12,994	30,362		30,362	U
44	0604317F	Technology Transfer	04		2,553		2,553	U
45	0604327F	Hard and Deeply Buried Target Defeat System (HDBTDS) Program	04	22,275	33,248		33,248	U
46	0604330F	Joint Dual Role Air Dominance Missile	04	9,465	29,759		29,759	U
47	0604337F	Requirements Analysis and Maturation	04	32,797	23,511		23,511	U
48	0604422F	Weather Satellite Follow-on	04		123,681		123,681	U
49	0604436F	Next-Generation MILSATCOM Technology Development	04	19,898				U
50	0604635F	Ground Attack Weapons Fuze Development	04	22,398	24,467		24,467	U
51	0604775F	Defense Rapid Innovation Program	04	104,464				U
52	0604796F	Alternative Fuels	04	23,259				U
53	0604830F	Automated Air-to-Air Refueling	04	83				U
54	0604857F	Operationally Responsive Space	04	124,983	110,379		110,379	U
55	0604858F	Tech Transition Program	04	11,842	2,766		2,766	U
56	0305164F	NAVSTAR Global Positioning System (User Equipment) (SPACE)	04					U
57	0305178F	National Polar-Orbiting Operational Environmental Satellite System (NPOESS)	04	173,016	43,000		43,000	U
		Advanced Component Development & Prototypes		1,568,398	1,444,578		1,444,578	
58	0603840F	Global Broadcast Service (GBS)	05	25,793	5,631		5,631	U
59	0604222F	Nuclear Weapons Support	05	59,591	18,475		18,475	U

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Line No	Program Element Number	Item	Act	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Se
40	0603859F	Pollution Prevention - Dem/Val	04	2,054		2,054	U
41	0603860F	Joint Precision Approach and Landing Systems - Dem/Val	04	57,975		57,975	U
42	0604015F	Long Range Strike	04	291,742		291,742	U
43	0604283F	Battle Mgmt Com & Ctrl Sensor Development	04	114,417		114,417	U
44	0604317F	Technology Transfer	04	2,576		2,576	U
45	0604327F	Hard and Deeply Buried Target Defeat System (HDBTDS) Program	04	16,711		16,711	U
46	0604330F	Joint Dual Role Air Dominance Missile	04				U
47	0604337F	Requirements Analysis and Maturation	04	16,343		16,343	U
48	0604422F	Weather Satellite Follow-on	04	2,000		2,000	U
49	0604436F	Next-Generation MILSATCOM Technology Development	04				U
50	0604635F	Ground Attack Weapons Fuze Development	04	9,423		9,423	U
51	0604775F	Defense Rapid Innovation Program	04				U
52	0604796F	Alternative Fuels	04				U
53	0604830F	Automated Air-to-Air Refueling	04				U
54	0604857F	Operationally Responsive Space	04				U
55	0604858F	Tech Transition Program	04	37,558		37,558	U
56	0305164F	NAVSTAR Global Positioning System (User Equipment) (SPACE)	04	96,840		96,840	U
57	0305178F	National Polar-Orbiting Operational Environmental Satellite System (NPOESS)	04				U
		Advanced Component Development & Prototypes		1,181,177		1,181,177	
58	0603840F	Global Broadcast Service (GBS)	05	14,652		14,652	U
59	0604222F	Nuclear Weapons Support	05	25,713		25,713	U

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60	0604233F	Specialized Undergraduate Flight Training	05	7,794	21,780		21,780	U
61	0604270F	Electronic Warfare Development	05	86,955	16,880		16,880	U
62	0604280F	Joint Tactical Radio	05	628				U
63	0604281F	Tactical Data Networks Enterprise	05	192,882	47,057		47,057	U
64	0604287F	Physical Security Equipment	05	49	51		51	U
65	0604329F	Small Diameter Bomb (SDB) - EMD	05	99,992	132,881		132,881	U
66	0604421F	Counterspace Systems	05	37,994	31,578		31,578	U
67	0604425F	Space Situation Awareness Systems	05	318,652	238,261		238,261	U
68	0604429F	Airborne Electronic Attack	05	25,051	41,000		41,000	U
69	0604441F	Space Based Infrared System (SBIRS) High EMD	05	523,788	621,629		621,629	U
70	0604602F	Armament/Ordnance Development	05	6,659	7,755		7,755	U
71	0604604F	Submunitions	05	1,614	2,427		2,427	U
72	0604617F	Agile Combat Support	05	34,037	7,978		7,978	U
73	0604706F	Life Support Systems	05	10,340	9,280		9,280	U
74	0604735F	Combat Training Ranges	05	35,723	8,106		8,106	U
75	0604740F	Integrated Command & Control Applications (IC2A)	05	10	10		10	U
76	0604750F	Intelligence Equipment	05	1,357	995		995	U
77	0604800F	F-35 - EMD	05	931,599	1,387,926		1,387,926	U
78	0604851F	Intercontinental Ballistic Missile - EMD	05	66,342	148,307		148,307	U
79	0604853F	Evolved Expendable Launch Vehicle Program (SPACE) - EMD	05	53,786	14,524		14,524	U
80	0604932F	Long Range Standoff Weapon	05					U

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60	0604233F	Specialized Undergraduate Flight Training	05	6,583		6,583	U
61	0604270F	Electronic Warfare Development	05	1,975		1,975	U
62	0604280F	Joint Tactical Radio	05	2,594		2,594	U
63	0604281F	Tactical Data Networks Enterprise	05	24,534		24,534	U
64	0604287F	Physical Security Equipment	05	51		51	U
65	0604329F	Small Diameter Bomb (SDB) - EMD	05	143,000		143,000	U
66	0604421F	Counterspace Systems	05	28,797		28,797	U
67	0604425F	Space Situation Awareness Systems	05	267,252		267,252	U
68	0604429F	Airborne Electronic Attack	05	4,118		4,118	U
69	0604441F	Space Based Infrared System (SBIRS) High EMD	05	448,594		448,594	U
70	0604602F	Armament/Ordnance Development	05	9,951		9,951	U
71	0604604F	Submunitions	05	2,567		2,567	U
72	0604617F	Agile Combat Support	05	13,059		13,059	U
73	0604706F	Life Support Systems	05	9,720		9,720	U
74	0604735F	Combat Training Ranges	05	9,222		9,222	U
75	0604740F	Integrated Command & Control Applications (IC2A)	05				U
76	0604750F	Intelligence Equipment	05	803		803	U
77	0604800F	F-35 - EMD	05	1,210,306		1,210,306	U
78	0604851F	Intercontinental Ballistic Missile - EMD	05	135,437		135,437	U
79	0604853F	Evolved Expendable Launch Vehicle Program (SPACE) - EMD	05	7,980		7,980	U
80	0604932F	Long Range Standoff Weapon	05	2,004		2,004	U

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81	0604933F	ICBM Fuze Modernization	05					U
82	0605213F	F-22 Modernization Increment 3.2B	05					U
83	0605221F	Next Generation Aerial Refueling Aircraft	05	538,875	877,084		877,084	U
84	0605229F	CSAR HH-60 Recapitalization	05	11,924	11,113		11,113	U
85	0605278F	HC/MC-130 Recap RDT&E	05	15,008	22,071		22,071	U
86	0605931F	B-2 Defensive Management System	05					U
87	0101125F	Nuclear Weapons Modernization	05		93,867		93,867	U
88	0207100F	Light Attack Armed Reconnaissance (LAAR) Squadrons	05		13,721		13,721	U
89	0207604F	Readiness Training Ranges, Operations and Maintenance	05					U
90	0207701F	Full Combat Mission Training	05	55,539	29,826		29,826	U
91	0305230F	MC-12	05					U
92	0401138F	C-27J Airlift Squadrons	05	17,849	27,089		27,089	U
93	0401318F	CV-22	05	17,648	13,223		13,223	U
94	0401845F	Airborne Senior Leader C3 (SLC3S)	05	7,786				U
		System Development & Demonstration		3,185,265	3,850,525		3,850,525	
95	0604256F	Threat Simulator Development	06	24,805	22,420		22,420	U
96	0604759F	Major T&E Investment	06	59,469	62,206		62,206	U
97	0605101F	RAND Project Air Force	06	31,616	27,579		27,579	U
98	0605502F	Small Business Innovation Research	06	317,183				U
99	0605712F	Initial Operational Test & Evaluation	06	20,278	17,754		17,754	U
100	0605807F	Test and Evaluation Support	06	752,328	704,475		704,475	U

R-1C: FY 2013 President's Budget (Published Version), as of January 31, 2012 at 11:02:29

UNCLASSIFIED

Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Se
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81	0604933F	ICBM Fuze Modernization	05	73,512		73,512	U
82	0605213F	F-22 Modernization Increment 3.2B	05	140,100		140,100	U
83	0605221F	Next Generation Aerial Refueling Aircraft	05	1,815,588		1,815,588	U
84	0605229F	CSAR HH-60 Recapitalization	05	123,210		123,210	U
85	0605278F	HC/MC-130 Recap RDT&E	05	19,039		19,039	U
86	0605931F	B-2 Defensive Management System	05	281,056		281,056	U
87	0101125F	Nuclear Weapons Modernization	05	80,200		80,200	U
88	0207100F	Light Attack Armed Reconnaissance (LAAR) Squadrons	05				U
89	0207604F	Readiness Training Ranges, Operations and Maintenance	05	310		310	U
90	0207701F	Full Combat Mission Training	05	14,861		14,861	U
91	0305230F	MC-12	05	19,949		19,949	U
92	0401138F	C-27J Airlift Squadrons	05				U
93	0401318F	CV-22	05	28,027		28,027	U
94	0401845F	Airborne Senior Leader C3 (SLC3S)	05	1,960		1,960	U
		System Development & Demonstration		4,966,724		4,966,724	
95	0604256F	Threat Simulator Development	06	22,812		22,812	U
96	0604759F	Major T&E Investment	06	42,236		42,236	U
97	0605101F	RAND Project Air Force	06	25,579		25,579	U
98	0605502F	Small Business Innovation Research	06				U
99	0605712F	Initial Operational Test & Evaluation	06	16,197		16,197	U
100	0605807F	Test and Evaluation Support	06	722,071		722,071	U

R-1C: FY 2013 President's Budget (Published Version), as of January 31, 2012 at 11:02:29

UNCLASSIFIED

Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2011 Actuals	FY 2012 Base	FY 2012 OCO	FY 2012 Total	S e c
101	0605860F	Rocket Systems Launch Program (SPACE)	06	23,431	157,799		157,799	U
102	0605864F	Space Test Program (STP)	06	44,468	47,409		47,409	U
103	0605976F	Facilities Restoration and Modernization - Test and Evaluation Support	06	46,091	44,547		44,547	U
104	0605978F	Facilities Sustainment - Test and Evaluation Support	06	27,438	27,953		27,953	U
105	0606323F	Multi-Service Systems Engineering Initiative	06	18,258	13,953		13,953	U
106	0606392F	Space and Missile Center (SMC) Civilian Workforce	06		187,096		187,096	U
107	0702806F	Acquisition and Management Support	06	24,074	31,962		31,962	U
108	0804731F	General Skill Training	06	1,491	1,510		1,510	U
109	0909980F	Judgment Fund Reimbursement	06	371				U
110	0909999F	Financing for Cancelled Account Adjustments	06	1,468				U
111	1001004F	International Activities	06	3,636	3,798		3,798	U
	RDT&E	Management Support		1,396,405	1,350,461		1,350,461	
112	0603423F	Global Positioning System III - Operational Control Segment	07	353,623	362,823		362,823	U
113	0604263F	Common Vertical Lift Support Platform	07	3,980	5,365		5,365	U
114	0605018F	AF Integrated Personnel and Pay System (AF-IPPS)	07	22,471	91,640		91,640	U
115	0605024F	Anti-Tamper Technology Executive Agency	07	40,936	35,245		35,245	U
117	0101113F	B-52 Squadrons	07	129,864	93,808		93,808	U
118	0101122F	Air-Launched Cruise Missile (ALCM)	07	3,518	803		803	U
119	0101126F	B-1B Squadrons	07	33,063	33,011		33,011	U
120	0101127F	B-2 Squadrons	07	244,732	280,319		280,319	U
121	0101313F	Strat War Planning System - USSTRATCOM	07	30,133	22,791		22,791	U

R-1C: FY 2013 President's Budget (Published Version), as of January 31, 2012 at 11:02:29

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Se c
101	0605860F	Rocket Systems Launch Program (SPACE)	06	16,200		16,200	U
102	0605864F	Space Test Program (STP)	06	10,051		10,051	U
103	0605976F	Facilities Restoration and Modernization - Test and Evaluation Support	06	42,597		42,597	U
104	0605978F	Facilities Sustainment - Test and Evaluation Support	06	27,301		27,301	U
105	0606323F	Multi-Service Systems Engineering Initiative	06	13,964		13,964	U
106	0606392F	Space and Missile Center (SMC) Civilian Workforce	06	203,766		203,766	U
107	0702806F	Acquisition and Management Support	06	42,430		42,430	U
108	0804731F	General Skill Training	06	1,294		1,294	U
109	0909980F	Judgment Fund Reimbursement	06				U
110	0909999F	Financing for Cancelled Account Adjustments	06				U
111	1001004F	International Activities	06	3,851		3,851	U
	RDT&E Management Support			1,190,349		1,190,349	
112	0603423F	Global Positioning System III - Operational Control Segment	07	371,595		371,595	U
113	0604263F	Common Vertical Lift Support Platform	07				U
114	0605018F	AF Integrated Personnel and Pay System (AF-IPPS)	07	91,697		91,697	U
115	0605024F	Anti-Tamper Technology Executive Agency	07	17,037		17,037	U
117	0101113F	B-52 Squadrons	07	53,208		53,208	U
118	0101122F	Air-Launched Cruise Missile (ALCM)	07	431		431	U
119	0101126F	B-1B Squadrons	07	16,265		16,265	U
120	0101127F	B-2 Squadrons	07	35,970		35,970	U
121	0101313F	Strat War Planning System - USSTRATCOM	07	30,889		30,889	U

R-1C: FY 2013 President's Budget (Published Version), as of January 31, 2012 at 11:02:29

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2011 Actuals	FY 2012 Base	FY 2012 OCO	FY 2012 Total	S e c
---	-----	----	---	-----	-----	-----	-----	-
122	0101314F	Night Fist - USSTRATCOM	07	5,332	2,000		2,000	U
124	0102326F	Region/Sector Operation Control Center Modernization Program	07	20,022	6,466		6,466	U
125	0102823F	Strategic Aerospace Intelligence System Activities	07	15	14		14	U
126	0203761F	Warfighter Rapid Acquisition Process (WRAP) Rapid Transition Fund	07	10,178	19,892		19,892	U
127	0205219F	MQ-9 UAV	07	136,667	126,730		126,730	U
128	0207040F	Multi-Platform Electronic Warfare Equipment	07	15,045				U
129	0207131F	A-10 Squadrons	07	5,485	11,051		11,051	U
130	0207133F	F-16 Squadrons	07	125,417	131,069		131,069	U
131	0207134F	F-15E Squadrons	07	200,966	194,831		194,831	U
132	0207136F	Manned Destructive Suppression	07	12,496	13,253		13,253	U
133	0207138F	F-22A Squadrons	07	493,506	571,320		571,320	U
134	0207142F	F-35 Squadrons	07		9,967		9,967	U
135	0207161F	Tactical AIM Missiles	07	5,834	8,023		8,023	U
136	0207163F	Advanced Medium Range Air-to-Air Missile (AMRAAM)	07	60,834	77,830		77,830	U
137	0207170F	Joint Helmet Mounted Cueing System (JHMCS)	07	2,330	1,436		1,436	U
138	0207224F	Combat Rescue and Recovery	07	912	2,292		2,292	U
139	0207227F	Combat Rescue - Pararescue	07	2,821	927		927	U
140	0207247F	AF TENCAP	07	11,589	20,727		20,727	U
141	0207249F	Precision Attack Systems Procurement	07	2,915	3,128		3,128	U
142	0207253F	Compass Call	07	19,949	18,509		18,509	U
143	0207268F	Aircraft Engine Component Improvement Program	07	115,290	172,967		172,967	U

R-1C: FY 2013 President's Budget (Published Version), as of January 31, 2012 at 11:02:29

UNCLASSIFIED

Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Se c
---	-----	----	---	-----	-----	-----	-
122	0101314F	Night Fist - USSTRATCOM	07	10		10	U
124	0102326F	Region/Sector Operation Control Center Modernization Program	07	5,609		5,609	U
125	0102823F	Strategic Aerospace Intelligence System Activities	07				U
126	0203761F	Warfighter Rapid Acquisition Process (WRAP) Rapid Transition Fund	07	15,098		15,098	U
127	0205219F	MQ-9 UAV	07	147,971		147,971	U
128	0207040F	Multi-Platform Electronic Warfare Equipment	07	49,848		49,848	U
129	0207131F	A-10 Squadrons	07	13,538		13,538	U
130	0207133F	F-16 Squadrons	07	190,257		190,257	U
131	0207134F	F-15E Squadrons	07	192,677		192,677	U
132	0207136F	Manned Destructive Suppression	07	13,683		13,683	U
133	0207138F	F-22A Squadrons	07	371,667		371,667	U
134	0207142F	F-35 Squadrons	07	8,117		8,117	U
135	0207161F	Tactical AIM Missiles	07	8,234		8,234	U
136	0207163F	Advanced Medium Range Air-to-Air Missile (AMRAAM)	07	87,041		87,041	U
137	0207170F	Joint Helmet Mounted Cueing System (JHMCS)	07	1,472		1,472	U
138	0207224F	Combat Rescue and Recovery	07	2,095		2,095	U
139	0207227F	Combat Rescue - Pararescue	07	1,119		1,119	U
140	0207247F	AF TENCAP	07	63,853		63,853	U
141	0207249F	Precision Attack Systems Procurement	07	1,063		1,063	U
142	0207253F	Compass Call	07	12,094		12,094	U
143	0207268F	Aircraft Engine Component Improvement Program	07	187,984		187,984	U

R-1C: FY 2013 President's Budget (Published Version), as of January 31, 2012 at 11:02:29

UNCLASSIFIED

Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2011 Actuals	FY 2012 Base	FY 2012 OCO	FY 2012 Total	S e c
---	-----	----	---	-----	-----	-----	-----	-
144	0207277F	ISR Innovations	07	115,300		50,000	50,000	U
145	0207325F	Joint Air-to-Surface Standoff Missile (JASSM)	07	19,324	5,796		5,796	U
146	0207410F	Air & Space Operations Center (AOC)	07	89,867	120,670		120,670	U
147	0207412F	Control and Reporting Center (CRC)	07	52,120	3,387		3,387	U
148	0207417F	Airborne Warning and Control System (AWACS)	07	201,838	117,880		117,880	U
149	0207418F	Tactical Airborne Control Systems	07		8,309		8,309	U
150	0207423F	Advanced Communications Systems	07	52,480	43,964		43,964	U
152	0207431F	Combat Air Intelligence System Activities	07	4,593	5,428		5,428	U
153	0207438F	Theater Battle Management (TBM) C4I	07	14,640	15,485		15,485	U
154	0207444F	Tactical Air Control Party-Mod	07		9,515		9,515	U
155	0207445F	Fighter Tactical Data Link	07	22,756				U
156	0207448F	C2ISR Tactical Data Link	07	1,528	1,522		1,522	U
157	0207449F	Command and Control (C2) Constellation	07	25,039	17,254		17,254	U
158	0207452F	DCAPES	07					U
159	0207581F	Joint Surveillance/Target Attack Radar System (JSTARS)	07	162,756	74,018		74,018	U
160	0207590F	Seek Eagle	07	19,165	18,599		18,599	U
161	0207601F	USAF Modeling and Simulation	07	20,800	22,990		22,990	U
162	0207605F	Wargaming and Simulation Centers	07	5,829	5,779		5,779	U
163	0207697F	Distributed Training and Exercises	07	2,759	3,247		3,247	U
164	0208006F	Mission Planning Systems	07	80,492	63,009		63,009	U
165	0208021F	Information Warfare Support	07	2,152	2,314		2,314	U

R-1C: FY 2013 President's Budget (Published Version), as of January 31, 2012 at 11:02:29

UNCLASSIFIED

Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Se
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144	0207277F	ISR Innovations	07				U
145	0207325F	Joint Air-to-Surface Standoff Missile (JASSM)	07	7,950		7,950	U
146	0207410F	Air & Space Operations Center (AOC)	07	76,315		76,315	U
147	0207412F	Control and Reporting Center (CRC)	07	8,653		8,653	U
148	0207417F	Airborne Warning and Control System (AWACS)	07	65,200		65,200	U
149	0207418F	Tactical Airborne Control Systems	07	5,767		5,767	U
150	0207423F	Advanced Communications Systems	07				U
152	0207431F	Combat Air Intelligence System Activities	07	5,756		5,756	U
153	0207438F	Theater Battle Management (TBM) C4I	07				U
154	0207444F	Tactical Air Control Party-Mod	07	16,226		16,226	U
155	0207445F	Fighter Tactical Data Link	07				U
156	0207448F	C2ISR Tactical Data Link	07	1,633		1,633	U
157	0207449F	Command and Control (C2) Constellation	07	18,086		18,086	U
158	0207452F	DCAPES	07	15,690		15,690	U
159	0207581F	Joint Surveillance/Target Attack Radar System (JSTARS)	07	24,241		24,241	U
160	0207590F	Seek Eagle	07	22,654		22,654	U
161	0207601F	USAF Modeling and Simulation	07	15,501		15,501	U
162	0207605F	Wargaming and Simulation Centers	07	5,699		5,699	U
163	0207697F	Distributed Training and Exercises	07	4,425		4,425	U
164	0208006F	Mission Planning Systems	07	69,377		69,377	U
165	0208021F	Information Warfare Support	07	7,159		7,159	U

R-1C: FY 2013 President's Budget (Published Version), as of January 31, 2012 at 11:02:29

UNCLASSIFIED

Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2011 Actuals	FY 2012 Base	FY 2012 OCO	FY 2012 Total	S e c
---	-----	----	---	-----	-----	-----	-----	-
166	0208059F	Cyber Command Activities	07	18,039	702		702	U
174	0301400F	Space Superiority Intelligence	07	9,955	8,866		8,866	U
175	0302015F	E-4B National Airborne Operations Center (NAOC)	07	12,105	4,845		4,845	U
176	0303131F	Minimum Essential Emergency Communications Network (MEECN)	07	67,912	43,360		43,360	U
177	0303140F	Information Systems Security Program	07	123,348	91,657		91,657	U
178	0303141F	Global Combat Support System	07	3,376	449		449	U
179	0303150F	Global Command and Control System	07	4,846	3,825		3,825	U
180	0303601F	MILSATCOM Terminals	07	298,736	236,581		236,581	U
182	0304260F	Airborne SIGINT Enterprise	07	159,462	108,248		108,248	U
185	0305099F	Global Air Traffic Management (GATM)	07	5,679	4,604		4,604	U
186	0305103F	Cyber Security Initiative	07	1,961	1,981		1,981	U
187	0305105F	DoD Cyber Crime Center	07	270	282		282	U
188	0305110F	Satellite Control Network (SPACE)	07	25,652	18,143		18,143	U
189	0305111F	Weather Service	07	32,116	30,919		30,919	U
190	0305114F	Air Traffic Control, Approach, and Landing System (ATCALs)	07	26,209	20,644		20,644	U
191	0305116F	Aerial Targets	07	60,574	45,620		45,620	U
194	0305128F	Security and Investigative Activities	07	454	366		366	U
195	0305145F	Arms Control Implementation	07					U
196	0305146F	Defense Joint Counterintelligence Activities	07	40	39		39	U
198	0305164F	NAVSTAR Global Positioning System (User Equipment) (SPACE)	07	155,778	131,832		131,832	U
199	0305165F	NAVSTAR Global Positioning System (Space and Control Segments)	07	33,404	17,704		17,704	U

R-1C: FY 2013 President's Budget (Published Version), as of January 31, 2012 at 11:02:29

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Se c
---	-----	----	---	-----	-----	-----	-
166	0208059F	Cyber Command Activities	07	66,888		66,888	U
174	0301400F	Space Superiority Intelligence	07	12,056		12,056	U
175	0302015F	E-4B National Airborne Operations Center (NAOC)	07	4,159		4,159	U
176	0303131F	Minimum Essential Emergency Communications Network (MEECN)	07	20,124		20,124	U
177	0303140F	Information Systems Security Program	07	69,133		69,133	U
178	0303141F	Global Combat Support System	07	6,512		6,512	U
179	0303150F	Global Command and Control System	07	4,316		4,316	U
180	0303601F	MILSATCOM Terminals	07	107,237		107,237	U
182	0304260F	Airborne SIGINT Enterprise	07	129,106		129,106	U
185	0305099F	Global Air Traffic Management (GATM)	07	4,461		4,461	U
186	0305103F	Cyber Security Initiative	07	2,055		2,055	U
187	0305105F	DoD Cyber Crime Center	07	285		285	U
188	0305110F	Satellite Control Network (SPACE)	07	33,773		33,773	U
189	0305111F	Weather Service	07	29,048		29,048	U
190	0305114F	Air Traffic Control, Approach, and Landing System (ATCALs)	07	43,187		43,187	U
191	0305116F	Aerial Targets	07	50,496		50,496	U
194	0305128F	Security and Investigative Activities	07	354		354	U
195	0305145F	Arms Control Implementation	07	4,000		4,000	U
196	0305146F	Defense Joint Counterintelligence Activities	07	342		342	U
198	0305164F	NAVSTAR Global Positioning System (User Equipment) (SPACE)	07	29,621		29,621	U
199	0305165F	NAVSTAR Global Positioning System (Space and Control Segments)	07	14,335		14,335	U

R-1C: FY 2013 President's Budget (Published Version), as of January 31, 2012 at 11:02:29

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2011 Actuals	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Se c
201	0305173F	Space and Missile Test and Evaluation Center	07	4,270	1,629		1,629	U
202	0305174F	Space Innovation and Development Center	07	2,905	2,952		2,952	U
203	0305182F	Spacelift Range System (SPACE)	07	9,260	9,877		9,877	U
204	0305193F	Intelligence Support to Information Operations (IO)	07	1,248	1,271		1,271	U
205	0305202F	Dragon U-2	07					U
206	0305205F	Endurance Unmanned Aerial Vehicles	07	65,844	45,925	82,000	127,925	U
207	0305206F	Airborne Reconnaissance Systems	07	243,161	103,877		103,877	U
208	0305207F	Manned Reconnaissance Systems	07	15,259	13,049		13,049	U
209	0305208F	Distributed Common Ground/Surface Systems	07	94,272	85,724		85,724	U
210	0305219F	MQ-1 Predator A UAV	07	42,776	11,642		11,642	U
211	0305220F	RQ-4 UAV	07	218,912	423,462		423,462	U
212	0305221F	Network-Centric Collaborative Targeting	07	13,330	7,348		7,348	U
213	0305236F	Common Data Link (CDL)	07					U
214	0305238F	NATO AGS	07					U
215	0305240F	Support to DCGS Enterprise	07					U
216	0305265F	GPS III Space Segment	07	430,132	455,095		455,095	U
217	0305614F	JSpOC Mission System	07	98,726	80,409		80,409	U
218	0305881F	Rapid Cyber Acquisition	07					U
219	0305887F	Intelligence Support to Information Warfare	07	8,994	14,547		14,547	U
220	0305913F	NUDET Detection System (SPACE)	07	71,347	81,989		81,989	U
221	0305940F	Space Situation Awareness Operations	07	40,918	31,956		31,956	U

R-1C: FY 2013 President's Budget (Published Version), as of January 31, 2012 at 11:02:29

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Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2013 Base	FY 2013 OCO	FY 2013 Total	S e c
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201	0305173F	Space and Missile Test and Evaluation Center	07	3,680		3,680	U
202	0305174F	Space Innovation and Development Center	07	2,430		2,430	U
203	0305182F	Spacelift Range System (SPACE)	07	8,760		8,760	U
204	0305193F	Intelligence Support to Information Operations (IO)	07				U
205	0305202F	Dragon U-2	07	23,644		23,644	U
206	0305205F	Endurance Unmanned Aerial Vehicles	07	21,000		21,000	U
207	0305206F	Airborne Reconnaissance Systems	07	96,735		96,735	U
208	0305207F	Manned Reconnaissance Systems	07	13,316		13,316	U
209	0305208F	Distributed Common Ground/Surface Systems	07	63,501		63,501	U
210	0305219F	MQ-1 Predator A UAV	07	9,122		9,122	U
211	0305220F	RQ-4 UAV	07	236,265		236,265	U
212	0305221F	Network-Centric Collaborative Targeting	07	7,367		7,367	U
213	0305236F	Common Data Link (CDL)	07	38,094		38,094	U
214	0305238F	NATO AGS	07	210,109		210,109	U
215	0305240F	Support to DCGS Enterprise	07	24,500		24,500	U
216	0305265F	GPS III Space Segment	07	318,992		318,992	U
217	0305614F	JSpOC Mission System	07	54,645		54,645	U
218	0305881F	Rapid Cyber Acquisition	07	4,007		4,007	U
219	0305887F	Intelligence Support to Information Warfare	07	13,357		13,357	U
220	0305913F	NUDET Detection System (SPACE)	07	64,965		64,965	U
221	0305940F	Space Situation Awareness Operations	07	19,586		19,586	U

R-1C: FY 2013 President's Budget (Published Version), as of January 31, 2012 at 11:02:29

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Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2011 Actuals	FY 2012 Base	FY 2012 OCO	FY 2012 Total	S e c
---	-----	----	---	-----	-----	-----	-----	-
222	0307141F	Information Operations Technology Integration & Tool Development	07	21,143	23,920		23,920	U
223	0308699F	Shared Early Warning (SEW)	07	2,858	1,663		1,663	U
224	0401115F	C-130 Airlift Squadron	07	42,067	6,509		6,509	U
225	0401119F	C-5 Airlift Squadrons (IF)	07	55,071	12,941		12,941	U
226	0401130F	C-17 Aircraft (IF)	07	156,943	93,777		93,777	U
227	0401132F	C-130J Program	07	25,943	39,537		39,537	U
228	0401134F	Large Aircraft IR Countermeasures (LAIRCM)	07	17,139	7,438		7,438	U
229	0401139F	Light Mobility Aircraft (LiMA)	07					U
230	0401218F	KC-135s	07	19,887	6,161		6,161	U
231	0401219F	KC-10s	07	41,456	30,868		30,868	U
232	0401314F	Operational Support Airlift	07	4,819	42,591		42,591	U
233	0401315F	C-STOL Aircraft	07	1,239				U
234	0408011F	Special Tactics / Combat Control	07	17,557	5,155		5,155	U
235	0702207F	Depot Maintenance (Non-IF)	07	1,462	1,531		1,531	U
236	0708012F	Logistics Support Activities	07		944		944	U
237	0708610F	Logistics Information Technology (LOGIT)	07	217,584	139,885		139,885	U
238	0708611F	Support Systems Development	07	40,668	50,990		50,990	U
239	0801711F	Recruiting Activities	07	5,074				U
240	0804743F	Other Flight Training	07	644	322		322	U
241	0804757F	Joint National Training Center	07	9	11		11	U
242	0808716F	Other Personnel Activities	07	112	113		113	U

R-1C: FY 2013 President's Budget (Published Version), as of January 31, 2012 at 11:02:29

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2013 Base	FY 2013 OCO	FY 2013 Total	S e c
---	-----	----	---	-----	-----	-----	-
222	0307141F	Information Operations Technology Integration & Tool Development	07				U
223	0308699F	Shared Early Warning (SEW)	07	1,175		1,175	U
224	0401115F	C-130 Airlift Squadron	07	5,000		5,000	U
225	0401119F	C-5 Airlift Squadrons (IF)	07	35,115		35,115	U
226	0401130F	C-17 Aircraft (IF)	07	99,225		99,225	U
227	0401132F	C-130J Program	07	30,652		30,652	U
228	0401134F	Large Aircraft IR Countermeasures (LAIRCM)	07	7,758		7,758	U
229	0401139F	Light Mobility Aircraft (LiMA)	07	100		100	U
230	0401218F	KC-135s	07				U
231	0401219F	KC-10s	07	24,022		24,022	U
232	0401314F	Operational Support Airlift	07	7,471		7,471	U
233	0401315F	C-STOL Aircraft	07				U
234	0408011F	Special Tactics / Combat Control	07	4,984		4,984	U
235	0702207F	Depot Maintenance (Non-IF)	07	1,588		1,588	U
236	0708012F	Logistics Support Activities	07	577		577	U
237	0708610F	Logistics Information Technology (LOGIT)	07	119,327		119,327	U
238	0708611F	Support Systems Development	07	15,873		15,873	U
239	0801711F	Recruiting Activities	07				U
240	0804743F	Other Flight Training	07	349		349	U
241	0804757F	Joint National Training Center	07				U
242	0808716F	Other Personnel Activities	07	117		117	U

R-1C: FY 2013 President's Budget (Published Version), as of January 31, 2012 at 11:02:29

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Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2011 Actuals	FY 2012 Base	FY 2012 OCO	FY 2012 Total	S e c
243	0901202F	Joint Personnel Recovery Agency	07	5,899	2,483		2,483	U
244	0901218F	Civilian Compensation Program	07	7,771	1,508		1,508	U
245	0901220F	Personnel Administration	07	10,765	1,041		1,041	U
246	0901226F	Air Force Studies and Analysis Agency	07		928		928	U
247	0901279F	Facilities Operation - Administrative	07		12,118		12,118	U
248	0901538F	Financial Management Information Systems Development	07	48,087	76,207		76,207	U
249	0902998F	Management HQ - ADP Support (AF)	07		299		299	U
9999	9999999999	Classified Programs		12,967,171	11,899,828	69,000	11,968,828	U
		Operational Systems Development		19,115,999	17,457,590	201,000	17,658,590	
Total Research, Development, Test & Eval, AF				27,421,360	26,480,201	259,600	26,739,801	

UNCLASSIFIED

Department of the Air Force
 FY 2013 President's Budget (Published Version)
 Exhibit R-1 FY 2013 President's Budget (Published Version)
 Total Obligational Authority
 (Dollars in Thousands)

31 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Se
243	0901202F	Joint Personnel Recovery Agency	07	2,018		2,018	U
244	0901218F	Civilian Compensation Program	07	1,561		1,561	U
245	0901220F	Personnel Administration	07	7,634		7,634	U
246	0901226F	Air Force Studies and Analysis Agency	07	1,175		1,175	U
247	0901279F	Facilities Operation - Administrative	07	3,491		3,491	U
248	0901538F	Financial Management Information Systems Development	07	100,160		100,160	U
249	0902998F	Management HQ - ADP Support (AF)	07				U
9999	9999999999	Classified Programs		11,172,183	53,150	11,225,333	U
		Operational Systems Development		15,867,972	53,150	15,921,122	
Total Research, Development, Test & Eval, AF				25,428,046	53,150	25,481,196	

UNCLASSIFIED

Air Force • President's Budget Submission FY 2013 • RDT&E Program

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

*Budget Activity 07: Operational Systems Development
Appropriation 3600: Research, Development, Test & Evaluation, Air Force*

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
112	07	0603423F	Global Positioning System III - Operational Control Segment.....	Volume 3A - 1
113	07	0604263F	CVLSP.....	Volume 3A - 15
114	07	0605018F	Air Force Integrated Personnel and Pay System (AF-IPPS).....	Volume 3A - 19
115	07	0605024F	Anti-Tamper Technology Executive Agent.....	Volume 3A - 27
117	07	0101113F	B-52 SQUADRONS.....	Volume 3A - 33
118	07	0101122F	AIR LAUNCHED CRUISE MISSILE.....	Volume 3A - 67
119	07	0101126F	B-1B SQUADRONS.....	Volume 3A - 73
120	07	0101127F	B-2 SQUADRONS.....	Volume 3A - 79
121	07	0101313F	STRAT WAR PLANNING SYS - USSTRATCOM.....	Volume 3A - 105
124	07	0102326F	REGION/ SECTOR OPERATIONS CONTROL CENTER.....	Volume 3A - 125
125	07	0102823F	STRAT AEROSPACE INTEL SYS ACTIVITIES.....	Volume 3A - 131
126	07	0203761F	Warfighter Rapid Acquisition Program.....	Volume 3A - 135
127	07	0205219F	MQ-9 Development and Fielding.....	Volume 3A - 141
128	07	0207040F	Multi-Platform Electronics.....	Volume 3A - 155
129	07	0207131F	A-10 SQUADRONS.....	Volume 3A - 159

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget Submission FY 2013 • RDT&E Program

***Budget Activity 07: Operational Systems Development
Appropriation 3600: Research, Development, Test & Evaluation, Air Force***

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
130	07	0207133F	F-16 SQUADRONS.....	Volume 3A - 165
131	07	0207134F	F-15 PROGRAMS.....	Volume 3A - 177
132	07	0207136F	Manned Destructive Suppression.....	Volume 3A - 193
133	07	0207138F	F-22 SQUADRONS.....	Volume 3A - 199
134	07	0207142F	Joint Strike Fighter Squadrons.....	Volume 3A - 215
135	07	0207161F	Tactical AIM Missiles.....	Volume 3A - 227
136	07	0207163F	Advanced Medium Range Air-to-Air Missile.....	Volume 3A - 233
137	07	0207170F	JHMCS.....	Volume 3A - 241
138	07	0207224F	COMBAT RESCUE AND RECOVERY.....	Volume 3A - 247
139	07	0207227F	Pararescue (Guardian Angel Weapon System).....	Volume 3A - 255
140	07	0207247F	Air Force TENCAP.....	Volume 3A - 261
141	07	0207249F	Precision Attack Systems.....	Volume 3A - 269
142	07	0207253F	Compass Call.....	Volume 3A - 273
143	07	0207268F	Aircraft Engine Component Improvement Program (CIP).....	Volume 3A - 279
144	07	0207277F	ISR Innovations.....	Volume 3A - 291
145	07	0207325F	Joint Air-to-Surface Standoff Missile (JASSM).....	Volume 3A - 295
146	07	0207410F	Air and Space Operations Center Weapon System (AOC WS).....	Volume 3A - 313
147	07	0207412F	Modular Control System.....	Volume 3A - 339

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget Submission FY 2013 • RDT&E Program

***Budget Activity 07: Operational Systems Development
Appropriation 3600: Research, Development, Test & Evaluation, Air Force***

.....

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
148	07	0207417F	Airborne Warning and Control System (AWACS).....	Volume 3A - 353
149	07	0207418F	TAC AIRBORNE CONTROL SYSTEM.....	Volume 3A - 365
150	07	0207423F	Advanced Communications Systems.....	Volume 3A - 373
152	07	0207431F	Combat Air Intelligence System.....	Volume 3A - 387
153	07	0207438F	Theater Battle Management (TBM) C4I.....	Volume 3A - 397
154	07	0207444F	Tactical Air Control Party Modernization.....	Volume 3A - 403
155	07	0207445F	FIGHTER TACTICAL DATA LINK.....	Volume 3A - 411
156	07	0207448F	C2ISR Tactical Data Link.....	Volume 3A - 417
157	07	0207449F	C2 Constellation.....	Volume 3A - 423
158	07	0207452F	DCAPES.....	Volume 3A - 443
159	07	0207581F	JOINT STARS.....	Volume 3A - 449
160	07	0207590F	Seek Eagle.....	Volume 3A - 461
161	07	0207601F	USAF Modeling and Simulation.....	Volume 3A - 469
162	07	0207605F	Wargaming and Simulation Centers.....	Volume 3A - 491
163	07	0207697F	Wargaming Operations (Distributed Training).....	Volume 3A - 497
164	07	0208006F	Mission Planning Systems.....	Volume 3A - 505
165	07	0208021F	Information Warfare Support.....	Volume 3A - 527
166	07	0208059F	CYBER Command.....	Volume 3A - 533

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget Submission FY 2013 • RDT&E Program

***Budget Activity 07: Operational Systems Development
Appropriation 3600: Research, Development, Test & Evaluation, Air Force***

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
174	07	0301400F	SPACE SUPERIORITY INTELLIGENCE.....	Volume 3B - 1
175	07	0302015F	E-4B NATIONAL AIRBORNE OPERATIONS CENTER.....	Volume 3B - 11
176	07	0303131F	Minimum Essential Emergency Communications Network (MEECN).....	Volume 3B - 19
177	07	0303140F	Information Systems Security Program.....	Volume 3B - 43
178	07	0303141F	Global Combat Support System (GCSS).....	Volume 3B - 71
179	07	0303150F	WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM.....	Volume 3B - 79
180	07	0303601F	MILSATCOM Terminals.....	Volume 3B - 85
182	07	0304260F	Airborne SIGINT Enterprise (JMIP).....	Volume 3B - 95
185	07	0305099F	Global Air Traffic Management (GATM).....	Volume 3B - 123
186	07	0305103F	Cyber Security Initiative.....	Volume 3B - 129
187	07	0305105F	DoD Cyber Crime Center.....	Volume 3B - 135
188	07	0305110F	Satellite Control Network.....	Volume 3B - 139
189	07	0305111F	WEATHER SERVICE.....	Volume 3B - 145
190	07	0305114F	Air Traffic Control/Approach/Landing System (ATCAL).....	Volume 3B - 151
191	07	0305116F	AERIAL TARGETS.....	Volume 3B - 157
194	07	0305128F	Security And Investigative Activities.....	Volume 3B - 171
195	07	0305145F	ARMS CONTROL IMPLEMENTATION.....	Volume 3B - 177
198	07	0305164F	NAVSTAR Global Positioning System User Equipment Space.....	Volume 3B - 181

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget Submission FY 2013 • RDT&E Program

Budget Activity 07: Operational Systems Development
Appropriation 3600: Research, Development, Test & Evaluation, Air Force

.....

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
199	07	0305165F	NAVSTAR GPS (Space).....	Volume 3B - 187
201	07	0305173F	SPACE & MISSILE TEST & EVALUATION CENTER.....	Volume 3B - 195
202	07	0305174F	SPACE WARFARE CENTER.....	Volume 3B - 201
203	07	0305182F	Spacelift Range System.....	Volume 3B - 207
204	07	0305193F	INTEL SPT TO INFO OPS.....	Volume 3B - 215
205	07	0305202F	Dragon U-2 (JMIP).....	Volume 3B - 221
206	07	0305205F	Endurance Unmanned Aerial Vehicles.....	Volume 3B - 227
207	07	0305206F	Airborne Reconnaissance Systems.....	Volume 3B - 247
208	07	0305207F	Manned Reconnaissance System.....	Volume 3B - 283
209	07	0305208F	Distributed Common Ground Systems.....	Volume 3B - 289
210	07	0305219F	PREDATOR DEVELOPMENT/FIELDING.....	Volume 3B - 311
211	07	0305220F	GLOBAL HAWK DEVELOPMENT/FIELDING.....	Volume 3B - 321
212	07	0305221F	Network Centric Collaborative Targeting.....	Volume 3B - 367
213	07	0305236F	CDL.....	Volume 3B - 373
214	07	0305238F	NATO AGS.....	Volume 3B - 379
215	07	0305240F	Support to DCGS Enterprise.....	Volume 3B - 385
216	07	0305265F	GPS III Space Segment.....	Volume 3B - 395
217	07	0305614F	JSpOC Mission System.....	Volume 3B - 409

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget Submission FY 2013 • RDT&E Program

***Budget Activity 07: Operational Systems Development
Appropriation 3600: Research, Development, Test & Evaluation, Air Force***

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
218	07	0305881F	RAPID CYBER ACQUISITION.....	Volume 3B - 427
219	07	0305887F	Electronic Combat Intelligence Support.....	Volume 3B - 433
220	07	0305913F	NUDET Detection System (Space).....	Volume 3B - 439
221	07	0305940F	Space Situational Awareness Operations.....	Volume 3B - 445
222	07	0307141F	NASS, IO TECH INTEGRATION & TOOL DEV.....	Volume 3B - 455
223	07	0308699F	Shared Early Warning System.....	Volume 3B - 461
224	07	0401115F	C-130 AIRLIFT SQUADRONS.....	Volume 3B - 467
225	07	0401119F	C-5 Airlift Squadrons.....	Volume 3B - 481
226	07	0401130F	C-17 Aircraft.....	Volume 3B - 501
227	07	0401132F	C-130J PROGRAM.....	Volume 3B - 509
228	07	0401134F	Large Aircraft InfraRed Counter Measures (LAIRCM).....	Volume 3B - 525
229	07	0401139F	LIGHT MOBILITY AIRCRAFT (LIMA).....	Volume 3B - 533
230	07	0401218F	KC-135s.....	Volume 3B - 535
231	07	0401219F	KC-10S.....	Volume 3B - 539
232	07	0401314F	OPERATIONAL SUPPORT AIRLIFT.....	Volume 3B - 549
233	07	0401315F	C-STOL AIRCRAFT.....	Volume 3B - 559
234	07	0408011F	SPECIAL TACTICS/COMBAT CONTROL.....	Volume 3B - 561
235	07	0702207F	Depot Maintenance (Non-IF).....	Volume 3B - 569

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget Submission FY 2013 • RDT&E Program

***Budget Activity 07: Operational Systems Development
Appropriation 3600: Research, Development, Test & Evaluation, Air Force***

.....

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
236	07	0708012F	Logistic Support Activities.....	Volume 3B - 577
237	07	0708610F	Logistics Information Technology (LOGIT).....	Volume 3B - 583
238	07	0708611F	Support Systems Development.....	Volume 3B - 591
239	07	0801711F	RECRUITING ACTIVITIES.....	Volume 3B - 609
240	07	0804743F	OTHER FLIGHT TRAINING.....	Volume 3B - 613
241	07	0804757F	JOINT NATIONAL TRAINING CENTER.....	Volume 3B - 617
242	07	0808716F	OTHER PERSONNEL ACTIVITIES.....	Volume 3B - 619
243	07	0901202F	JOINT PERSONNEL RECOVERY AGENCY (JPRA).....	Volume 3B - 623
244	07	0901218F	Civilian Compensation Program.....	Volume 3B - 629
245	07	0901220F	PERSONNEL ADMINISTRATION.....	Volume 3B - 633
246	07	0901226F	AF STUDIES AND ANALYSIS AGENCY.....	Volume 3B - 639
247	07	0901279F	Facilities Operations - Administrative.....	Volume 3B - 643
248	07	0901538F	Financial Management Information Systems Development (FMISD).....	Volume 3B - 647
249	07	0902998F	MANAGEMENT HQ - ADP SUPPORT (AF).....	Volume 3B - 665

UNCLASSIFIED

UNCLASSIFIED

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UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget Submission FY 2013 • RDT&E Program

Master 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	129	07.....	Volume 3A - 159
AERIAL TARGETS	0305116F	191	07.....	Volume 3B - 157
AF STUDIES AND ANALYSIS AGENCY	0901226F	246	07.....	Volume 3B - 639
AIR LAUNCHED CRUISE MISSILE	0101122F	118	07.....	Volume 3A - 67
ARMS CONTROL IMPLEMENTATION	0305145F	195	07.....	Volume 3B - 177
Advanced Communications Systems	0207423F	150	07.....	Volume 3A - 373
Advanced Medium Range Air-to-Air Missile	0207163F	136	07.....	Volume 3A - 233
Air Force Integrated Personnel and Pay System (AF-IPPS)	0605018F	114	07.....	Volume 3A - 19
Air Force TENCAP	0207247F	140	07.....	Volume 3A - 261
Air Traffic Control/Approach/Landing System (ATCALs)	0305114F	190	07.....	Volume 3B - 151
Air and Space Operations Center Weapon System (AOC WS)	0207410F	146	07.....	Volume 3A - 313
Airborne Reconnaissance Systems	0305206F	207	07.....	Volume 3B - 247
Airborne SIGINT Enterprise (JMIP)	0304260F	182	07.....	Volume 3B - 95
Airborne Warning and Control System (AWACS)	0207417F	148	07.....	Volume 3A - 353
Aircraft Engine Component Improvement Program (CIP)	0207268F	143	07.....	Volume 3A - 279
Anti-Tamper Technology Executive Agent	0605024F	115	07.....	Volume 3A - 27
B-1B SQUADRONS	0101126F	119	07.....	Volume 3A - 73

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget Submission FY 2013 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
B-2 SQUADRONS	0101127F	120	07.....Volume 3A - 79	
B-52 SQUADRONS	0101113F	117	07.....Volume 3A - 33	
C-130 AIRLIFT SQUADRONS	0401115F	224	07.....Volume 3B - 467	
C-130J PROGRAM	0401132F	227	07.....Volume 3B - 509	
C-17 Aircraft	0401130F	226	07.....Volume 3B - 501	
C-5 Airlift Squadrons	0401119F	225	07.....Volume 3B - 481	
C-STOL AIRCRAFT	0401315F	233	07.....Volume 3B - 559	
C2 Constellation	0207449F	157	07.....Volume 3A - 423	
C2ISR Tactical Data Link	0207448F	156	07.....Volume 3A - 417	
CDL	0305236F	213	07.....Volume 3B - 373	
COMBAT RESCUE AND RECOVERY	0207224F	138	07.....Volume 3A - 247	
CVLSP	0604263F	113	07.....Volume 3A - 15	
CYBER Command	0208059F	166	07.....Volume 3A - 533	
Civilian Compensation Program	0901218F	244	07.....Volume 3B - 629	
Combat Air Intelligence System	0207431F	152	07.....Volume 3A - 387	
Compass Call	0207253F	142	07.....Volume 3A - 273	
Cyber Security Initiative	0305103F	186	07.....Volume 3B - 129	
DCAPES	0207452F	158	07.....Volume 3A - 443	
Depot Maintenance (Non-IF)	0702207F	235	07.....Volume 3B - 569	

UNCLASSIFIED

UNCLASSIFIED

Air Force • President's Budget Submission FY 2013 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Distributed Common Ground Systems	0305208F	209	07.....	Volume 3B - 289
DoD Cyber Crime Center	0305105F	187	07.....	Volume 3B - 135
Dragon U-2 (JMIP)	0305202F	205	07.....	Volume 3B - 221
E-4B NATIONAL AIRBORNE OPERATIONS CENTER	0302015F	175	07.....	Volume 3B - 11
Electronic Combat Intelligence Support	0305887F	219	07.....	Volume 3B - 433
Endurance Unmanned Aerial Vehicles	0305205F	206	07.....	Volume 3B - 227
F-15 PROGRAMS	0207134F	131	07.....	Volume 3A - 177
F-16 SQUADRONS	0207133F	130	07.....	Volume 3A - 165
F-22 SQUADRONS	0207138F	133	07.....	Volume 3A - 199
FIGHTER TACTICAL DATA LINK	0207445F	155	07.....	Volume 3A - 411
Facilities Operations - Administrative	0901279F	247	07.....	Volume 3B - 643
Financial Management Information Systems Development (FMISD)	0901538F	248	07.....	Volume 3B - 647
GLOBAL HAWK DEVELOPMENT/FIELDING	0305220F	211	07.....	Volume 3B - 321
GPS III Space Segment	0305265F	216	07.....	Volume 3B - 395
Global Air Traffic Management (GATM)	0305099F	185	07.....	Volume 3B - 123
Global Combat Support System (GCSS)	0303141F	178	07.....	Volume 3B - 71
Global Positioning System III - Operational Control Segment	0603423F	112	07.....	Volume 3A - 1
INTEL SPT TO INFO OPS	0305193F	204	07.....	Volume 3B - 215
ISR Innovations	0207277F	144	07.....	Volume 3A - 291

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Air Force • President's Budget Submission FY 2013 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Information Systems Security Program	0303140F	177	07.....Volume 3B - 43	
Information Warfare Support	0208021F	165	07.....Volume 3A - 527	
JHMCS	0207170F	137	07.....Volume 3A - 241	
JOINT NATIONAL TRAINING CENTER	0804757F	241	07.....Volume 3B - 617	
JOINT PERSONNEL RECOVERY AGENCY (JPRA)	0901202F	243	07.....Volume 3B - 623	
JOINT STARS	0207581F	159	07.....Volume 3A - 449	
JSpOC Mission System	0305614F	217	07.....Volume 3B - 409	
Joint Air-to-Surface Standoff Missile (JASSM)	0207325F	145	07.....Volume 3A - 295	
Joint Strike Fighter Squadrons	0207142F	134	07.....Volume 3A - 215	
KC-10S	0401219F	231	07.....Volume 3B - 539	
KC-135s	0401218F	230	07.....Volume 3B - 535	
LIGHT MOBILITY AIRCRAFT (LIMA)	0401139F	229	07.....Volume 3B - 533	
Large Aircraft InfraRed Counter Measures (LAIRCM)	0401134F	228	07.....Volume 3B - 525	
Logistic Support Activities	0708012F	236	07.....Volume 3B - 577	
Logistics Information Technology (LOGIT)	0708610F	237	07.....Volume 3B - 583	
MANAGEMENT HQ - ADP SUPPORT (AF)	0902998F	249	07.....Volume 3B - 665	
MILSATCOM Terminals	0303601F	180	07.....Volume 3B - 85	
MQ-9 Development and Fielding	0205219F	127	07.....Volume 3A - 141	
Manned Destructive Suppression	0207136F	132	07.....Volume 3A - 193	

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UNCLASSIFIED

Air Force • President's Budget Submission FY 2013 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Manned Reconnaissance System	0305207F	208	07.....	Volume 3B - 283
Minimum Essential Emergency Communications Network (MEECN)	0303131F	176	07.....	Volume 3B - 19
Mission Planning Systems	0208006F	164	07.....	Volume 3A - 505
Modular Control System	0207412F	147	07.....	Volume 3A - 339
Multi-Platform Electronics	0207040F	128	07.....	Volume 3A - 155
NASS, IO TECH INTEGRATION & TOOL DEV	0307141F	222	07.....	Volume 3B - 455
NATO AGS	0305238F	214	07.....	Volume 3B - 379
NAVSTAR GPS (Space)	0305165F	199	07.....	Volume 3B - 187
NAVSTAR Global Positioning System User Equipment Space	0305164F	198	07.....	Volume 3B - 181
NUDET Detection System (Space)	0305913F	220	07.....	Volume 3B - 439
Network Centric Collaborative Targeting	0305221F	212	07.....	Volume 3B - 367
OPERATIONAL SUPPORT AIRLIFT	0401314F	232	07.....	Volume 3B - 549
OTHER FLIGHT TRAINING	0804743F	240	07.....	Volume 3B - 613
OTHER PERSONNEL ACTIVITIES	0808716F	242	07.....	Volume 3B - 619
PERSONNEL ADMINISTRATION	0901220F	245	07.....	Volume 3B - 633
PREDATOR DEVELOPMENT/FIELDING	0305219F	210	07.....	Volume 3B - 311
Pararescue (Guardian Angel Weapon System)	0207227F	139	07.....	Volume 3A - 255
Precision Attack Systems	0207249F	141	07.....	Volume 3A - 269
RAPID CYBER ACQUISITION	0305881F	218	07.....	Volume 3B - 427

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Air Force • President's Budget Submission FY 2013 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
RECRUITING ACTIVITIES	0801711F	239	07.....Volume 3B - 609	
REGION/ SECTOR OPERATIONS CONTROL CENTER	0102326F	124	07.....Volume 3A - 125	
SPACE & MISSILE TEST & EVALUATION CENTER	0305173F	201	07.....Volume 3B - 195	
SPACE SUPERIORITY INTELLIGENCE	0301400F	174	07.....Volume 3B - 1	
SPACE WARFARE CENTER	0305174F	202	07.....Volume 3B - 201	
SPECIAL TACTICS/COMBAT CONTROL	0408011F	234	07.....Volume 3B - 561	
STRAT AEROSPACE INTEL SYS ACTIVITIES	0102823F	125	07.....Volume 3A - 131	
STRAT WAR PLANNING SYS - USSTRATCOM	0101313F	121	07.....Volume 3A - 105	
Satellite Control Network	0305110F	188	07.....Volume 3B - 139	
Security And Investigative Activities	0305128F	194	07.....Volume 3B - 171	
Seek Eagle	0207590F	160	07.....Volume 3A - 461	
Shared Early Warning System	0308699F	223	07.....Volume 3B - 461	
Space Situational Awareness Operations	0305940F	221	07.....Volume 3B - 445	
Spacelift Range System	0305182F	203	07.....Volume 3B - 207	
Support Systems Development	0708611F	238	07.....Volume 3B - 591	
Support to DCGS Enterprise	0305240F	215	07.....Volume 3B - 385	
TAC AIRBORNE CONTROL SYSTEM	0207418F	149	07.....Volume 3A - 365	
Tactical AIM Missiles	0207161F	135	07.....Volume 3A - 227	
Tactical Air Control Party Modernization	0207444F	154	07.....Volume 3A - 403	

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Air Force • President's Budget Submission FY 2013 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Theater Battle Management (TBM) C4I	0207438F	153	07.....	Volume 3A - 397
USAF Modeling and Simulation	0207601F	161	07.....	Volume 3A - 469
WEATHER SERVICE	0305111F	189	07.....	Volume 3B - 145
WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM	0303150F	179	07.....	Volume 3B - 79
Warfighter Rapid Acquisition Program	0203761F	126	07.....	Volume 3A - 135
Wargaming Operations (Distributed Training)	0207697F	163	07.....	Volume 3A - 497
Wargaming and Simulation Centers	0207605F	162	07.....	Volume 3A - 491

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**In the FY 2013 President's Budget Submission
RDT&E Volume 3 Exhibits in Budget Activity 7**

are split into two books:

Volume 3 – A

Volume 3 – B

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

0101314F	NIGHT FIRST-USSSTRATCOM
0101815F	ADVANCED STRATEGIC PROGRAM
0207424F	EVALUATION AND ANALYSIS PROGRAM
0208161F	SPECIAL EVALUATION SYSTEM
0208162F	ADVANCED TECHNOLOGY PROGRAM
0301310F	NATIONAL AIR INTELLIGENCE CENTER
0301314F	COBRA BALL
0301315F	MISSILE AND SPACE TECHICAL COLLECTION
0301324F	FOREST GREEN
0301386F	GDIP COLLECTION MANAGEMENT
0304111F	SPECIAL ACTIVITES
0304311F	SELECTED ACTIVITIES
0304348F	ADVANCED GEOSPATIAL INTELLIGENCE(AGI)
0305124F	SPECIAL APPLICATIONS PROGRAM
0305159F	DEFENSE RECONNAISSANCE SUPPORT ACTIVITIES
0305172F	COMBINED ADVANCED APPLICATIONS
0605798F	ANALYSIS SUPPORT GROUP
0305127F	FOREIGN COUNTERINTELLIGENCE ACTIVITES

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PROGRAM ELEMENT COMPARISON SUMMARY

PROGRAM ELEMENT (BY BUDGET ACTIVITY)

BUDGET ACTIVITY #2: APPLIED RESEARCH (Volume 1)

0602202F

HUMAN EFFECTIVENESS APPLIED RESEARCH

Remarks

In FY13, Measurement and Signature Intelligence (MASINT) moves from Project 627184 to this Project to better align the efforts. Also in FY13, the efforts in this Project move into Projects 625328, 625329, and 627757 to better align the efforts.

0602602F

CONVENTIONAL MUNITIONS

In FY13, changes in funding are due to higher DoD priorities.

0602890F

HIGH ENERGY LASER RESEARCH

In FY13, reductions due to higher Department of Defense priorities.

**BUDGET ACTIVITY #3: ADVANCED TECHNOLOGY DEVELOPMENT
(Volume 1)**

0603456F

HUMAN EFFECT. ADV TECH DEVELOPMENT

In FY13, Project 635326, Performance Enhancement Demonstration, moves to Project 635324, Human Dynamics and Terrain Demonstration, to better align efforts

0603601F

CONVENTIONAL WEAPONS TECHNOLOGY

In FY13, changes are due to higher DoD priorities.

**BUDGET ACTIVITY #4: ADVANCED COMPONENT DEVELOPMENT AND
PROTOTYPE (Volume 2)**

0305164F

NAVSTAR GLO POS SYS(USER EQ)(SPACE)

In FY13, Military GPS User Equipment (MGUE) funding is transferred to this project in PE 0305164F.

0603851F

ICBM - DEM/VAL

In FY13, Project 641025 Ground Based Strategic Deterrence (GBSD) includes efforts to begin Materiel Solution Analysis and the Analysis of Alternatives (AoA) for a follow-on to the Minuteman III Intercontinental Ballistic Missile (ICBM). This is not a new start, efforts previously funded under project 644209 Long Range Planning.

0604330F

JNT DUAL ROLE AIR DOMINANCE MISSILE

In FY13, PE 0604330F, Joint Dual-Role Air Dominance Missile (JDRADM) was terminated.

0604857F

OPERATIONALLY RESPONSIVE SPACE

In FY13, 0604857F, ORS, efforts are being descoped, and the remaining efforts transferred to other space programs in order to better integrate the ORS concept into the entire space architecture.

PROGRAM ELEMENT (BY BUDGET ACTIVITY)

PROGRAM ELEMENT COMPARISON SUMMARY

**BUDGET ACTIVITY #5: SYSTEM DEVELOPMENT AND
DEMONSTRATION (SDD) (Volume 2)**

0101125F	NUCLEAR WEAPONS MODERNIZATION	In FY13, LRSO efforts were transferred from PE 0101125F, Nuclear Weapon Modernization, project number 657008, to PE 0604932F, Long Range Standoff Weapon, project number 657011.
0305230F	ISR FOR IRREGULAR WARFARE	In FY13, 654673, Distributed Mission Training includes new start efforts.
0401138F	C-27J AIRLIFT SQUADRONS	In FY13, Project 655259, C-27J, is terminated.
0604270F	ELECTRONIC WARFARE DEVELOPMENT	In FY13, Project 657004, MALD-J Increment II is terminated.
0604429F	AIRBORNE ELECTRONIC ATTACK	In FY13, Project 655193, Electronic Attack Pod, was terminated.
0604617F	AGILE COMBAT SUPPORT	In FY13, Project 652895 contains one New Start effort for Airfield Damage Repair Unexploded Ordnance (UXO) Removal.
0604706F	LIFE SUPPORT SYSTEMS	In FY13, Project 65412A, Life Support Systems, includes new starts for Cold Weather Aviation System (CWAS) and Integrated Aircrew Body Armor System programs.
0604851F	ICBM - EMD	In FY13, Project Number 657006, ICBM EMD: Fuze Support, was transferred to PE 0604933F in order to distinguish the effort as a pre-ACAT I program. In FY13, Project Number 655037, Support Equipment, includes the Transporter Erector (TE) Replacement new start effort. In FY13, Project Number 657010, Operational Equipment includes the Solid Rocket Motor Modernization new start to begin requirements definition to support a future production program.
0604932F	LONG RANGE STANDOFF WEAPON	In FY13, LRSO efforts were transferred from PE 0101125F, Nuclear Weapon Modernization, project number 657008 to PE 0604932F, Long Range Standoff Weapon, project number 657011, in order to support LRSO development.
0604933F	ICBM FUZE MODERNIZATION	In FY13, the fuze efforts in Project Number 655082, ICBM Fuze Support, were transferred from PE 0604851F ICBM - EMD, in order to distinguish the effort as an pre-ACAT I program.
0605213F	F-22 INCREMENT 3.2B	In FY13, this is not a New Start. A separate Program Element has been created for Increment 3.2B in support of milestone B preparations. All Increment 3.2B efforts and funding prior to FY13 continue to be shown in this F-22 baseline documentation.

PROGRAM ELEMENT (BY BUDGET ACTIVITY)

PROGRAM ELEMENT COMPARISON SUMMARY

BUDGET ACTIVITY #7: OPERATIONAL SYSTEM DEVELOPMENT
(Volume 3)

0101113F	B-52 SQUADRON	<p>In FY13, SEPARATE BPACs HAVE BEEN ESTABLISHED AS FOLLOWS: 675039 B-52 MODERNIZATION 675048 1760 INTERNAL WEAPONS BAY UPGRADE (IWBU) 675049 MODE S/5 IFF 675050 CONECT 675051 B-52 ANTI-SKID</p> <p>In FY13, The EHF and SR2 programs are terminated for higher DoD priorities.</p>
0101127F	B-2 SQUADRONS	<p>In FY13, B-2 Defensive Management System (DMS) funding in PE 0101127F project 676023 was transferred to PE 0605931F, project 653844.</p>
0101313F	STRAT WAR PLANNING SYS - USSTRATCOM	<p>In FY13, 675282, Joint Navigation Warfare Center, efforts transferred to PE 0105921F, Service Support to STRATCOM Space Activities (O&M).</p>
0207133F	F-16 SQUADRONS	<p>In FY13, Presidents Budget(PB) separates this combined effort into a separate Legacy SLEP for structures upgrades and separate Combat Avionics Programmed Extension Suite (CAPES) for avionics modernization upgrades.</p>
0207134F	F-15E SQUADRONS	<p>In FY13, the F-15 program, Project 670131 has one FY 2013 new start, the F-15 Eagle Passive/Active Warning Survivability System (EPAWSS).</p>
0207138F	F-22A SQUADRONS	<p>In FY13, a separate Program Element has been created for Increment 3.2B in support of milestone B preparations. All Increment 3.2B efforts and funding prior to FY13 continue to be shown in this F-22 baseline documentation.</p>
0207325F	JOINT AIR-TO-SURFACE STANDOFF MISSIL	<p>In FY13, BPAC 674515 is not an FY13 New Start. Efforts previously accomplished in BPAC 5356.</p>
0207423F	ADV COMM SYS	<p>In FY13, Project number 675189, C2ISR JTRS Integration, was terminated.</p>
0207438F	THEATER BATTLE MANAGEMENT (TBM) C4I	<p>In FY13, Project Number 674802, Deliberate and Crisis Action Planning and Execution Segment (DCAPES), was transferred to PE 0207452F DCAPES, Project Number 674802, Deliberate and Crisis Action Planning and Execution Segment (DCAPES), in order to provide clarity to the effort by providing a singular PE and Project Number.</p>

PROGRAM ELEMENT (BY BUDGET ACTIVITY)	PROGRAM ELEMENT COMPARISON SUMMARY	
0207452F	DCAPES	In FY13, Project Number 674802, Deliberate and Crisis Action Planning and Execution Segment (DCAPES), efforts transferred from PE 0207438, Theater Battle Management (TBM) C4I, Project Number 674802, Deliberate and Crisis Action Planning and Execution Segment (DCAPES), in order to provide clarity to the effort by providing a singular PE and Project Number.
0207601F	USAF MODELING AND SIMULATION	In FY13, Project 4991, Accelerated Acquisition was terminated.
0208006F	MISSION PLANNING SYSTEMS	In FY13, Project 675838 was renamed Mission Planning Systems Development from Mission Planning Systems. Project 675302 was renamed Precision Aerial Delivery Systems (PADS) from Mobility Air Forces (MAF) Planning Systems in FY13. Project 675380 was renamed Mission Planning Systems (MPS) Modernization from Combat Air Forces (CAF) Planning Systems in FY13.
0208021F	INFORMATION WARFARE SUPPORT	In FY13, 670374, Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt, includes new start efforts.
0208059F	CYBER COMMAND ACTIVITIES	In FY13, 676002, Cyber Systems Modernization, efforts were transferred from PE 0307141F, NASS, IO Tech Integration & Tool Dev, 674871, Information Operations Technology, in order to align all CYBERCOM funding into one PE.
0301400F	SPACE SUPERIORITY INTELLIGENCE	In FY13 PB, all of PE 0301400F RDT&E AF funds are transferred to project 67A051, Space Superiority -- Advanced Intelligence Systems to separate it from unrelated programs.
0303131F	MIN ESSENT EMGNCY COMM NTWK (MEECN)	In FY13, Nuclear Command, Control, and Communications (NC3) Long Term Solution (LTS) was cancelled during FY13 budget development due to higher DoD priorities.
0303141F	GLOBAL COMBAT SUPPORT SYSTEM	In FY13, Program Element (PE) 0303141F, Global Combat Support Systems - Air Force includes a new start effort to add Enterprise Protection Risk Management (EPRM) as an automated risk analysis and management tool on the GCSS-AF Integrated Framework (IF).
0305164F	NAVSTAR GLO POS SYS(USER EQ)(SPACE)	In FY13, funds for Military GPS User Equipment (MGUE) are transferred to Project 643833 in this Program Element (PE).
0305193F	INTEL SPT TO INFO OPS (IO)	In FY13, 674871, Information Operations Technology, efforts transferred to PE 0208059F, CYBERCOM Activities, 676002, Cyber Systems Modernization, in order to align all CYBERCOM funding into one PE.
0305202F	DRAGON U-2	In FY13, Project 674820, Sensor Development, includes new start efforts.
0305205F	ENDURANCE UNMANNED AERIAL VEHICLES	In FY13, funding totals do not currently include \$29.7M requested for Overseas Contingency Operations.

PROGRAM ELEMENT (BY BUDGET ACTIVITY)	PROGRAM ELEMENT COMPARISON SUMMARY	
0305206F	AIRBORNE RECONNAISSANCE SYSTEMS	<p>In FY13, Project 674819, Common Data Link, efforts transferred to PE 0305236F, Project 674819, Common Data Link, in order to provide greater visibility into this congressionally mandated capability and prepare for extended applications as new operational concepts come into existence.</p> <p>In FY13, Project 676031, Dismount Detection Radar (DDR) efforts were transferred from Project 674818, Imaging and Targeting Support in order to provide greater visibility into development activities.</p>
0305208F	DISTRIBUTED COMMON GRND SYS	<p>In FY 2013, Distributed Common Ground System (DCGS) Integrated Backbone (DIB) transferred to PE 0305240F, "Support to Distributed Common Ground System (DCGS) Enterprise", in order to improve visibility into this effort. AF is lead service under the auspices of USD(I).</p> <p>In FY 2013, DCGS-Imagery (DCGS-I) Testbed transferred to PE 0305240F, "Support to Distributed Common Ground System (DCGS) Enterprise", in order to improve visibility into this effort. AF is lead service under the auspices of USD(I).</p> <p>In FY 2013, DCGS Enterprise transferred to PE 0305240F, "Support to Distributed Common Ground System (DCGS) Enterprise", in order to improve visibility into this effort. AF is lead service under the auspices of USD(I).</p> <p>In FY 2013, Common Imagery Processor (CIP) transferred to PE 0305240F, "Support to Distributed Common Ground System (DCGS) Enterprise", in order to improve visibility into this effort. AF is lead service under the auspices of USD(I).</p>
0305220F	RQ-4 UAV	<p>In FY13, Project 676001, NATO AGS, efforts transferred to PE 0305238F, NATO AGS, Project 676001, NATO AGS, in order to manage NATO AGS as a separate program.</p>
0305236F	COMMON DATA LINK (CDL)	<p>In FY13, this is a new PE. In FY 2013, Project 674819, Common Data Link, efforts transfer from PE 0305206F, Airborne Reconnaissance, Project 674819, Common Data Link, in order to provide better visibility for this congressionally mandated capability and prepare for expanded applications as new operational concepts come into existence.</p>
0305238F	NATO AGS	<p>In FY13, Project 676001, NATO AGS, efforts will transfer from PE 0305220F, NATO AGS, Project 676001, NATO AGS to PE 0305238F, NATO AGS, Project 676001, NATO AGS, in order to manage NATO AGS as a separate program.</p>

PROGRAM ELEMENT (BY BUDGET ACTIVITY)

PROGRAM ELEMENT COMPARISON SUMMARY

0305240F	SUPPORT TO DCGS ENTERPRISE	<p>In FY13, Distributed Common Ground System (DCGS) Integrated Backbone (DIB) transferred from PE 0305208F, Distributed Common Ground System (DCGS), in order to improve visibility into this effort. AF is lead service under the auspice of USD(I).</p> <p>In FY13, DCGS-Imagery (DCGS-I) Testbed transferred from PE 0305208F, DCGS, in order to improve visibility into this effort. AF is lead service under the auspice of USD(I).</p> <p>In FY13, DCGS Enterprise transferred from PE 0305208F, DCGS, in order to improve visibility into this effort. AF is lead service under the auspice of USD(I).</p> <p>In FY13, Common Imagery Processor (CIP) transferred from PE 0305208F, DCGS, in order to improve visibility into this effort. AF is lead service under the auspice of USD(I).</p>
0305881F	RAPID CYBER ACQUISITION	<p>In FY13, this is a new PE. In FY2013, 670374, Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt includes new start efforts.</p>
0307141F	INFO OPS TECH INTEGRATION & TOOL DEV	<p>In FY13, 674871, Information Operations Technology, efforts transferred to PE 0208059F, CYBERCOM Activities, 676002, Cyber Systems Modernization, in order to align all CYBERCOM funding into one PE.</p>
0401115F	C-130 AIRLIFT SQUADRONS	<p>In FY13, project 675244, C-130 CNS/ATM includes new start efforts.</p> <p>In FY13, project 674885, C-130 Avionics Modernization Program was terminated.</p>
0603423F	GPS III - OPER CONTROL SEGMENT	<p>In FY13, funds for GPS Enterprise level engineering integrations efforts were transferred to project 67A025 within this Program Element (PE).</p>
0604263F	COMMON VERTICAL LIFT SUPPORT PLATFORM	<p>In FY13, Project 675277, CVLSP, was terminated.</p>

PE	Type	Project Number	Title	Program Amount
Description				
65976	R&D	ZHTV120022	Create Thermal Structures Test Facility	\$1.3M
<p>This project will provide a state of the art Thermal Structures Test Facility to support verification and validation for critical aerospace vehicle structural technology programs. It enhances current capability by replacing a smaller 25 year old aluminum enclosure that suffers from many and varied deficiencies relative to safety and test requirements. Capability will benefit anticipated projects of the Responsive Reusable Boost for Space (RBS) Flagship Capability Concept (FCC) and increased collaboration among RZ/RB researchers in hypersonics as related technologies continue to receive increased emphasis.</p>				
65976	R&D	MHMOV101145	Construct Infrared Radiation Effects Laboratory	\$1.85M
<p>The Infrared Radiation Effects Laboratory project will construct a 6,000 square foot facility that will house one laboratory and associated offices for up to sixteen personnel. This project will provide the facility to accommodate demanding power requirements due to high current draw devices and a very low noise measurements floor (electronic noise caused by improper electrical isolation, poor quality ground, and interference from other RF sources, as well as low frequency mechanical noise due to building vibration). This project also addresses identified Scientific Advisory Board issues.</p>				
65976	R&D	TBD	Develop Solid Rocket Motor Transition Capability	\$2M
<p>This project will create a new S&T capability enabling the transition of next-generation AFRL solid rocket motor (SRM) technologies to industry toward the ultimate goal of providing advanced high performance solid propulsion to the warfighter. RZ-West is providing national leadership in the areas of SRM inert component, energetic ingredient, and propellant research but is currently limited to small scale activities leading to technology readiness level (TRL) 3. This new capability will synergize the efforts of multiple branches through solid rocket motor fabrication providing a platform for furthered development, integration, and testing of advanced SRM technologies to TRL 5. This activity will serve to mitigate the effects of deteriorating industry R&D investment, advance the readiness of domestic alternatives for a growing number of obsolescent materials, and answers recent SAB findings. It is aligned with the AF S&T Plan.</p>				
65976	R&D	ZHTV120024	Building 71A Revitalization – Integrated Laser Threat Warning & Protection	\$2.1M
<p>The B71A project is a joint RY-RX effort to modify the existing layout within B71A to integrate existing segregated capabilities into a unique, world-class laser warning and countermeasure research laboratory. The project will create a 3-story laboratory structure within the B71 A-bay, and integrate multiple areas performing laser warning and protection research. This project is heavily supported by classified customer base which lacks any similar DoD capability.</p>				
65976	R&D	TBD	Joint Optoelectronic Device Processing Facility (ODPF)	\$1.5M
<p>This project will create a semiconductor optoelectronic device process facility to be jointly used by researchers at RD and RV. Despite the fact that expertise to use this facility is already available at RD and RV, no such facility exists at the Phillips Research Site. Consequently, a large number of potential in-house projects, deemed critical in both directorates, cannot move forward. This 700 sq-ft class-100 facility will provide the necessary photolithographic etching tools to enable the formation of semiconductor devices that serve both the detector and emitter needs of the AF. Currently, the in-house research capabilities satisfy the theoretical modeling, epitaxial growth, and test & evaluation needs for in-house development of semiconductor optoelectronic devices. The addition of the clean-room facility for device processing is the one missing link that will close the research loop necessary to advance these technologies in a timely manner.</p>				
65976	R&D	FTFA041133R3	Construct Advanced Energetics Research Laboratory	\$1.6M

The Advanced Energetics Research Laboratory (AERL) project will construct a 60' x 110' steel building containing two internal (pre-fabricated) 35' x 40' research laboratories resting on vibration dampening pads isolated from the steel building's concrete floor. This project will provide a unique facility capable of handling advanced energetic materials for 6.1 and 6.2 advanced energetics basic and applied research programs, and allows for investigation and maturation of new nano-energetic materials.

65976	R&D	TBD	Weapon Seeker Research Tower	\$1.18M
<p>This project will provide a critical need variable height tower facility at the Eglin site C-86 range for the research, development and testing of next-generation weapon seekers. The tower will enable extended slant range measurements, allow full access to range geography, reduce optical turbulence distortion, eliminate ground clutter, and protect high value lab assets from overexposure to the elements. The tower capability proposed is crucial for current and future seeker research programs supporting multiple DoD customers.</p>				

65976	R&D	TBD	Virtual Combat Laboratory (VCL) Capability Upgrade	\$1.2M
<p>The virtual combat laboratory capability upgrade will modify 4000 square foot of laboratory space to create multiple high security-level research areas. This will enable VCL to extend support to higher security level programs, multiple customers and domains to include cyber / IO / anti-access technologies (further details available, but classified).</p>				

65976	R&D	TBD	Live, Virtual, and Constructive (LVC) Instrumentation of V	\$.975M
<p>The RHA proposal creates foundational infrastructure for Live, Virtual, and Constructive (LVC) research and collaboration by constructing a central LVC test and training control facility and range instrumentation infrastructure (e.g., displays, data aggregation, virtual and constructive modeling systems, cabling, high bandwidth data transmission lines, secure routers and servers to and from AFRL test beds and the range) to support the test range at WPAFB.</p>				

65976	R&D	ULDF10054	Stockbridge Controlled Contested Environment (Stockbridge Experimentation Upgrade)	\$1.8M
<p>The information Directorate (Rome Laboratory) project consists of two distinct items of work. The first part provides for infrastructure upgrade consisting of power and communications infrastructure distribution to 18 locations (pads) around the test site. The fiber infrastructure at each pad will vary by location. Each pad will be 20' x 30' with 6" of compacted crushed stone and have two concrete piers available for antenna towers and one concrete pad for power distribution. Each pad will be able to accommodate a 30A current load. The second part provides for the installation of communications conduit duct banks inter-connecting each of these 18 pads located throughout the 295 acres of property and building 1480. The project is 100% designed with a funded environmental assessment/impact package to be completed March 2012.</p>				

65976	R&D	TBD	Construct Broadband Optical Signatures Illumination Laboratory (BOSIL)	\$1.50
<p>The BOSIL project will construct a 1,000 square foot facility housing a one-of-a-kind experimental setup capable of characterizing broadband (VIS/IR), angle-resolved, optical signatures of red/blue target components. In addition to purchasing and configuring the broadband source/detection module, funding will enable construction associated with this project to include increasing available electrical power (110, 208, and 480V), upgrading HVAC for thermal control, installing optically absorbing ceiling panels and walls, putting in vinyl flooring, installing water chillers and associated distribution lines, upgrading lighting, and acquiring and setting up optics tables with pneumatic stabilization. CE Form 332 has been submitted for approval.</p>				

65976	R&D	TBD	Construct Joint Operations Center for Telescope Remote Operations	\$1.60
<p>This project establishes capability for remote operations, supports site modernization, improves research collaboration capabilities and future solvency goals as approved by AFRL/CC. It upgrades the network backbone and access between the Maui Space Surveillance Complex (MSSC) on the top of Haleakala and the Maui Research Technology Park in Kihei.</p>				

65976	R&D	TBD	Ice Harvester Design/Build	\$1.20
<p>The Starfire Optical Range (SOR) will expand its cooling capacity to include a third Ice Harvester necessary for cooling critical laser and optical test facilities. Currently, the two 100 ton Ice Harvesters on site cannot effectively cool the top of the hill to support test requirements. The design 20 years ago for the facility included an ice plant with three 100 ton Ice Harvesters to cool the laser facilities and 3.5M telescope. The facility was constructed with three 26' pits for ice collection. However, due to budget constraints at the time only one harvester was initially installed in 1990. In 1991 the second 100 ton machine was installed to serve as a backup. Since that time, two additional test facilities have been built and expansions have been made to all three facilities. All of which have taxed both of the current 100 ton Ice Harvesters to running at capacity. Under the current configuration, if one ice harvester is down, for maintenance or repair, testing cannot be conducted.</p>				

65976	R&D	TBD	Construct Controlled Fire Research Evaluation Facility	\$1.60
<p>Airbase Technologies Division will construct a 2,650 square foot facility that will provide the means for conducting medium-scale live fire tests in a windless or wind controlled environment. The facility will be used for research, engineering development, and evaluation of agents, systems, and personal protective equipment used for fire protection of forward deployed personnel, aircraft, and support assets. It will also expand the capability to validate combustion and fire suppression models.</p>				

1. COMPONENT AIR FORCE	FY2013 MILITARY CONSTRUCTION PROJECT DATA	2. DATE 15 DEC 2011
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3. INSTALLATION AND LOCATION ARNOLD AIR FORCE BASE, TENNESSEE	4. PROJECT TITLE LRDP - CONSTRUCT TEST CELL COOLING WATER LINE
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5. PROGRAM ELEMENT 72806	6. CATEGORY CODE 845-363	7. PROJECT NUMBER ANZY109056A	8. PROJECT COST (\$000) 2,300.0
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9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
PRIMARY FACILITIES				1,980
66-INCH COOLING WATER LINE	LF	700	2,150	(1,505)
66-INCH VALVE WITH PIT & ELECTRICAL OPERATORS	EA	1	100,000	(100)
MANHOLE	EA	1	40,000	(40)
CATHODIC PROTECTION	LF	700	85	(60)
FLOWMETER WITH PIT AND CONTROL CONNECTIONS	EA	1	275,000	(275)
SUPPORTING FACILITIES				0
SUBTOTAL				1,980
CONTINGENCY (5%)				99
TOTAL CONTRACT				2,078
SUPERVISION, INSPECTION, & OVERHEAD (6.5%)				135
DESIGN/BUILD - DESIGN COST (4% OF SUBTOTAL)				79
TOTAL REQUEST				2,293
TOTAL REQUEST (ROUNDED)				2,300

10. DESCRIPTION OF PROPOSED CONSTRUCTION
 Install a coated steel water line from the 84" header leaving the Secondary Pumping Station to the 54" main supplying the ASTF Air Supply area. Size pipe to provide all ASTF water requirements west of CB01 distribution valve (105kgpm). Project will include cathodic protection, isolation valve and flow meter at the supply end of the pipeline, an access manhole, and control system connection for valve and meter.

11. REQUIREMENT: 700 LF Adequate: 0 LF Substandard: 0 LF

PROJECT: LRDP - Construct Test Cell Cooling Water Line (Current Mission)

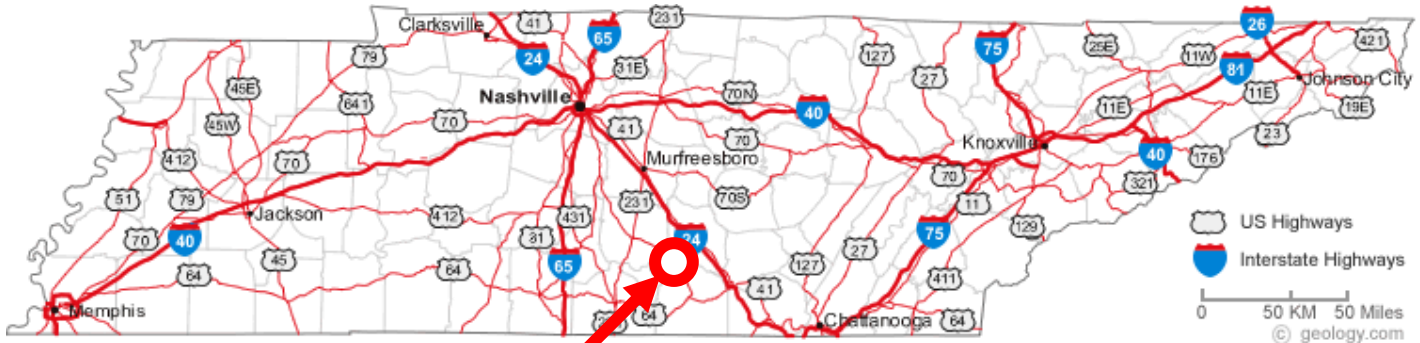
REQUIREMENT: Arnold AFB's mission is to provide pre-flight testing in support of DOD pre/post fuselage, turbine and weapons testing programs. The test facilities located at the base require cooling water to support this mission. This project will provide a new capability to conduct concurrent turbine engine and wind tunnel testing during the hot summer months.

CURRENT SITUATION: The existing cooling water to support wind tunnel and turbine engine testing is inadequate during the hottest period of the summer. Configuration of the cooling water system creates a water source problem where several test cells are all competing for the same inadequate water supply. Inability to support concurrent testing occurs during peak test load as customers attempt to accomplish testing before the end of the fiscal year. Significant test scheduling issues arise because AEDC's test capacity is reduced and the flexibility to meet customer schedules is lost. Typically, the hot summer period where the problem occurs is approximately 6-8 weeks, which equals to 12-16% of AEDC's annual earning capacity. Turbine engine testing can generate up to \$6M of testing per month. Wind tunnel testing is usually scheduled to near-full capacity, which translates to approximately \$1M per month. Alternating testing between the mission areas reduces significantly needed revenue and adversely impacts customer platforms such as fighters, bombers, missiles, bombs, and stores.

IMPACT IF NOT PROVIDED: If this project is not accomplished, AEDC will be unable to conduct concurrent turbine engine tests and wind tunnel tests. Turbine engine testing directly affects the component improvement program, which enhances the safety and reliability of fielded engines like the F-15 (F100), F-16 (F100/F110), F-22A (F119), and B-1B (F101); qualification testing for next generation aircraft like the F-35 (F135) and Global Hawk (F137); and alternate fuels certification for F-15 (F100), F-16 (F100/F110), B-1B (F101), and F-35 (F135). Wind tunnel testing supports fighters (e.g. F-35, F-22, F-15, F-18, and UCAS); bombers (e.g. B-1 and B-52); missiles (e.g. SM3, Next Gen AEGIS); stores (e.g. SDB II, JDAM, Next Generation Jammer); and classified programs.

1. COMPONENT AIR FORCE	FY2013 MILITARY CONSTRUCTION PROJECT DATA			2. DATE 15 DEC 2011
3. INSTALLATION AND LOCATION ARNOLD AIR FORCE BASE, TENNESSEE		4. PROJECT TITLE LRDP - CONSTRUCT TEST CELL COOLING WATER LINE		
5. PROGRAM ELEMENT 72806	6. CATEGORY CODE 845-363	7. PROJECT NUMBER ANZY109056	8. PROJECT COST (\$000) 2,300.0	
<p><u>ADDITIONAL:</u> For the revitalization and recapitalization of laboratories owned by the United States and under the jurisdiction of the Secretary concerned, the Secretary concerned may obligate and expend from appropriations available to the Secretary concerned for military construction not otherwise authorized by law or from funds authorized to be made available under section 219(a) of the Duncan Hunter National Defense Authorization Act for Fiscal Year 2009 (Public Law 110-417; 10 U.S.C. 2358 note), amounts necessary to carry out an unspecified minor military construction project costing not more than \$4,000,000.</p> <p>Base Civil Engineer: Mr. William (Bill) E. Wendle, DSN: 340-7916/COMM: (931) 454-7916.</p> <p><u>JOINT USE CERTIFICATION:</u> This is an installation utility/infrastructure project, and does not qualify for joint use at this location. However, all tenants on this installation are benefited by this project.</p>				

1. COMPONENT AIR FORCE	FY2013 MILITARY CONSTRUCTION PROJECT DATA		2. DATE 15 DEC 2011
3. INSTALLATION AND LOCATION ARNOLD AIR FORCE BASE, TENNESSEE		4. PROJECT TITLE LRDP - CONSTRUCT TEST CELL COOLING WATER LINE	
5. PROGRAM ELEMENT 72806	6. CATEGORY CODE 845-363	7. PROJECT NUMBER ANZY109056A	8. PROJECT COST (\$000) 2,300.0




Arnold Air Force Base, TN

Project Location




1. COMPONENT AIR FORCE	FY 2012 PROJECT DATA (computer generated)			2. DATE 3 JAN 2011	
3. INSTALLATION AND LOCATION EGLIN AIR FORCE BASE, FLORIDA			4. PROJECT TITLE ADVANCED ENERGETICS RESEARCH LAB		
5. PROGRAM ELEMENT 62602	6. CATEGORY CODE 316-333	7. PROJECT NUMBER FTFA041133R3	8. PROJECT COST (\$000) EEIC 52900 1,600.0		
9. COST ESTIMATES					
ITEM		U/M	QUANTITY	UNIT COST	COST (\$000)
PRIMARY FACILITIES					1,263.6
ADVANCED ENERGETICS RESEARCH LABORATORY		SF	6,600	191	(1,263.6)
SUPPORTING FACILITIES					178.0
UTILITIES		LS			(96.0)
PAVEMENTS		LS			(9.0)
SITE WORK		LS			(73.0)
SUBTOTAL					1,441.6
CONTINGENCY (5.0%)					72.1
SUPERVISION, INSPECTION, AND OVERHEAD (5.7%)					86.3
PROFIT AND OVERHEAD (.0%)					0.0
TOTAL FUNDED COST					1,600.0
UNFUNDED COST					0.0
TOTAL REQUEST					1,600.0
<p>10. Description of Proposed Work: Construct a 60' x 110' pre-engineered metal building with a 14' minimum clear ceiling height containing two 35' x 40' modular isolated lab rooms with a 14' ceiling height at AFRL/RW's High Explosives Research and Development (HERD) Complex. Each isolated lab room floor is a thick reinforced concrete slab, a vibration dampening pad to isolate it from the exterior metal building floor with a 2-inch separation to ensure no exterior vibration. Rest rooms, lab support work areas, mechanical, electrical, and communication rooms are located inside the exterior metal building. The isolated lab rooms are also isolated from these rooms located inside the exterior metal building with a 2-inch separation to ensure no exterior vibration. The existing HERD's circulating chilled/heated water will be used for heating and cooling with new air handling units installed for each of the modular isolated lab rooms as well for the areas inside the exterior metal building surrounding the two modular isolated lab rooms. The air handling unit for each modular isolated lab room must be capable of maintaining a set air temperature plus or minus 1 degree C inside the modular lab room at all times and provide a minimum of 12 air changes per hour when exposed energetic/reactive materials or their mixtures/formulations are present. No recirculation of air is permitted in the two modular isolated lab rooms or their associated chem lab rooms. Site work will provide access, storm water drainage and utilities for the facility as required. The metal building plus rebar and any other conductors in or connected to the metal building foundation/floor, and all connected external building components must have electrical continuity and be grounded to the building master ground bus bar. All conductors in each isolated lab room plus rebar and any other conductors in the vibration dampening pad must have electrical continuity and be grounded to the building master ground bus bar.</p>					
<p>11. Requirement: 6600 SF Adequate: 0 SF Substandard: 0 SF</p> <p>PROJECT: Construct a new Advanced Energetics Research Laboratory for 6.1 Advanced Energetics basic research activities being conducted at the Air Force Research Laboratory, Munitions Directorate, High Explosives Research and Development (HERD) Complex, a unique Air Force capability accomplishing advanced energetics and explosives research, development, integration, and testing activities in support of Air Force munitions.</p>					

1. COMPONENT AIR FORCE		FY 2012 PROJECT DATA (computer generated)		2. DATE 3 JAN 2011
3. INSTALLATION AND LOCATION EGLIN AIR FORCE BASE, FLORIDA			4. PROJECT TITLE ADVANCED ENERGETICS RESEARCH LAB	
5. PROGRAM ELEMENT 62602	6. CATEGORY CODE 316-333	7. PROJECT NUMBER FTFA041133R3	8. PROJECT COST (\$000) EEIC 52900 1,600.0	
<p><u>REQUIREMENT:</u> This facility will provide critically needed/mission essential laboratory areas capable of handling advanced energetic materials for 6.1 advanced energetics basic research supporting the Director of Defense Research & Engineering's (DDR&E) Advanced Energetics Major Thrust and the National Aerospace Initiative. This facility is also critical to AFRL's role as a "key participant" in the National Advanced Energetics Technology Program. This Advanced Energetics Research Lab is a critical initial component necessary to achieve the AFRL goal to develop a 6.1 Advanced Energetics basic research program recognized by AFOSR as a "Star Team", a unique world class research capability. This new facility is required to allow the HERD Complex to expand its advanced energetic basic research efforts to include laboratory work and to significantly improve the productivity of the increasing number of researchers. It will facilitate increased scientific collaboration with leading universities and distinguished researchers by providing a facility needed to support world class advanced energetics laboratory research. This world-class energetics program is critical to the development of future Air Force munitions required to meet present AFRL, AFMC, Air Force and DoD strategic plans.</p> <p><u>CURRENT SITUATION:</u> No existing lab space is available or suitable/usable for the expanding 6.1 advanced energetics research activities. Existing HERD requirements are increasing and the mission is significantly expanding. The Processing Section through-put doubled in the last 3 years, quadrupled in the last 6 years. All existing facilities are fully utilized and are overcrowded causing explosives safety concerns, impacting the mission and increasing development time because of a lack of space. The number of researchers assigned to the 6.1 basic research advanced energetics program has increased 533% in the last 4 years and is increasing again this year. Without this new facility, these scientists will be unable to accomplish their critical research. Over half of current research efforts are modeling and developing experiments that cannot be completed without this new facility, and designing/procuring unique equipment for development and testing of advanced energetics. Many researchers will share the two modular isolated lab rooms. Safety allows only one experiment/test at a time in each modular isolated lab room. The lack of adequate facilities currently prevents researchers from pursuing projects offering the biggest payoff or the best chance of success. Current strategic plans at all levels of DoD show a critical need to aggressively pursue advanced energetics concepts especially for applications to future micro munitions. This unique facility will allow advanced energetic researchers to apply nano fundamental research breakthroughs currently being discovered in other labs using non explosive nano materials to advanced energetics for Air Force munitions applications. Existing facilities at universities and basic research institutes working with nano materials do not meet minimum safety requirements for working with advanced energetics.</p> <p><u>IMPACT IF NOT PROVIDED:</u> AFRL will be unable to meet mid and far term DoD, Air Force, and AFRL munitions development strategic plans resulting in significant delays or forfeited future war fighter capabilities. Without this unique and critical facility we anticipate the loss of a large number of critical researchers with unique capabilities needed to support advanced energetic research. This will result in the loss or delay of time critical/essential research that will impact future Air Force and DoD munitions development for years to come, leading to a lack of appropriate munitions for future Air Force use and a significant reduction in future war fighter capabilities.</p> <p><u>ADDITIONAL:</u> Under the FY2005 \$1M LRDP authorization this project was initiated and approved by the Air Armament Center Base Civil Engineer and the Installation Commander. A construction contract was signed for \$930K. Due to explosive safety and storm water requirements the current total request amount is now \$1.6M. These issues have been resolved however the resulting delay and pending contract</p>				

1. COMPONENT AIR FORCE	FY 2012 PROJECT DATA (computer generated)			2. DATE 3 Jan 2011
3. INSTALLATION AND LOCATION EGLIN AIR FORCE BASE, FLORIDA			4. PROJECT TITLE ADVANCED ENERGETICS RESEARCH LAB	
5. PROGRAM ELEMENT 62602	6. CATEGORY CODE 316-333	7. PROJECT NUMBER FTFA041133R3	8. PROJECT COST (\$000) EEIC 52900 1,600.0	
<p>amendments drove a total request increase of \$670K above the 2005 contract award amount. The current construction estimate includes SIOH and contractor overhead and profit. Approval under the 2008 LRDP authority will ensure a complete and usable facility as originally programmed.</p>				
<p><u>JOINT USE CERTIFICATION:</u> This facility will be available for use by other services on an "as-available" basis, but the requirements set forth in this document are based only on the Air Force requirements.</p>				
<p>CERTIFICATION: I have reviewed this document and certify it is complete and accurate. I have validated the Project's primary and supporting costs and work classification. It has been fully coordinated with the user and other appropriate agencies and approved by the Installation Commander.</p>				
 DAVID H. MAHARREY, JR., Colonel, USAF Commander, 96th Civil Engineering Group Eglin Air Force Base, FL			DAVID W. FUNK, Colonel, USAF Chief Programs Division Installations and Mission Support	

1. COMPONENT AIR FORCE	FY 2012 PROJECT DATA (computer generated)			2. DATE	
3. INSTALLATION, SITE AND LOCATION KIRTLAND AIR FORCE BASE KIRTLAND SITE # 1 NEW MEXICO			4. PROJECT TITLE LRDP-CONSTRUCT IRREL LABORATORY		
5. PROGRAM ELEMENT 62205	6. CATEGORY CODE 312-472	7. RPSUID/PROJECT NUMBER 2445/MMMV101145	8. PROJECT COST (\$000) EEIC 52900 1,847.9		
9. COST ESTIMATES					
ITEM		U/M	QUANTITY	UNIT COST	COST (\$000)
PRIMARY FACILITIES					1,575.0
CONSTRUCT IRREL LAB		SF	6,000	263	(1,575.0)
SUPPORTING FACILITIES					90.0
UTILITIES		LS			(50.0)
ANTITERRORIS/FORCE PROTECTION		LS			(15.0)
SITE WORK		LS			(25.0)
SUBTOTAL					1,665.0
CONTINGENCY (5.0%)					83.3
SUPERVISION, INSPECTION, AND OVERHEAD (5.7%)					99.7
PROFIT AND OVERHEAD (.0%)					0.0
TOTAL FUNDED COST					1,847.9
UNFUNDED COST (.0%)					0.0
TOTAL REQUEST					1,847.9
<p>10. Description of Proposed Work: Construct a single story building with reinforced concrete foundation, CMU walls, structural steel framing, with a standing seam metal insulated sloped roof system. Work includes multi-zone HVAC systems, multi-voltage electrical systems, air and gas supplies and all site work. Project complies with DoD minimum antiterrorism force protection standards.</p> <p>Air Conditioning: 12 Tons</p>					
<p>11. Requirement: As Required.</p> <p>PROJECT: Laboratory Revitalization Demonstration Program (LRDP) Construct Infrared Radiation Effects Laboratory (Current Mission)</p> <p>REQUIREMENT: Construct a 6,000 SF facility with two laboratories and office space for up to 16 personnel. The Infrared Radiation Effects Laboratory (IRREL) has demanding power requirements due to high current draw devices and very low noise measurements floor (electronic noise caused by improper electrical isolation, poor quality ground, and interference from other RF sources, as well as low frequency mechanical noise due to building vibration). The IRREL requires an isolated grounding system to delete stray electromagnetic force, dedicated circuits, and single-phase, 30-amp conditioned power.</p> <p>CURRENT SITUATION: The 2010 Air Force Scientific Advisory Board (SAB) review of the AFRL Space Vehicles Directorate (RV) recognized infrared radiation effects research as a unique capability in DoD, playing a critical role in maturing technology for Space-based Intelligence, Surveillance, and Reconnaissance, but commented that poor facility conditions were holding back critical research and integration potential. Specifically, the existing lab occupies 2478 SF of lab space and 553 SF of office space in Bldg 426, which was constructed in 1958 as a dining hall. Experiment setup time is extremely time consuming due to adjusting for the widely varying conditions of temperature and ambient light variations. Extended, 24-hour data collections have been compromised when personnel arrive in the morning and turn on hallway lights, computers, etc. Setup currently requires removal of ceiling tiles, which is a violation of fire code. Noise created by other electrical equipment and power demands make experiments impossible to perform during duty hours, as ambient light, LEDs on monitors, and light created by equipment is</p>					

1. COMPONENT AIR FORCE	FY 2012 PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION, SITE AND LOCATION KIRTLAND AIR FORCE BASE KIRTLAND SITE # 1 NEW MEXICO			4. PROJECT TITLE LRDP-CONSTRUCT IRREL LABORATORY	
5. PROGRAM ELEMENT 62205	6. CATEGORY CODE 312-472	7. RPSUID/PROJECT NUMBER 2445/MMMV101145	8. PROJECT COST (\$000) EEIC 52900 1,847.9	
<p>corrupting experiment data. Some experiments require light control, which is also very difficult as the current lab has extensive windows and it is very difficult to totally black-out a lab. In addition to the poor facility conditions described, there is no space available for the IRREL to expand lab characterization capabilities, nor space available for additional employees. The IRREL characterization schedule is maximized in terms of what projects can be simultaneously performed in the lab.</p> <p><u>IMPACT IF NOT PROVIDED:</u> IRREL is the only DoD laboratory capable of focal plane array characterization for radiometric performance, radiation tolerance, and assessment of mission readiness for these state-of-the-art sensors. IRREL is currently supporting one Advanced Technology Demonstration, Visible Array for Space Tracking (VAST), and one High Visibility Program (HIGH STARE) for critical DoD imaging systems. The Air Force SAB review of AFRL/RV recognized this research as a unique capability, playing a critical role in maturing technology for several space-based platforms, but commented that poor facility conditions were holding back critical research and integration potential. This laboratory project was part of the Space Vehicles Component Development Lab MILCON; however, the need for this critical technology can no longer wait or be performed in such substandard facilities. Therefore, it is being removed and executed under the LRDP authority.</p> <p><u>ADDITIONAL:</u> This project will be accomplished with 3600 funds to support mission requirements under Section 2804 of the National Defense Authorization Act amended Section 2805 of Title 10 - using the Lab Revitalization and Demonstration Program (LRDP) authority to exceed the \$750,000 minor construction limit up to \$2,000,000. All known alternative options were considered during the development of this project. Base Civil Engineer: Mr. D. Brent Wilson (505) 846-7911.</p> <p><u>JOINT USE CERTIFICATION:</u> This facility can be used by other components on an "as available" basis; however, the scope of the project is based in Air Force requirements.</p> <p>I have reviewed this document and certified it is complete and accurate. I have validated the project's primary and supporting costs and work classification. It has been fully coordinated with the user and other appropriate agencies and approved by the Installation Commander at the 12 Apr 11 Facilities Board.</p> <p>D. Brent Wilson, P.E. Base Civil Engineer Kirtland Air Force Base, NM</p> <p>PAUL A. PARKER, SES Command Civil Engineer Communications, Installations and Mission Support</p>				

1. COMPONENT AF (AFMC)		FY 2013 RDT&E MILITARY CONSTRUCTION PROJECT DATA		2. DATE (YYYYMMDD) 20111222	REPORT CONTROL SYMBOL DD-A&T(A)1610
3. INSTALLATION AND LOCATION HANSCOM AIR FORCE BASE, MASSACHUSETTS			4. PROJECT TITLE TDC LAB RENOVATION B1105B		
5. PROGRAM ELEMENT 72976, EEIC 529	6. CATEGORY CODE 317315	7. PROJECT NUMBER MXRD110043I	8. PROJECT COST (\$000) EEIC 529: 768		
9. COST ESTIMATES					
ITEM		U/M	QUANTITY	UNIT COST	COST (\$000)
<u>PRIMARY FACILITIES</u>					
TDC Lab Renovation		SM	305	1,907.48	581.782
SUBTOTAL					581.782
Profit (10%)					58.178
Overhead (10%)					58.178
SUBTOTAL					698.138
Contingency (10%)					69.814
TOTAL CONSTRUCTION COST					767.952
TOTAL REQUEST					767.952
ROUNDED					768.000
DESIGN (20%)					153.590
10. DESCRIPTION OF PROPOSED WORK: Renovate 305 SM in B1105B to meet TDC Lab requirements. Renovation will include upgrades and modifications to the HVAC, power, and communications systems.					
11. REQUIREMENT:					
PROJECT: Renovate space in B1105B for the Theatre Deployable Communications (TDC) to create lab space for PMO engineers to ensure continued support of the deployed baseline with RDT&E funds.					
REQUIREMENT: This project is required to support the move of a classified RDT&E mission. The R&D mission requires the proper environment and security safeguards to meet the RDT&E effort. This project will use 3600 Funds (RDT&E)					
CURRENT SITUATION: The TDC team has been mandated to move from B1607 to B1105B and needs to transfer its lab and office equipment. B1105B is not currently equipped to handle the TDC lab requirements.					
The current space used by the TDC Team in B1607 is only a small portion of an area primarily used by another team. Since this office area is not large enough for the TDC team, in addition to this area, they are leasing numerous mobile shelters which reside outside Building 1607 in the back parking area. In the proposed new space, HVAC upgrades are required to handle the high heat loads from the equipment. All of the specialized testing, design and configuration equipment require high amperage electrical circuits. The communications network in the building must be configured to directly connect to the Defense Research Engineering Network (DREN). The DREN furnishes a separate test network for the TDC Team to use; assuring the Base Communications Network is not put at risk at any time.					
I have reviewed this document and certify it is complete and accurate. I have validated the project's primary and supporting costs and work classification. It has been fully coordinated with the user and other appropriate agencies and approved by the Installation Commander.					
		12/23/11			
THOMAS J. SCHLUCKEBIER, P.E., CFM, LEED AP		(date)			
Base Civil Engineer					

1. COMPONENT AF (AFMC)	FY 2013 RDT&E MILITARY CONSTRUCTION PROJECT DATA		2. DATE (YYYYMMDD) 20111222	REPORT CONTROL SYMBOL DD-A&T(A)1610
3. INSTALLATION AND LOCATION HANSCOM AIR FORCE BASE, MASSACHUSETTS		4. PROJECT TITLE TDC LAB RENOVATION B1105B		
5. PROGRAM ELEMENT 72976, EEIC 529	6. CATEGORY CODE 317315	7. PROJECT NUMBER MXRD110043I	8. PROJECT COST (\$000) EEIC 529: 768	

11. REQUIREMENT:

IMPACT IF NOT PROVIDED:
If the renovation does not occur, the TDC lab will not be able to move into B1105B and the ESC will be unable to complete its consolidation plans. This will result in organizational inefficiencies and will negatively impact TDC modernization and sustainment efforts.

Without adequate office space and appropriate design laboratory environmental conditions, the TDC Team could fall behind in their Engineering design and testing. Security Information Assurance updates will not be available in a timely manner for their end users. The deployed Air Force Operations Units that depend on this hardware and software for their entire communications networks could suffer with outdated communications equipment, impacting their missions on the ground, all over the world.

The TDC Team uses Commercial Off the Shelf (COTS) Equipment to configure and build its networks. This ensures that the technology is the most current available and that the end product will not be obsolete by the time it gets to the client. Groups of engineers research the current commercial marketplace to determine which products will best suit their mission needs. This equipment is then developed into the product that fits the mission by redesign, and reconfiguration. Testing and evaluation is the next step necessary to assure that the product can be fully accredited to standard. Without the configuration management and test function that the TDC does, there would be no technology suitable to meet these specific Air Force needs. The final product is then updated continually throughout its useful life to align it with new technological developments in the marketplace and address newly emerging security concerns.

**1391 Cost Estimate
MXRD 11-0043I**

PRIMARY FACILITIES	Percent	
Line Item Total		581.782
Subtotal		581.782
Profit	10%	58.178
Overhead	10%	58.178
Subtotal		698.138
Contingency	10%	69.814
Total Construction Cost		767.952
TOTAL REQUEST		767.952
Design	20%	153.59

INPUT

1. COMPONENT AF (AFMC)	FY 2013 RDT&E MILITARY CONSTRUCTION PROJECT DATA	2. DATE (YYYYMMDD) 20111222	REPORT CONTROL SYMBOL DD-A&T(A)1610
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3. INSTALLATION AND LOCATION HANSCOM AIR FORCE BASE, MASSACHUSETTS	4. PROJECT TITLE CITS LAB RENOVATION B1107
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5. PROGRAM ELEMENT 72976, EEIC 529	6. CATEGORY CODE 310925	7. PROJECT NUMBER MXRD110044G	8. PROJECT COST (\$000) EEIC 529: 827
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9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
<u>PRIMARY FACILITIES</u>				
CITS Lab Renovation	SM	334	\$1,873.99	625.913
SUBTOTAL				625.913
Profit (10%)				62.591
Overhead (10%)				62.591
SUBTOTAL				751.095
Contingency (10%)				75.110
TOTAL CONSTRUCTION COST				826.205
TOTAL REQUEST ROUNDED				826.205 827.000
DESIGN (20%)				165.241

10. DESCRIPTION OF PROPOSED WORK: Renovate 334 SM in B1107 to meet CITS Lab requirements. Renovation will include upgrades and modifications to the HVAC, power, and communications systems.

11. REQUIREMENT:


PROJECT: Renovate space in B1107 for the Combat Information Transport System (CITS) to create lab space for PMO engineers with the tools to configure, test, and manage systems that are being acquired and implemented throughout the Air Force with RDT&E funds.

REQUIREMENT: This project is required to support the move of a classified RDT&E mission. The R&D mission requires a secure lab facility to continue efforts to modernize and increase the security posture of the AF 'GIG'. This project will use 3600 Funds (RDT&E).

CURRENT SITUATION: The CITS Test and Integration Facility (currently in building 1607) and the AFNET GDIT Lab (currently in Needham), will be relocating to Building 1107 as part of an ESC consolidation effort. B1107 is not currently equipped to handle the CITS lab requirements.

The CITS area in B1607 is currently under limited use procedures which impacts mission readiness. A large portion of the computer equipment is not powered up because of insufficient space, limited accessible connectivity, inadequate HVAC and electrical power in the Lab area. The existing lab is not adequate for current mission needs or for future growth opportunities including the Needham group consolidation.

I have reviewed this document and certify it is complete and accurate. I have validated the project's primary and supporting costs and work classification. It has been fully coordinated with the user and other appropriate agencies and approved by the Installation Commander.

 12/23/11
 THOMAS J. SCHLUCKEBIER, P.E., CFM, LEED AP (date)
 Base Civil Engineer

1. COMPONENT AF (AFMC)	FY 2013 RDT&E MILITARY CONSTRUCTION PROJECT DATA		2. DATE (YYYYMMDD) 20111222	REPORT CONTROL SYMBOL DD-A&T(A)1610
3. INSTALLATION AND LOCATION HANSCOM AIR FORCE BASE, MASSACHUSETTS		4. PROJECT TITLE CITS LAB RENOVATION B1107		
5. PROGRAM ELEMENT 72976, EEIC 529	6. CATEGORY CODE 310925	7. PROJECT NUMBER MXRD110044G	8. PROJECT COST (\$000) EIC 529: 1,116	

11. REQUIREMENT:

IMPACT IF NOT PROVIDED:

If the renovation does not occur, the CITS lab will not be able to move into B1107 and the ESC will be unable to complete its consolidation plans. This will result in organizational inefficiencies.

The Lab deploys new capabilities to respond to customer requirements and sustains existing capabilities against new threats to the Air Force Network. The CITS group encompasses the Network Control Center (NCC) at ESC, the Network Operations Systems Center (NOSC) in the eastern United States and is the connectivity link into the Air Force Network (AFNET). The CITS is an integral part of the global Air Force Network. Without the CITS: Situational Awareness would be compromised; the Air Force would not get basic updates from the existing systems; there would be no COTS delivery and the AFNET could potentially be at risk for a Security breach.

Interruptions or downtime for any length of time would potentially put the AFNET at risk. The Lab needs to be available for engineers to do the research needed to address potential critical vulnerabilities and then immediately implement solutions to protect the GIG.


It will be critical that the proper building modifications are identified and implemented beforehand to ensure a seamless move to avoid disruption of Lab activities. The hardware systems and the software that resides on them require adequate cooling and backup generator power to ensure maximum uptime.

The goal is to avoid unacceptable delays to critical AFNET systems designed to modernize and increase the security posture of the AF GIG.

**1391 Cost Estimate
MXRD 11-0044G**

PRIMARY FACILITIES	Percent	
Line Item Total		625.913
Subtotal		625.913
Profit	10%	62.591
Overhead	10%	62.591
Subtotal		751.095
Contingency	10%	75.11
Total Construction Cost		826.205
TOTAL REQUEST		826.205
Design	20%	165.241

INPUT

1. COMPONENT AF (AFMC)		FY 2013 RDT&E MILITARY CONSTRUCTION PROJECT DATA		2. DATE (YYYYMMDD) 20111222	REPORT CONTROL SYMBOL DD-A&T(A)1610
3. INSTALLATION AND LOCATION HANSCOM AIR FORCE BASE, MASSACHUSETTS			4. PROJECT TITLE B1607 ELECTRICAL UPGRADE		
5. PROGRAM ELEMENT 72976F, EEIC 522	6. CATEGORY CODE 317311	7. PROJECT NUMBER MXRD110064	8. PROJECT COST (\$000) EEIC 522: 1,705		
9. COST ESTIMATES					
ITEM		U/M	QUANTITY	UNIT COST	COST (\$000)
<u>PRIMARY FACILITIES</u>					
Electrical Upgrades		LS	1	\$1,291,666	1,291.666
SUBTOTAL					1,291.666
Profit (10%)					129.167
Overhead (10%)					129.167
SUBTOTAL					1,550.000
Contingency (10%)					155.00
TOTAL CONSTRUCTION COST					1,705.000
TOTAL REQUEST					1,705.000
DESIGN (15%)					255.750
10. DESCRIPTION OF PROPOSED WORK: Perform an electrical upgrade to B1607. This upgrade will be based on the recommendations provided in the electrical load study conducted in MXRD09002. The upgrade includes a replacement of the electrical service which will include work on associated transformers, switchboards, emergency and standby generators as required by code, and the reorganization of existing HVAC, Life/ Safety, and lab loads.					
11. REQUIREMENT: <u>PROJECT:</u> B1607 Electrical Upgrade. <u>REQUIREMENT:</u> To have sufficient electrical power to support all mission activities in B1607. The CEIF Mission, operating in Building 1607, is designated by AFMC as a classified RDT&E activity. This project is required to use 3600 Funds (RDT&E). <u>CURRENT SITUATION:</u> The electrical system in B1607 cannot support the current load required by the mission activities occurring in the building. In addition, mission critical loads are not adequately supported by emergency and standby generators. All lab requirements and life and safety lighting operations are not currently supported. The labs are operating at limited use capacity. Only half of the computer equipment is able to be powered at the same time and there is not sufficient emergency power for life and safety systems. <u>IMPACT IF NOT PROVIDED:</u> The tenants of B1607 will continue to be unable to power all mission related equipment. This impacts the mission of these tenants as they will be unable to perform all of their required work. The generator cannot handle the current load and during outages, the RDT&E mission is compromised and Life and Safety backup systems are not available.					
I have reviewed this document and certify it is complete and accurate. I have validated the project's primary and supporting costs and work classification. It has been fully coordinated with the user and other appropriate agencies and approved by the Installation Commander.					
		12/23/11			
THOMAS J. SCHLUCKEBIER, P.E., CFM, LEED AP		(date)			
Base Civil Engineer					

**1391 Cost Estimate
MXRD 11-0064**

PRIMARY FACILITIES	Percent	
Line Item Total		1291.666
Subtotal		1291.666
Profit	10%	129.167
Overhead	10%	129.167
Subtotal		1550
Contingency	10%	155
Total Construction Cost		1705
TOTAL REQUEST		1705
Design	15%	255.75

INPUT



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS AIR FORCE MATERIEL COMMAND
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

MEMORANDUM FOR HQ AFMC ESC/XRC

FROM: HQ AFMC/A3

SUBJECT: Research, Development, Test and Evaluation (RDT&E) Determination of the Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Enterprise Integration Facility (CEIF 2.0)

1. HQ AFMC/A3 Certification Team has reviewed AFMC ESC/XRC request for RDT&E Determination for the CEIF 2.0.
2. The CEIF 2.0 meets the following criteria to support designation as RDT&E:
 - a. Subject activity does not process operational data, typically utilizes non-standard hardware/software, tools and applications.
 - b. Activity executes Development, Test, and Evaluation (DT&E) experimentation.
 - c. Activity receives 3600 funds specifically within the 6.x budget designation.
3. Thus, as DT&E Certification Authority, I have determined that CEIF 2.0 to be an RDT&E activity as follows:

Classification level: CLASSIFIED

Funding: Based upon our review the majority of the funding for CEIF is 3600 RDT&E funds under BA 6.

Mission Description: The CEIF is a Research, Development, Test, and Evaluation (RDT&E) Simulation and Integration lab.

Mission Assurance Category: 3

Interconnections: The CEIF 2.0 Enclave provides network backbone connections to secure external networks that include CFBL, DISN-LES, DREN, JTEN, SDREN, and JMETC. Connections are not persistent and will only be utilized during RDT&E events. Upon receipt of this memo, the Program Manager responsible for the subject activity is required to contact their appropriate Portfolio Manager to complete the EITDR registration process.

4. Upon registration approval, Program Manager responsible for the subject activity will be required to create the appropriate C&A version within the C&A Workflow module in order to complete the C&A process and obtain an accreditation decision.

War-winning capabilities ... on time, on cost

6. Since the subject activity is deemed to be a classified system please ensure that all EMSEC requirements are met and documented appropriately.
7. The local Information Assurance Manager (IAM) / Information Assurance Officer (IAO) will maintain a copy of this memo until the subject activity C&A package until no longer needed.
8. If you have any questions or concerns related to the above determination, please feel free to contact Mr. Steven Boettcher, HQ AFMC/A3F, DSN 787-5365, (937) 257-5365, or steve.boettcher@wpafb.af.mil for assistance.



DANIEL S. GODDARD
Technical Director
Directorate of Air, Space and
Information Operations

FY 2013 CONSTRUCTION PROJECT DATA COMPUTER GENERATED		2. DATE NOV 2011	
3. INSTALLATION AND LOCATION WRIGHT-PATTERSON AFB OH (AFMC)		4. PROJECT TITLE CONSTRUCT THERMAL STRUCTURES TEST FACILITY	
5. PROGRAM ELEMENT 65976	6. CATEGORY CODE 318-612	7. PROJECT NUMBER ZHT120022	8. PROJECT COST (\$000) EEIC 529: \$ 1,500

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
PRIMARY FACILITIES				
Construct Thermal Structures Test Facility	SF	780	1,666.67	1,300.0
SUBTOTAL				1,300.0
CONTINGENCY (10%)				130.0
SUBTOTAL				1,430.0
SUPERVISION, INSPECTION, AND OVERHEAD (5.6%)				80.1
TOTAL FUNDED COST				1,510.1
TOTAL FUNDED COST (ROUNDED)				1,500.0
UNFUNDED COST (A/E Fee)				

10. DESCRIPTION OF PROPOSED WORK: Remove existing test chamber in the high bay of 20065. Saw cut floor slab, excavate, and provide new foundation with sufficient reinforcing to accommodate high degrees of reaction (pulling effects). Construct a metal enclosure with structural support and reinforcing to accommodate over pressurization events. Provide HVAC systems with specialized dual air handlers with liquid nitrogen for set-point temperature control. Provide safety interlocks in the control system, spill containment, and other features to ensure operational safety. Provide connections to the facility utility systems.

11. PROJECT: Construct Thermal Structures Test Facility F/20065.

REQUIREMENT: Facilities to house research and development of structural systems for aerospace vehicles.

CURRENT SITUATION: It is proposed to test thermal protection systems, actively and passively cooled structures and non-structural components, and aerospace vehicle structural systems subject to high heat. This proposed testing will require extreme thermal environments, inert atmospheres, and mechanical load application in the presence of applied energy, all of which cannot be accommodated by the current test chamber. The existing test chamber is 25 years old and has limited capacity for proposed testing activities. The facility cannot accommodate anticipated heat and structural loads, does not have atmospheric temperature control, and is undersized for anticipated testing program. A complete tear-off of the chamber roof is required for the installation and removal of large test articles

IMPACT IF NOT PROVIDED: Flagship Capability Concepts (FCC) are high priority concept development programs generating innovative, technologically advanced "flagship" products. The Thermal Structures Test Facility will support the Responsive Reusable Boost for Space FCC (RBS FCC), the highest priority FCC for the Air Vehicles Directorate. This program will support the development of reusable aerospace vehicles for trans-atmospheric flight. Failure to provide the test chamber will adversely impact the development of thermal protection, thermal management, and lightweight hot structures technologies supporting the RRBS FCC, indefinitely delaying the development of advanced trans-atmospheric aerospace weapons systems. The United States technological advantage in aerospace weapons systems will be eventually lost.

ADDITIONAL: This project will be accomplished using Lab Revitalization and Demonstration Program (LRDP) authority for minor construction up to \$5,000,000, in accordance with 10 U.S.C. §2805(d).

1. COMPONENT
AIR FORCE

**FY 2013 MILITARY CONSTRUCTION PROJECT DATA
COMPUTER GENERATED**

2. DATE

3. INSTALLATION AND LOCATION

WRIGHT-PATTERSON AFB OH

CONSTRUCT THERMAL STRUCTURES TEST FACILITY

5. PROJECT NUMBER
ZHTV120022

I have reviewed this and certify it is complete and accurate. I have validated the project's primary and supporting costs and work classification. It has been fully coordinated with the user and other appropriate agencies and approved by the installation commander.

DAVID A. PERKINS, P.E.
Director
Civil Engineer Directorate

Date

PAUL A. PARKER, SES
Command Civil Engineer
Communications, Installations,
and Mission Support

Date

1. COMPONENT
AIR FORCE

FY 2013 MILITARY CONSTRUCTION PROJECT DATA
COMPUTER GENERATED

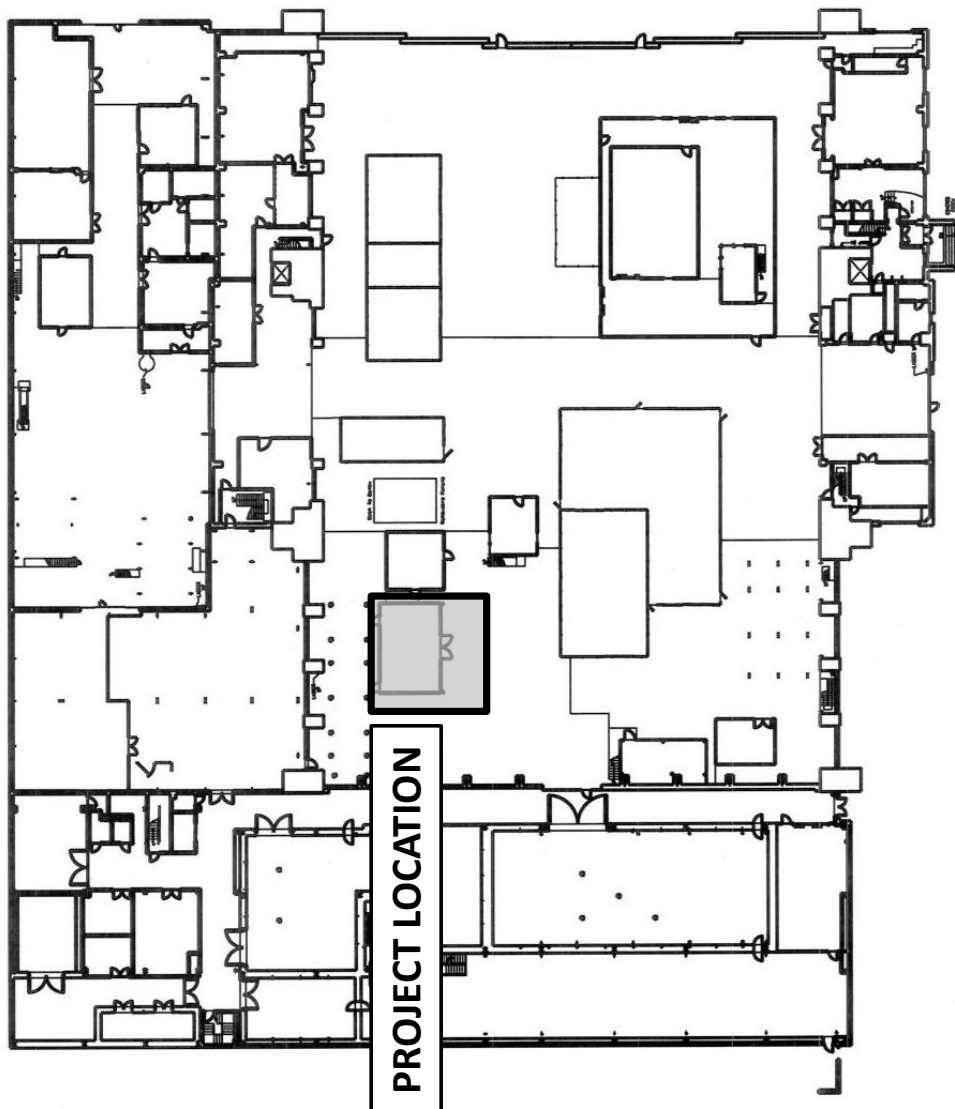
2. DATE

3. INSTALLATION AND LOCATION

WRIGHT-PATTERSON AFB OH

CONSTRUCT THERMAL STRUCTURES TEST FACILITY

5. PROJECT NUMBER
ZHTV120022



20065_1

1. COMPONENT
AIR FORCE

FY 2013 MILITARY CONSTRUCTION PROJECT DATA
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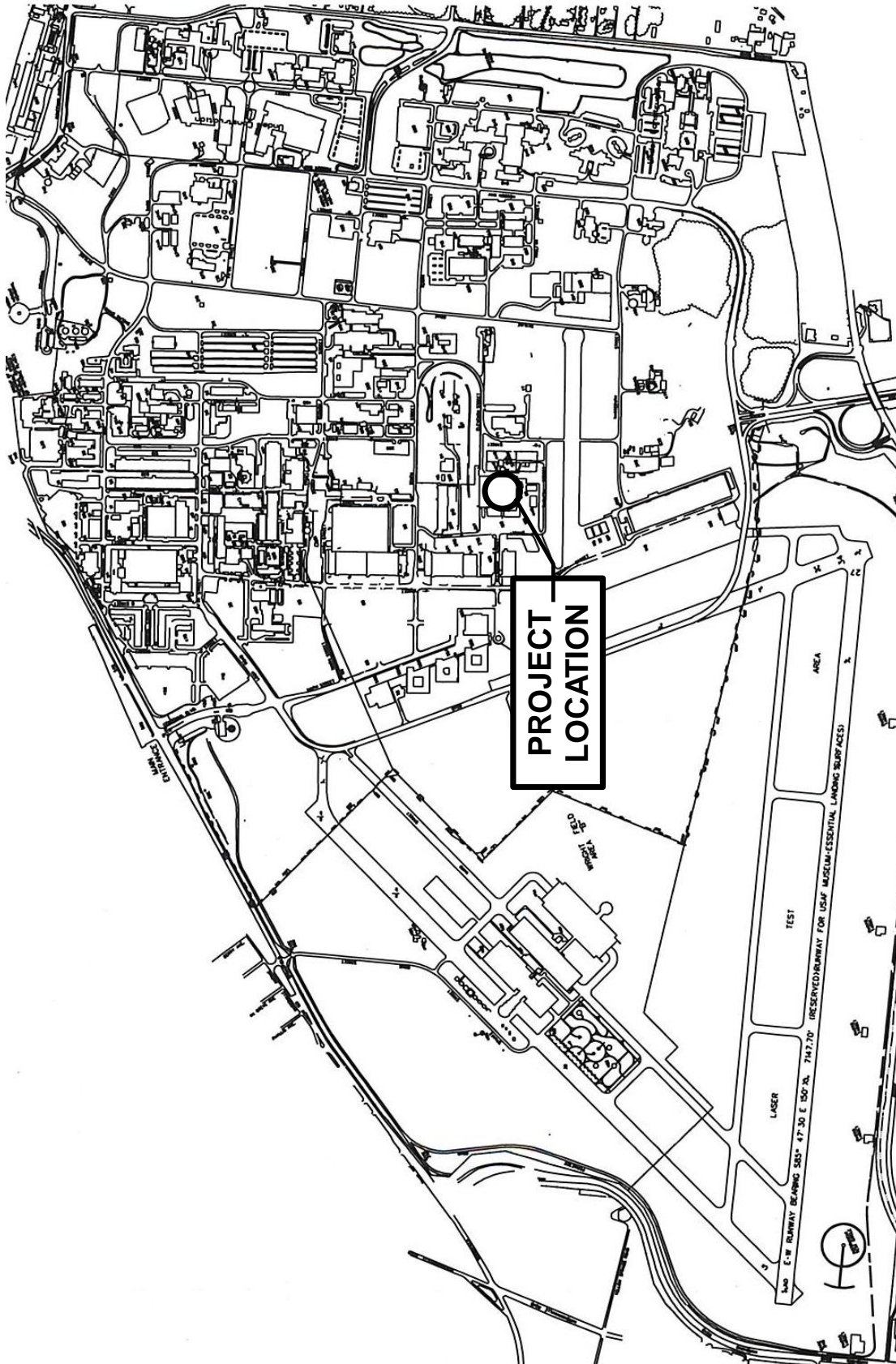
2. DATE

3. INSTALLATION AND LOCATION

WRIGHT-PATTERSON AFB OH

CONSTRUCT THERMAL STRUCTURES TEST FACILITY

5. PROJECT NUMBER
ZHTV120022



1. COMPONENT AF (AFMC)	FY 2013 CONSTRUCTION PROJECT DATA COMPUTER GENERATED		2. DATE DEC 2011
3. INSTALLATION AND LOCATION WRIGHT-PATTERSON AFB OH (AFMC)		4. PROJECT TITLE INTEGRATED LASER THREAT WARNING & PROTECTION	
5. PROGRAM ELEMENT 65976	6. CATEGORY CODE 310-933	7. PROJECT NUMBER ZHT120024	8. PROJECT COST (\$000) EEIC 529: \$ 2,500

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
PRIMARY FACILITIES				
Integrated Laser Threat Warning & Protection Facility	LS			2,100.0
SUBTOTAL				2,100.0
CONTINGENCY (10%)				210.0
SUBTOTAL				2,310.0
SUPERVISION, INSPECTION, AND OVERHEAD (5.6%)				129.4
TOTAL FUNDED COST				2,439.4
TOTAL FUNDED COST (ROUNDED)				2,500.0

10. DESCRIPTION OF PROPOSED WORK Accomplish interior demolition, slab sawcutting, foundation excavation. Provide a structural system for a three-storey structure, including framing, seismic bracing, floor labs and stairwells. Provide interior partitions, doors, hardware, ceiling, and finishes. Provide latrine fixtures, fittings, and specialties. Provide facility HVAC system, including air handlers, chillers, ducts, and related piping and controls. Provide power and lighting. Provide plumbing. Provide fire detection, alarm, and suppression systems. All labor and materials to construct a three story Laser Threat Warning and Protection Lab in the high bay area of test cell 20071A.

11. PROJECT: Integrated Laser Threat Warning & Protection Lab F/20071A.

REQUIREMENT: Research and development of countermeasures to hostile advanced weapon systems.

CURRENT SITUATION: Research and development of directed energy weapons system technology includes research into laser threats and protection of weapon systems and the war fighter from those threats.

Countermeasures research is a high priority to the Secretary of Defense and across the Air Force. Research supports supporting the Laser Warning top 10 need of the Air Mobility Command (AMC) and Air Combat Commands (ACC) draft Directed Energy Protection concept of operation. At present laser countermeasures are scattered into multiple labs operating under different directorates and located in different facilities, leading to duplicative efforts and hampering collaborative laser countermeasures research across differing technologies and directorates. Research includes investigation of technology performance in atmospheric and space environments. As an example research into countermeasures include the Tactical Optical Laser Simulator (TALOS) program, which requires a space environment to fully assess laser technology. This environment can be simulated in the F/20071A test sphere, but the TALOS lab is at some distance from this apparatus. The security level of some existing facilities isn't sufficient due to the sensitivity of countermeasures research in providing a technological advantage to the war fighter.

IMPACT IF NOT PROVIDED. Research will be hindered by fragmented and duplicated efforts, reducing the timeliness and efficiency of directed energy research. Countermeasures will not be deployed into weapons systems or deployment will be flawed due to inadequate research, putting the war fighter at risk. The US technological advantage in directed energy weaponry will be lost, ultimately posing a risk to national security.

ADDITIONAL: This project will be accomplished using Lab Revitalization and Demonstration Program (LRDP) authority for minor construction up to \$5,000,000, in accordance with 10 U.S.C. §2805(d).

1. COMPONENT
AIR FORCE

FY 2013 MILITARY CONSTRUCTION PROJECT DATA
COMPUTER GENERATED

2. DATE

3. INSTALLATION AND LOCATION

WRIGHT-PATTERSON AFB OH

INTEGRATED LASER THREAT WARNING & PROTECTION LAB F/20071A

5. PROJECT NUMBER
ZHTV120024

I have reviewed this and certify it is complete and accurate. I have validated the project's primary and supporting costs and work classification. It has been fully coordinated with the user and other appropriate agencies and approved by the installation commander.

DAVID A. PERKINS, P.E.
Director
Civil Engineer Directorate

Date

PAUL A. PARKER, SES
Command Civil Engineer
Communications, Installations,
and Mission Support

Date

1. COMPONENT
AIR FORCE

FY 2013 MILITARY CONSTRUCTION PROJECT DATA
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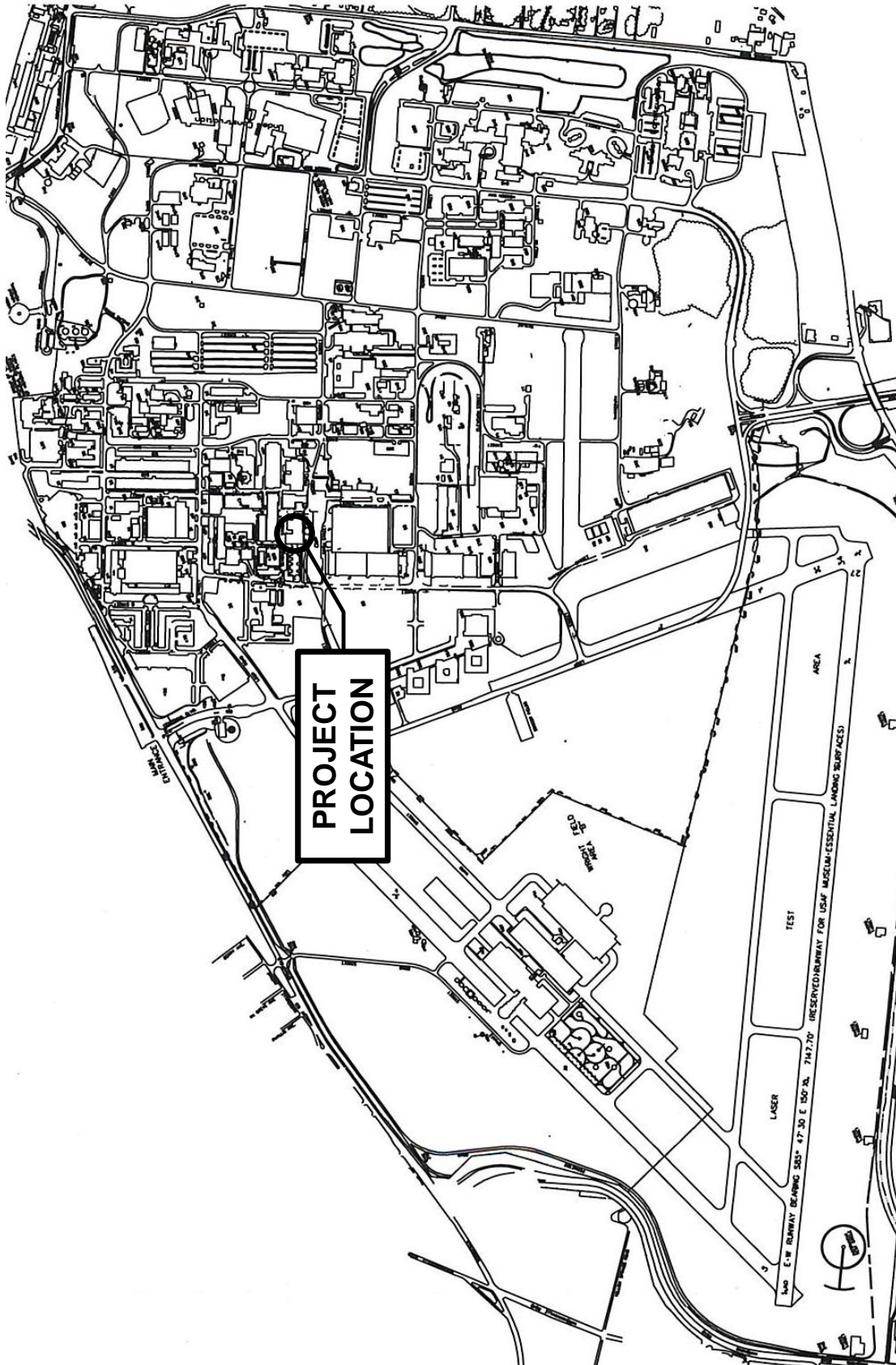
2. DATE

3. INSTALLATION AND LOCATION

WRIGHT-PATTERSON AFB OH

INTEGRATED LASER THREAT WARNING & PROTECTION LAB F/20071A

5. PROJECT NUMBER
ZHTV120024



1. COMPONENT
AIR FORCE

FY 2013 MILITARY CONSTRUCTION PROJECT DATA
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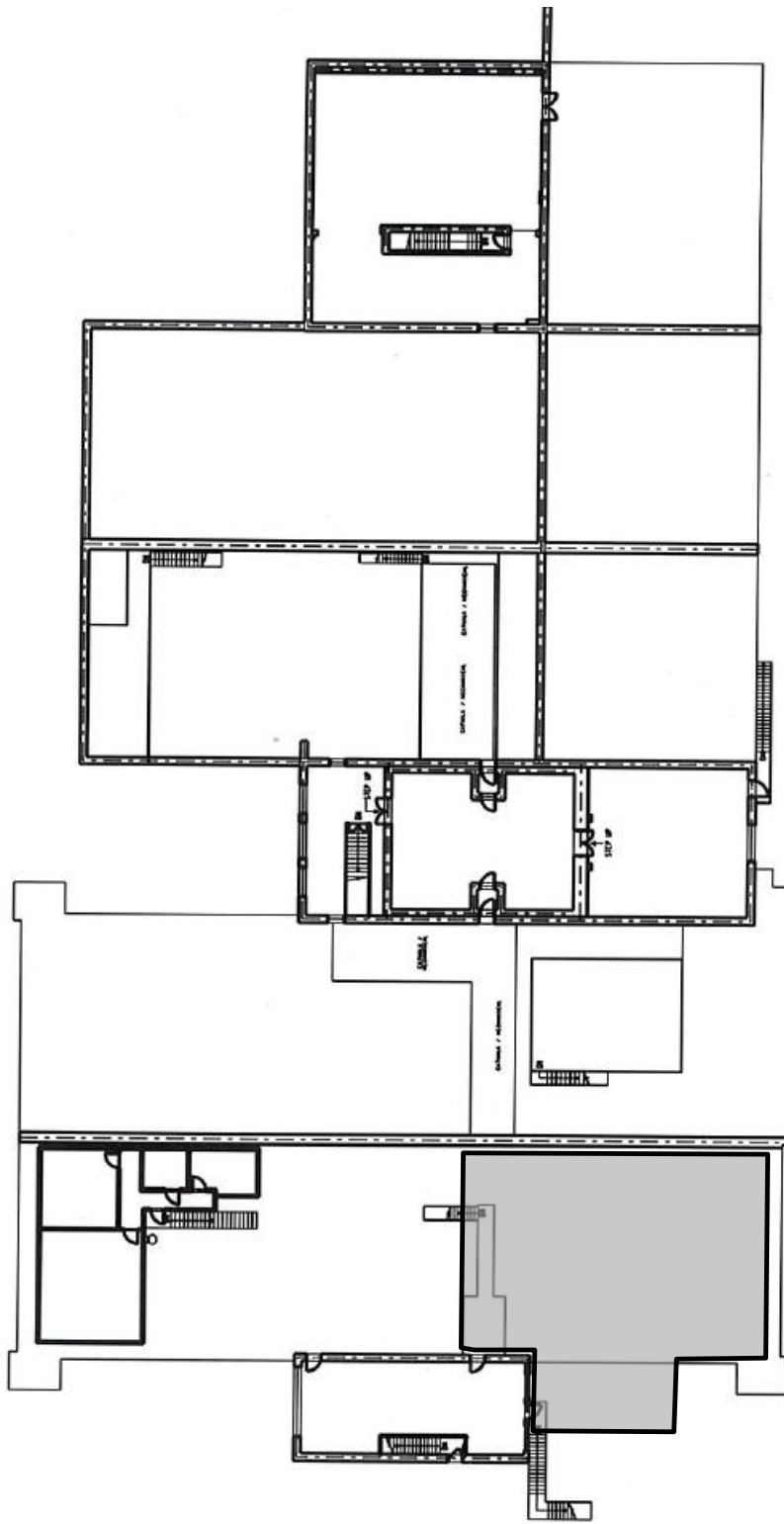
2. DATE

3. INSTALLATION AND LOCATION

WRIGHT-PATTERSON AFB OH

INTEGRATED LASER THREAT WARNING & PROTECTION LAB F/20071A

5. PROJECT NUMBER
ZHTV120024



20071A_2

PROJECT LOCATION

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603423F: <i>Global Positioning System III - Operational Control Segment</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	353.623	362.823	371.595	-	371.595	393.742	270.253	190.089	208.511	Continuing	Continuing
67A021: OCX	353.623	362.823	307.785	-	307.785	332.232	206.313	127.729	144.861	Continuing	Continuing
67A025: GPS Enterprise Integrator	-	-	63.810	-	63.810	61.510	63.940	62.360	63.650	Continuing	Continuing

Note
The Cost to Complete and Total Cost for MDAP projects in this program element are documented in the R3. The Cost to Complete and Total Cost on the R2 are entered as "Continuing" and not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding.

A. Mission Description and Budget Item Justification

The Global Positioning System (GPS) is a space based Positioning, Navigation and Timing (PNT) distribution system, which operates through weather and electromagnetic environments (jamming, spoofing, etc.). GPS supports both civil and military users in air, space, sea and land operations. This Program Element (PE) funds the Research & Development for the next generation GPS control segment (OCX) and the GPS Enterprise Integrator. This includes the advanced concept development, systems analysis, modernized control segment development, training simulators, Integrated Logistics Support (ILS) products, and developmental test resources, and systems engineering required to meet the government's obligations to the international, military and civil communities. OCX acquisition was established to 1) fly legacy and 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). GPS Enterprise Integrator is responsible for architecture and system definition (the analysis and definition, management, maintenance, and evolution of the GPS Enterprise requirements and interface technical documents) as well as for the planning, execution, and fielding of the Enterprise.

OCX funds will support engineering studies and analyses, architectural engineering studies, trade studies, technology needs forecasting, systems engineering, system development, test and evaluation efforts 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. Funds will support science and technology, technology development and systems development efforts.

GPS supports both civil and military users in air, space, sea and land operations. The GPS Enterprise consists of Space, Ground Control, and User Equipment Segments. The government is responsible for the integration of the three GPS Segments such that they provide worldwide GPS capability to support the warfighter and over a billion national security, civil, allied, and commercial GPS users. The GPS Enterprise Integrator project includes the efforts associated with the Government's prime contract tasks necessary to accomplish this critical integrating function. The Enterprise Integrator maintains the GPS architecture and system definition, ensures compatibility of Generation II and III systems, and develops/manages plans for execution and fielding of the GPS Enterprise. Further, the Integrator provides analyses to support Government-directed enterprise level trades among the GPS segments leading to definition, management, maintenance, and evolution of the GPS Enterprise requirements and interface technical documents.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603423F: <i>Global Positioning System III - Operational Control Segment</i>
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In addition, the GPS Enterprise Integrator project funds support for the delivery of all GPS Enterprise capabilities. Examples for Generation II include electronic protection and additional civil signals; for Generation III, additional anti-jamming protection. To accomplish this, GPS Enterprise Integrator delivers architecture and trade studies between space, control, and user segments, with recommendations presented to the Government through a formal change board process. GPS Enterprise Integrator's analyses guide government decisions to ensure efficient and effective synchronization and execution across all Generation II and III GPS programs as well as studies concerning potential future GPS alternatives. For Enterprise-wide integration to be successful, the Integrator: works with the GPS Segment ACAT-1D prime contractor teams to develop plans for early risk reduction System Integration (SI) Demos to ensure system interfaces and functionality meet user and system requirements; establishes Giver/Receiver Lists that ensure all equipment and documentation is ready when needed; conducts formal test and verification, including Requirement Verification Plans; and System Test Plans and Procedures. GPS Enterprise Integrator performs all these efforts across all GPS programs in all acquisition phases. The government owns the Enterprise system requirements and integration, and with support from the Enterprise Integrator team eliminates the need to fund a development prime contractor to perform these functions. This enhances government oversight and accountability.

B. Program Change Summary (\$ in Millions)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	-	390.889	369.453	-	369.453
Current President's Budget	353.623	362.823	371.595	-	371.595
Total Adjustments	353.623	-28.066	2.142	-	2.142
• Congressional General Reductions	-	-4.066			
• Congressional Directed Reductions	-	-24.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.147	-			
• Other Adjustments	353.770	-	2.142	-	2.142

Change Summary Explanation

FY11: Congressional Directed Transfer from PE 0305265F, GPS III Space Segment: (+381.9); Congressional Directed Reduction: (-25.000); Congressional General Reduction: (-3.130); SBIR: (-0.147)

FY12: Congressional Directed Reduction for slow execution: (-24.000); Congressional General Reduction: (-4.066)

FY13: Integrate operationally responsive space lessons learned: (1.500)

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603423F: <i>Global Positioning System III - Operational Control Segment</i>	PROJECT 67A021: <i>OCX</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
67A021: OCX	353.623	362.823	307.785	-	307.785	332.232	206.313	127.729	144.861	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY13, funds for GPS Enterprise level engineering integrations efforts were transferred to project 67A025 within this Program Element (PE).

A. Mission Description and Budget Item Justification

The Global Positioning System (GPS) is a space based Position, Navigation and Time (PNT) distribution system. This Project funds the Research and Development (R&D) for the next generation GPS operational control segment (OCX). This 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 legacy and 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, architectural engineering studies, trade studies, technology needs forecasting, systems engineering, system development, test and evaluation efforts 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. Funds will support science and technology, technology development and systems development efforts.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013
Title: OCX	353.623	362.823	307.785
Description: Development of the next generation control segment.			
FY 2011 Accomplishments: Continue OCX Block 1-2 Integrated System Design, Systems Engineering & Integration (SE&I) and technical and program support.			
FY 2012 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603423F: <i>Global Positioning System III - Operational Control Segment</i>	PROJECT 67A021: <i>OCX</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Continue OCX Block 1-2 Integrated System Design, Systems Engineering & Integration (SE&I) and technical and program support.			
<i>FY 2013 Plans:</i> Continue OCX Block 1-2 Integrated System Design, Systems Engineering & Integration (SE&I) and technical and program support.			
Accomplishments/Planned Programs Subtotals	353.623	362.823	307.785

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• R-216: <i>RDT&E AF, PE 0305265F, GPS III Space Segment</i>	430.132	455.095	318.992	0.000	318.992	221.276	215.224	161.621	76.642	342.600	1,028.253
• P-19: <i>MPAF, PE 0305265F, GPS III Space Segment</i>	0.000	432.244	410.294	0.000	410.294	415.031	424.694	531.528	774.281	4,329.600	1,371.253
• P-20: <i>MPAF, PE 0305265F, GPS III Space Segment Advance Procurement</i>	0.000	81.811	82.616	0.000	82.616	74.167	117.855	119.993	121.828	1,058.200	312.015
• P-42: <i>OPAF, PE 0603423F, NAVSTAR GPS</i>	0.000	0.000	0.000	0.000	0.000	3.931	4.697	11.530	13.738	0.000	20.158
• TBD: <i>DOT (FAA)</i>	17.523	20.800	25.800	0.000	25.800	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy
The Air Force is pursuing a "Block" approach to the next generation GPS control segment (OCX) to rapidly respond to warfighter capability requirements. The Block acquisition strategy approach follows the "Back to Basics" space program acquisition philosophy which focuses on mission success and on-time delivery. Additionally, the strategy calls for capability (i.e. better signal maintainability (Digital Waveform Generation (DWG)), Unified S-Band (USB), Search and Rescue (SAR) GPS, and near-real time C2) on-ramps for the follow on contract for GPS III SVs 09 and beyond which will require updates to the OCX ground segment. This will ensure enterprise synchronization across space and ground segments.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603423F: <i>Global Positioning System III - Operational Control Segment</i>	PROJECT 67A021: <i>OCX</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Phase B OCX Block 1 & 2 Development	C/CPAF	Raytheon:Aurora, CO	473.837	266.920	Nov 2011	268.587	Nov 2012	-		268.587	875.904	1,885.248	0.000
SE&I	C/CPAF	SAIC:Huntington Beach, CA	19.128	10.121	Nov 2011	9.563	Nov 2012	-		9.563	31.186	69.998	0.000
Modernization/SE & Technical Support	Various	Various:Various,	39.408	37.485	Nov 2011	-		-		-	0.000	76.893	0.000
OCS transition to OCX	C/CPAF	Boeing:Seal Beach, CA	2.889	-		-		-		-	0.000	2.889	0.000
Subtotal			535.262	314.526		278.150		-		278.150	907.090	2,035.028	0.000

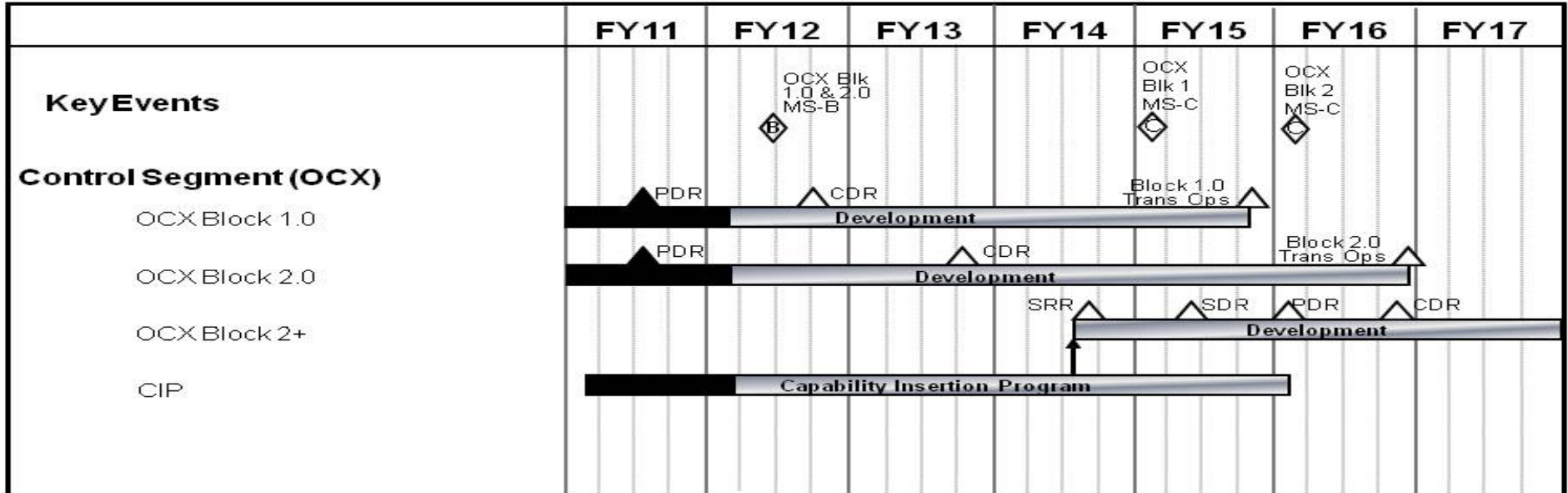
Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Directorate Support	Various	Various:,	66.584	11.073	Jan 2012	3.234	Nov 2012	-		3.234	10.547	91.438	0.000
Subtotal			66.584	11.073		3.234		-		3.234	10.547	91.438	0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FFRDC (Aerospace - PMA)	RO	Aerospace:El Segundo, CA	43.777	37.224	Jan 2012	11.623	Nov 2012	-		11.623	37.904	130.528	0.000
FFRDC (MITRE - PMA)	C/CPFF	MITRE:Bedford, MA	-	-		7.551	Nov 2012	-		7.551	24.625	32.176	0.000
FFRDC (SEI - PMA)	C/CPFF	SEI:Pittsburgh, PA	-	-		2.174	Nov 2012	-		2.174	7.090	9.264	0.000

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603423F: <i>Global Positioning System III - Operational Control Segment</i>	PROJECT 67A021: <i>OCX</i>



CDR – Critical Design Review	PDR – Preliminary Design Review	SDR – System Design Review
CIP – Capability Insertion Program	SRR – System Requirements Review	d – Delta
	SV – Space Vehicle	

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603423F: <i>Global Positioning System III - Operational Control Segment</i>	PROJECT 67A021: <i>OCX</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
OCX Blocks 1 & 2 MS B	2	2012	4	2012
OCX Block 1 Critical Design Review (CDR)	4	2012	4	2012
Software Iteration 1.5 Complete	2	2013	2	2013
OCX Block 2 CDR	4	2013	4	2013
OCX Launch and Checkout System (LCS) Complete	4	2013	4	2013
Software Iteration 1.7 Complete	1	2014	1	2014
Software Iteration 2.1 Complete	3	2014	3	2014
OCX Block 1 Formal Qualification Test (FQT)	4	2014	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603423F: <i>Global Positioning System III - Operational Control Segment</i>	PROJECT 67A025: <i>GPS Enterprise Integrator</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
67A025: <i>GPS Enterprise Integrator</i>	-	-	63.810	-	63.810	61.510	63.940	62.360	63.650	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY13 funds for this project were transferred from project 67A021 within this same PE.

A. Mission Description and Budget Item Justification

The Global Positioning System (GPS) is a space based Positioning, Navigation and Timing (PNT) distribution system, which operates through weather and electromagnetic environments (jamming, spoofing, etc). GPS supports both civil and military users in air, space, sea and land operations. The GPS Enterprise consists of Space, Ground Control, and User Equipment Segments. The government is responsible for the integration of the three GPS Segments such that they provide worldwide GPS capability to support the warfighter and over a billion national security, civil, allied, and commercial GPS users. This project funds the Research and Development for the GPS Enterprise Integrator, which includes the efforts associated with the Government's prime contract tasks necessary to accomplish this critical integrating function. The Enterprise Integrator maintains the GPS architecture and system definition, ensures compatibility of Generation II and III systems, and develops/manages plans for execution and fielding of the GPS Enterprise. Further, the Integrator provides analyses to support Government-directed enterprise level trades among the GPS segments leading to definition, management, maintenance, and evolution of the GPS Enterprise requirements and interface technical documents.

In addition, this project funds support for the delivery of all GPS Enterprise capabilities. Examples for Generation II include electronic protection and additional civil signals; for Generation III, additional anti-jamming protection. To accomplish this, GPS Enterprise Integrator delivers architecture and trade studies between space, control, and user documents, with recommendations presented to the Government through a formal change board process. GPS Enterprise Integrator's analyses guide government decisions to ensure efficient and effective synchronization and execution across all Generation II and III GPS programs as well as studies concerning potential future GPS alternatives. For Enterprise-wide integration to be successful, the Integrator: works with the GPS Segment ACAT-1D prime contractor teams to develop plans for early risk reduction System Integration (SI) Demos to ensure system interfaces and functionality meet user and system requirements; establishes Giver/Receiver Lists that ensure all equipment and documentation is ready when needed; conducts formal test and verification, including Requirement Verification Plans; and System Test Plans and Procedures. GPS Enterprise Integrator performs all these efforts across all GPS programs in all acquisition phases. The government owns the Enterprise system requirements and integration, and with support from the Enterprise Integrator team eliminates the need to fund a development prime contractor to perform these functions. This enhances government oversight and accountability.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to support operational systems.

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

	FY 2011	FY 2012	FY 2013
Title: GPS Enterprise Integrator	-	-	63.810

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603423F: <i>Global Positioning System III - Operational Control Segment</i>	PROJECT 67A025: <i>GPS Enterprise Integrator</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Description: The integration and configuration control of all elements of the GPS system (space/ground/user equipment) with one another in support of both military and civil users			
FY 2013 Plans: Accomplish system definition and system integration across the GPS Enterprise, including Generation II and III (space, control, and user segments). Conduct OCX-GPS III Risk Reduction demos for interface and functionality validation; evolve specifications and interface control documents (ICDs) in support of GPS III Capability Insertion Program and Military GPS User Equipment (MGUE) Critical Design Review (CDR) and GPS III Milestone-B.			
Accomplishments/Planned Programs Subtotals	-	-	63.810

C. Other Program Funding Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• R-56: RDT&E AF, PE 0305164F, NAVSTAR Global Positioning System User Equipment Space	0.000	0.000	96.840	0.000	96.840	125.926	122.756	153.727	160.714	403.600	402.409
• R-198: RDT&E AF, PE 0305164F, NAVSTAR Global Positioning System User Equipment Space	155.778	131.832	29.621	0.000	29.621	0.000	0.000	0.000	0.000	0.000	1,584.110
• R-199: RDT&E AF, PE 0305165F, NAVSTAR GPS (Space),	33.404	17.704	14.335	0.000	14.335	0.000	0.000	0.000	0.000	0.000	65.443
• R-216: RDT&E AF, PE 0305265F, GPS III Space Segment	430.132	455.095	318.992	0.000	318.992	221.276	215.224	161.621	76.642	342.600	1,028.253
• P-22: MPAF, PE 0305165F, Global Positioning System (Space)	64.252	107.689	58.147	0.000	58.147	77.602	7.328	0.000	0.000	0.000	315.018
• P-19, P-20: MPAF, PE 0305265F, GPS III Space Segment	0.000	514.055	492.910	0.000	492.910	489.198	542.549	651.521	896.109	5,387.700	1,683.268
• P-42: OPAF, PE 0305164F, 0305165F, 0603423F, NAVSTAR GPS	5.250	2.008	2.031	0.000	2.031	13.492	14.749	15.516	15.795	2.200	49.007

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603423F: <i>Global Positioning System III - Operational Control Segment</i>	PROJECT 67A025: <i>GPS Enterprise Integrator</i>

D. Acquisition Strategy

In accordance with a “back to basics” acquisition approach and exercise of strong oversight of development contractors, the Air Force will exercise complete ownership of the architecture, system definition, and integration. GPS Enterprise Integrator comprises both Federally Funded Research and Development Center (FFRDC) contractors and a Systems Engineering & Integration (SE&I) contractor. GPS Enterprise Integrator function of the SE&I contractor is currently funded within this Program Element (PE) for the Next Generation Operational Control System (OCX). SE&I services were procured in 2007 through a full and open competition. GPS Enterprise Integrator function is now being tracked as a separate Project (67A021) within this PE.

E. Performance Metrics

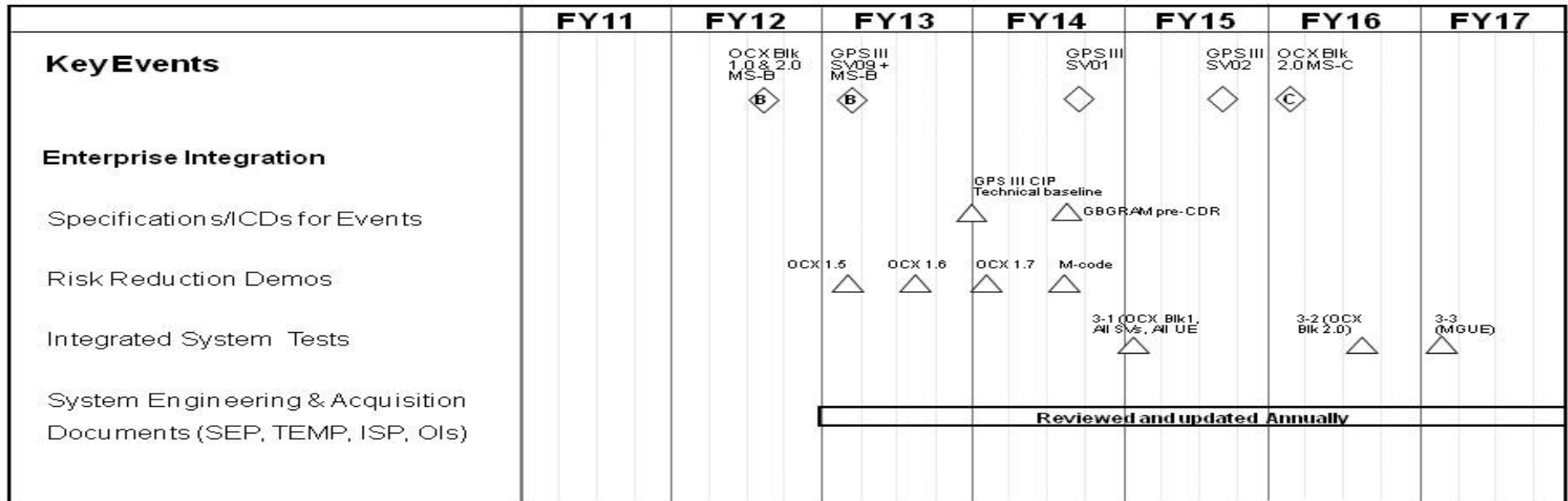
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force											DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT						
3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				PE 0603423F: Global Positioning System III - Operational Control Segment				67A025: GPS Enterprise Integrator						
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
GPS Enterprise Integrator	C/CPAF	SAIC:El Segundo, CA	-	-		40.822	Nov 2012	-		40.822	220.558	261.380	0.000	
Subtotal			-	-		40.822		-		40.822	220.558	261.380	0.000	
Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
FFRDC (MITRE)	C/CPFF	MITRE:Bedford, MA	-	-		10.000	Nov 2012	-		10.000	54.029	64.029	0.000	
FFRDC (Aerospace)	RO	Aerospace:El Segundo, CA	-	-		12.988	Nov 2012	-		12.988	70.173	83.161	0.000	
Subtotal			-	-		22.988		-		22.988	124.202	147.190	0.000	
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal			-	-		-		-		-	0.000	0.000	0.000	
Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal			-	-		-		-		-	0.000	0.000	0.000	
			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total		Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	-		63.810		-		63.810	344.760	408.570	0.000	
Remarks														

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603423F: <i>Global Positioning System III - Operational Control Segment</i>	PROJECT 67A025: <i>GPS Enterprise Integrator</i>



CDR – Critical Design Review ICD – Interface Control Document OI – Operating Instruction TEMP – Test and Evaluation Master Plan	CIP – Capability Insertion Program ISP – Information Support Plan SEP – Systems Engineering Plan UE – User Equipment	GB-GRAM – Ground Based GPS Receiver Application Module MGUE – Military GPS User Equipment SV – Space Vehicle
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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603423F: <i>Global Positioning System III - Operational Control Segment</i>	PROJECT 67A025: <i>GPS Enterprise Integrator</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Specifications and ICD's for MGUE CDR	1	2013	1	2013
Risk Reduction Demostration for OCX 1.5 and GPS III functionality	1	2013	1	2013
Risk Reduction Demostration for OCX 1.6 and GPS III functionality	3	2013	3	2013
Specifications and ICDs for GPS III Capability Insertion Program Technical Baseline	1	2014	1	2014
Risk Reduction Demostration for OCX 1.7 and GPS III functionality	1	2014	1	2014
Risk Reduction Demonstration for M-code functionality	3	2014	3	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	3.980	5.365	-	-	-	-	-	-	-	Continuing	Continuing
675277: <i>CVLSP</i>	3.980	5.365	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2013, PE 0604263F, Project 675277, Common Vertical Lift Support Platform (CVLSP) was terminated.

A. Mission Description and Budget Item Justification

This document includes only FY11 and FY12 funds for CVLSP. Funding in the budget and out years has been deleted as a result of program termination. Due to system requirements, the subsequent budget exhibits contain information reflecting funding in FY11 and FY12.

The 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 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.

These funds provide for missionization of an in-production, non-developmental, Government Off-The-Shelf or Commercial Off-The-Shelf (GOTS/COTS) aircraft including flight testing, Live Fire Test and Evaluation, and airworthiness certification. Funding also provides for development or conversion of COTS training systems, technical data, support equipment, and logistics elements as required for use in an operational environment.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production fielding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	5.365	7.440	-	7.440
Current President's Budget	3.980	5.365	-	-	-
Total Adjustments	3.980	-	-7.440	-	-7.440
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	3.980	-	-7.440	-	-7.440
 Change Summary Explanation					
Funding in FY13 was deleted as a result of program termination. Due to system requirements, budget exhibits contain information reflecting funding in FY11 and FY12.					
FY11 includes a congressionally directed transfer, where \$6.4M procurement was withdrawn in exchange for \$3.980M RDT&E.					

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: CVLSP	3.980	5.365	-
Description: Procure a medium lift helicopter with improved speed, range, capacity and survivability to replace the AF fleet of UH-1N.			
FY 2011 Accomplishments: Formulate acquisition strategies for aircraft, subsystem procurement, logistics, and training system procurement.			
FY 2012 Plans: Conduct program termination activities (program documentation, previous year budget accounting, and program office closure) due to FY13 program termination.			
Accomplishments/Planned Programs Subtotals	3.980	5.365	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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D. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0604263F, CVLSP, APAF, BA 04: <i>N/A</i>	0.000	52.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. 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 Initial Operational Capability was planned for FY15. The CVLSP is expected to be an in-production, non-developmental, Government Off-The-Shelf or Commercial Off-The-Shelf (GOTS/COTS) aircraft.

F. 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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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 Personnel and Pay System (AF-IPPS)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	22.471	91.640	91.697	-	91.697	128.111	112.607	85.413	59.993	Continuing	Continuing
676003: <i>HRM Structural Development</i>	22.471	91.640	91.697	-	91.697	128.111	112.607	85.413	59.993	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

AF-IPPS will be a web enabled, Commercial-Off-The-Shelf (COTS) based solution aligning with the Secretary of the Air Force (SECAF) "3-1" (Active, Reserve, and Air National Guard) initiative dated 15 Oct 10 that will integrate many existing personnel and pay processes into one self-service system. The system represents the AF commitment to modernizing business practices and providing enhanced support for today's service members and their families. AF-IPPS will align with Department of Defense (DoD) data standards for personnel, pay, and accounting, including the Common Human Resource Information Standards (CHRIS) and the Enterprise Information Web (EIW) effort, which will ensure compliance with the Business Enterprise Architecture (BEA).

Current AF personnel and pay operations are implemented in separate domains and systems, each with independent business processes, technical solutions, and information technology (IT). The lack of an integrated system and antiquated technology contribute to thousands of personnel and pay errors and delays in customer support that drives total cost of ownership higher across system operations. AF-IPPS eliminates the current systems' problems by delivering an integrated Enterprise Resource Planning (ERP) solution that provides accurate and timely personnel and pay information for AF operations and superior customer service for the Airman. AF-IPPS will ensure that Air Force personnel and pay fully support the Federal Financial Management Improvement Act (FFMIA) FY17 auditability requirements.

The AF-IPPS acquisition strategy is a two increment approach, with multiple, discrete, and severable capability releases delivered every 18-24 months. For Increment 1, the government will conduct a full and open competitive (best value) source selection with a single contract award for blueprinting, Enterprise Resource Planning (ERP) implementation, integration with the government hosting environment, testing, delivery, and sustainment. Increment 2 will be a separate acquisition effort focused on the sustainment of the system.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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 Personnel and Pay System (AF-IPPS)</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	43.300	91.866	90.598	-	90.598
Current President's Budget	22.471	91.640	91.697	-	91.697
Total Adjustments	-20.829	-0.226	1.099	-	1.099
• Congressional General Reductions	-	-0.226			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.673	-			
• Other Adjustments	-20.156	-	1.099	-	1.099

Change Summary Explanation

FY 2011 Congressional mark of \$20.156M identified as early to need. Additionally, Small Business Innovative Research (SBIR) reduction of \$673K occurred in FY 2011.

FY12 Congressional General Reduction (FFRDC, Sec. 8023) of 0.226M.

FY13 funding increase to support AF-IPPS effort.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Prime Contractor	-	28.558	59.204	-	59.204
Description: Conduct systems integration, development, and test activities.					
FY 2011 Accomplishments: N/A					
FY 2012 Plans: Prime contractor will work on requirements analysis, design, integration and training for AF-IPPS and support other activities associated with ensuring Air Force pay and personnel capabilities remain viable until system deployment. Prime Contractor will also stand up development lab.					
FY 2013 Base Plans:					

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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 Personnel and Pay System (AF-IPPS)</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Prime contractor will continue to work on requirements analysis, system design, integration, test, deployment, change management, and training for AF-IPPS and support other activities required for developing and integrating AF-IPPS. Prime Contractor will also configure COTS products, renew COTS S/W, and/or purchase S/W and H/W to support development, requirements analysis, system design, integration, test, deployment, change management, and training. FY 2013 OCO Plans: N/A					
Title: Technical & Program Management Office (PMO) Description: Conduct technical and program management activities. FY 2011 Accomplishments: Included contracted advisory and assistance services (A&AS), MITRE, travel, independent test, and other program management expenses. PMO also supported the TLE effort, acquisition strategy and Request For Proposal (RFP) development. FY 2012 Plans: Includes contracted advisory and assistance services (A&AS), MITRE, travel, independent test, and other program management expenses. Activities will also include source selection and award of the prime contract. FY 2013 Base Plans: Includes contracted advisory and assistance services (A&AS), MITRE, travel, independent test, and other program management expenses (PMO operations and acquisition development). Will also include DME efforts, management of the prime contract, test and evaluation of AF-IPPS Release 1, and preparation of the test plans for subsequent releases. FY 2013 OCO Plans: N/A	11.544	10.800	11.418	-	11.418
Title: Transition Lab Environment (TLE) and Evaluation Description: Preserve and maintain configuration management control of the Defense Integrated Military Human Resources System (DIMHRS) core capability, support Air Force technology and architecture decisions, and support functional evaluation and validation of the core capability. FY 2011 Accomplishments:	7.628	0.150	0.100	-	0.100

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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 Personnel and Pay System (AF-IPPS)</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Completed stand-up of the Data Development Environment (DDE) and Data Staging Environment (DSE) of the Air Force DIMHRS database. TLE also completed TLE documentation describing the environments, and transferred DIMHRS software assets from the Business Transformation Agency (BTA) to the Air Force.</p> <p>FY 2012 Plans: Continue to support TLE efforts and conduct potential decommissioning efforts.</p> <p>FY 2013 Base Plans: Complete decommissioning efforts.</p> <p>FY 2013 OCO Plans: N/A</p>					
<p>Title: Independent Verification and Validation (IV&V)</p> <p>Description: Conduct Independent Verification and Validation (IV&V) activities.</p> <p>FY 2011 Accomplishments: Began IV&V on program management (to include governance and risk management), quality management, requirements management, and configuration management prior to the AF-IPPS contract award. An overall Current State Assessment was completed on the AF-IPPS program.</p> <p>FY 2012 Plans: IV&V continues on program management (to include governance and risk management), quality management, requirements management, and configuration management prior to AF-IPPS contract award. An Independent Logistics Assessment (ILA) will also be executed.</p> <p>FY 2013 Base Plans: Contractor will conduct IV&V activities as required.</p> <p>FY 2013 OCO Plans: N/A</p>	1.096	1.375	1.537	-	1.537
<p>Title: Commercial-Off-The-Shelf (COTS) Software (S/W)</p> <p>Description: Renew COTS S/W licenses and extend existing agreements.</p> <p>FY 2011 Accomplishments:</p>	2.203	11.742	3.425	-	3.425

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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 Personnel and Pay System (AF-IPPS)</i>
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C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Renewed COTS S/W licenses for PeopleSoft. FY 2012 Plans: Renews existing COTS S/W and/or purchase development S/W and configure COTS products. Will also renew COTS S/W licenses for PeopleSoft. FY 2013 Base Plans: Will renew existing COTS S/W and/or purchase development S/W and configure COTS products. Will also renew COTS S/W licenses for PeopleSoft. [Note: Software required by Prime Contractor is identified in "Prime Contractor" category.] FY 2013 OCO Plans: N/A					
Title: Change and Transition Management Description: Conduct change management and transition management activities. FY 2011 Accomplishments: N/A FY 2012 Plans: (1) Stand up Data Management Environment (DME) within the Defense Information System Agency's (DISA) Rapid Access Computing Environment (RACE) by purchasing initial hardware and software required for effort to include configuration and test data profiling, extract/transform/load, and Meta data management tools; identification of Authoritative Data Source(s); design/development of repeatable processes for profiling; ontology development; and the cleansing and staging of the foundational data for re-use by Systems Integrator for Release 1. (2) Establishment of an operational platform capability that bridges the AF-IPPS application with the DoD and Air Force enterprise network and hardware environments within the timelines required to deploy the solution. (3) Workflows/E-forms. (4) Service Oriented Architecture (SOA) development to support AF-IPPS. (5) Change Management. FY 2013 Base Plans: Will continue (1) DME and development efforts within DISA RACE (2) Establish operational platform capability (3) Workflows/E-forms (4) Develop SOA (5) Change Management. FY 2013 OCO Plans:	-	39.015	16.013	-	16.013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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 Personnel and Pay System (AF-IPPS)</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
N/A					
Accomplishments/Planned Programs Subtotals	22.471	91.640	91.697	-	91.697

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• O&M: <i>PE 0901220F, Personnel Administration</i>	8.665	8.543	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• O&M (1)...: <i>PE 0901299F, AF A1 Systems</i>	0.000	0.000	6.741	0.000	6.741	6.579	6.814	6.863	6.996	Continuing	Continuing
• OPAF: <i>PE 0901250F, General Information Technology</i>	0.000	0.000	24.760	0.000	24.760	0.000	13.457	0.000	0.000	Continuing	Continuing

E. Acquisition Strategy
 AF-IPPS employs a multiple increment / multiple release acquisition strategy development contract that will be negotiated and awarded in a competitive environment.

The AF-IPPS acquisition strategy is a two increment approach, with multiple, discrete, and severable capability releases delivered every 18-24 months. For Increment 1, the government will conduct a full and open competitive (best value) source selection with a single contract award for blueprinting, Enterprise Resource Planning (ERP) implementation, integration with the government hosting environment, testing, delivery, and sustainment. Increment 2 will be a separate acquisition effort focused on the sustainment of the system.

F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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 Personnel and Pay System (AF-IPPS)</i>	PROJECT 676003: <i>HRM Structural Development</i>

AF-IPPS Notional Schedule	FY11				FY12				FY13				FY14				FY15				FY16				FY17			
	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
Transition Lab Environment (TLE) & Eval	Integration/Decommissioning																											
Independent Verification & Validation	Conduct IV&V activities on governance, risk management, requirements management, etc.																											
Commercial-Off-The-Shelf (COTS) S/W	License renewal, purchase development S/W, configure COTS products																											
Change & Transition Management	Develop change and transition management initiatives and products																											
Technical & Program Management (PMO)																												
Contracted A&AS, Other PM expenses, etc.	Milestone B Preparation								Management of Prime Contract, Test & Eval, etc.																			
Acquisition Strategy Development	RFP Activity				Source Sel				Prime Contract Award																			
Prime Contractor	Contract Execution																											
Blue Printing/Fit Gap Analysis									Blue Printing / Fit Gap Analysis																			
Release 1/Sustainment									Integration, Test, Fielding								Sustainment											
Release 2/Sustainment									Integration, Test, Fielding								Sustainment											
Release 3/Sustainment									Integration, Test, Fielding								Sus											
Release 4/Sustainment									Integration, Test, Fielding								Sustainment											
Release 5/Sustainment									Integration, Test, Fielding																			

The above notional schedule is awaiting approval by the Milestone Decision Authority (MDA) via the Acquisition Strategy Report (ASR) and validation based upon the winning bidder's proposal.

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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 Personnel and Pay System (AF-IPPS)</i>	PROJECT 676003: <i>HRM Structural Development</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Transition Lab Environment (TLE) & Eval	1	2011	1	2013
Independent Verification & Validation	1	2011	4	2016
Commercial-Off-The-Shelf (COTS) S/W	1	2011	4	2016
Change & Transition Management	1	2012	4	2017
Technical & Program Management (PMO)	1	2011	4	2017
Milestone B	4	2012	4	2012
Strategy Planning, RFP Activity (Development and Release)	1	2011	1	2012
Source Selection	1	2012	4	2012
Prime Contract Award	4	2012	4	2012
Contract Execution	4	2012	4	2017
Blue Printing / Fit Gap Analysis	4	2012	1	2015
Release 1/Sustainment	2	2013	3	2015
Release 2/Sustainment	1	2014	3	2016
Release 3/Sustainment	1	2014	4	2016
Release 4/Sustainment	2	2015	4	2017
Release 5/Sustainment	3	2016	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	40.936	35.245	17.037	-	17.037	37.740	34.440	29.906	30.301	Continuing	Continuing
675066: <i>Anti-Tamper Technology Executive Agent</i>	40.936	35.245	17.037	-	17.037	37.740	34.440	29.906	30.301	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 technology development and enhancement efforts among the Services, DoD Agencies, and laboratories, and with industry. The DoD ATEA will issue contracts for AT technology development as well as plus-up existing AT technology efforts to increase the technology readiness level. Priorities will be given to technologies that benefit the majority of the AT community. The Anti-Tamper technology development and enhancement efforts 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 research 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. 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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	42.255	35.467	30.338	-	30.338
Current President's Budget	40.936	35.245	17.037	-	17.037
Total Adjustments	-1.319	-0.222	-13.301	-	-13.301
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.051	-			
• Other Adjustments	-0.268	-0.222	-13.301	-	-13.301

Change Summary Explanation

FY11 Congressional General Reduction of 0.268M in Other Adjustment row.

FY12 Congressional General Reduction (FFRDC, Sec. 8023) of 0.222M.

FY13 funding decrease is due to higher Department of Defense priorities.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Anti-Tamper Technology	40.936	35.245	17.037
Description: Advanced Anti-Tamper Technology Executive Agent activities including: AFRL/Ryw Management, ATEA outsourcing, Anti-Tamper Verification and Validation, Assessments and technology development			
FY 2011 Accomplishments: Continue advanced Anti-Tamper Technology Executive Agent activities including: AFRL/Ryw Management, ATEA outsourcing, Anti-Tamper Verification and Validation, Assessments and Technology Development.			
FY 2012 Plans: Continue advanced Anti-Tamper Technology Executive Agent activities including: AFRL/Ryw Management, ATEA outsourcing, Anti-Tamper Verification and Validation, Assessments and Technology Development.			
FY 2013 Plans:			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Continue advanced Anti-Tamper Technology Executive Agent activities including: AFRL/RYW Management, ATEA outsourcing, Anti-Tamper Verification and Validation, Assessments and Technology Development.			
Accomplishments/Planned Programs Subtotals	40.936	35.245	17.037

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• NONE: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. 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.

F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

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

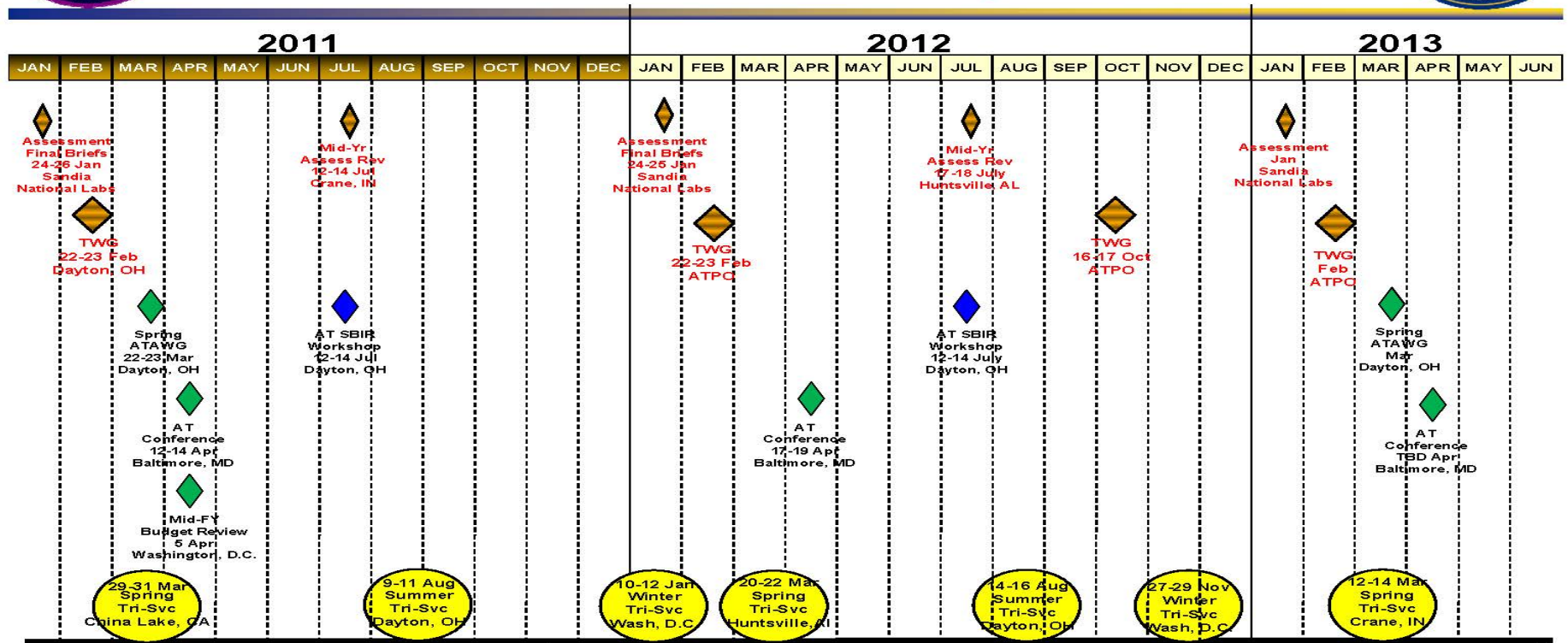
PROJECT
 675066: Anti-Tamper Technology Executive
 Agent



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CY11-12 AT Battle Rhythm Chart



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
ATEA Field Office	1	2011	4	2015
Database and Website Updates & Maintenance	1	2011	4	2015
Education & Outreach	1	2011	4	2015
AT Conference	1	2011	3	2015
Program V&V Evaluations	1	2011	4	2015
Assessments	1	2011	3	2015
Anti-Tamper Technology Development Enhancement	1	2011	4	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	129.864	93.808	53.208	-	53.208	41.173	5.653	3.901	-	Continuing	Continuing
675039: <i>B-52 Modernization</i>	129.864	93.808	0.065	-	0.065	-	-	-	-	Continuing	Continuing
675048: <i>1760 INTERNAL WEAPONS BAY UPGRADE (IWBU)</i>	-	-	16.490	-	16.490	11.373	5.653	3.901	-	Continuing	Continuing
675049: <i>MODE S/5 IFF</i>	-	-	1.202	-	1.202	-	-	-	-	Continuing	Continuing
675050: <i>CONECT</i>	-	-	34.700	-	34.700	29.800	-	-	-	Continuing	Continuing
675051: <i>ANTI-SKID</i>	-	-	0.751	-	0.751	-	-	-	-	Continuing	Continuing

Note

FOR FY05-FY12 THE B-52 SQUADRONS PROGRAM ELEMENT CONTAINED A SINGLE BPAC, 675039, B-52 MODERNIZATION. BEGINNING IN FY 13 AND OUT, SEPARATE BPACs HAVE BEEN ESTABLISHED AS FOLLOWS:

- 675039 B-52 MODERNIZATION
- 675048 1760 INTERNAL WEAPONS BAY UPGRADE (IWBU)
- 675049 MODE S/5 IFF
- 675050 CONECT
- 675051 B-52 ANTI-SKID

The EHF and SR2 programs are terminated in FY13 for higher Air Force priorities.

A. Mission Description and Budget Item Justification

B-52 MODERNIZATION PROGRAMS

Prior to FY13, all B-52 modernization programs were funded in a single BPAC, 675039 B-52 Modernization. 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 datalink communications for real time command and control, targeting, and intelligence. It upgrades antiquated air traffic management (ATM) systems with those supported by three key functions using satellite technology: Communications, Navigation and Surveillance (CNS). Modernization 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 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). Lastly, B-52 Modernization replaces the current aging strategic radar capability with a state-of-the-art, non-developmental radar.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012
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>CONNECT The B-52 Combat Network Communications Technology (CONNECT) acquisition program supports nuclear and conventional operations by upgrading the B-52 fleet with tactical datalink 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), Joint Air-to-Surface Standoff Missile/JASSM-Extended Range (JASSM/JASSM-ER), and other J-series weapons across the range of B-52 military operations and missions.</p> <p>In FY13, the CONNECT program will be restructured and reduced to only replacing the current Multi-Function Displays (MFD's) located at each of the crew stations, making the temporary Evolutionary Data Link (EDL) modification permanent, and demoding the CONNECT test aircraft as required. However, the current CONNECT development effort in FY12 will be completed as planned and the technical design/baseline will be maintained in support of future budget decisions.</p> <p>As the remaining requirement of the CONNECT program restructure, the Multi-Function Display (MFD) Replacement will develop wire-harnesses and installation tray configurations for the MFDs in each of the 76 B-52 aircraft. The existing legacy displays at each crew station will be removed and replaced with stock listed MFDs. This effort will replace the current MFDs due to long standing obsolescence issues. This configuration WILL NOT provide additional capability beyond what is currently available, but will retain growth potential for future upgrades.</p> <p>Evolutionary Data Link (EDL) was intended a bridge program to provide a secure voice/datalink capability between ground combat personnel and the B-52 weapon system, providing situational awareness of where friendly forces are in relation to enemy forces during targeting efforts while using precision guided weapons in combat. Originally fielded as a T1 Modification, the EDL 3.1 program will be finalized as a permanent modification, which entails procurement of sufficient Group B kits to modify the remainder of the fleet, along with procurement of spares and a long-term maintenance strategy with sufficient cover through the end of the aircraft's life cycle. Additional full-up kits will also be required to modify aircrew and ground maintenance trainers. Technical orders, operational procedure directives, and drawings will need to be generated from existing temporary documents. No additional certification testing (DT/OT) is anticipated, as at the end of EDL 3.1 fielding the program office will consider this a fielded, operational system.</p> <p>B-52 EHF The B-52 Extremely High Frequency (EHF) program integrates and installs the B-52 fleet with the equipment needed to provide secure, 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 (IERs). The B-52 EHF will install/integrate the Family of Advanced Beyond-Line-of-Sight (BLOS) Terminal (FAB-T) Airborne Wideband Terminal system developed and procured by Space and Missile Center (SMC) through PE 0303601F or other equivalent terminals/solutions, as necessary to meet user requirements. The B-52 EHF will also integrate a high data rate BLOS communication link supporting IP-based Global Information Grid (GIG) interoperability into the B-52 architecture. The B-52</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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EHF program is planned to be accomplished in two increments. Increment 1 preserves the existing B-52 capability to receive EAMs and report-backs via SATCOM to include an Environmental Control System (ECS) modification required to support the additional communication equipment. Increment 2 provides GIG and net-ready capability as well as full integration with other-B-52 systems.

The B-52 EHF program will be terminated in FY13 for higher AF priorities.

TRAINERS AND UPGRADES FOR CONECT, EHF & SR2

In order to maintain currency with the latest aircraft configuration, the CONECT, EHF & SR2 programs will update existing trainers or use computer-based training to add CONECT, EHF & SR2 functionality to meet user-training requirements and establish a system integration laboratory (SIL) for updates of the Weapon System Trainers (WST).

The Trainer and upgrades for CONECT, EHF, and SR2 will be terminated in FY13 for higher AF priorities.

SR2

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 APQ-166 radar is becoming unsupportable with increasing signs of performance degradation and multiple DMS and materiel shortage issues. The SR2 program is a radar replacement program that may 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, which supports all weather targeting and navigation to support the requirements of keeping the B-52 combat capable for its extended service life. Additionally, the remaining two legacy MFCDs will be upgraded to take advantage of the replacement radar's full capability.

The B-52 SR2 program will be terminated in FY13 for higher AF priorities.

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) and emerging requirement on current programs, upgrades to the B-52 SIL, AISF and WSTs, and weapon system operational/safety, supportability, reliability, and Total Ownership Cost (TOC) improvements.

ARMS CONTROL ACTIVITIES

Arms Control Activities under the New START Treaty drives the need to modify a number of B-52s to a conventional only role by removing the Code Enable Switch and associated equipment. This effort requires a complete design to remove the equipment from the aircraft and install metal plates prohibiting reinstallation of removed equipment to comply with treaty protocols.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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ADDITIONAL EFFORTS

B-52 modernization funds additional efforts that stem from the operation and maintenance of a 50-plus-year-old aircraft, such as parts obsolescence, DMS, and emerging requirements to add to or maintain the existing capabilities. Examples include, but are not limited to upgrades to outdated avionics computers, mission planning interfaces to JMPS, Air Force Mission Support System (AFMSS), and other mission planning systems (JMPS), upgrades to the EW suite, and studies and analysis. All B-52 development programs support planned requirements for unique identification in their production phases.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	146.096	133.261	78.369	-	78.369
Current President's Budget	129.864	93.808	53.208	-	53.208
Total Adjustments	-16.232	-39.453	-25.161	-	-25.161
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-39.265			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.500	-			
• SBIR/STTR Transfer	-8.623	-			
• Other Adjustments	-6.109	-0.188	-25.161	-	-25.161

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

Project: 675039: *B-52 Modernization*

Congressional Add: *Advanced Targeting Pod Integration - Congressional Add*

Congressional Add Subtotals for Project: 675039

Congressional Add Totals for all Projects

	FY 2011	FY 2012
	6.500	-
	6.500	-
	6.500	-

Change Summary Explanation

FY11 adjustments include -\$8.623 SBIR; Congressional Directed Reductions -\$24.700; Congressional adds of +\$13.000 for Internal Weapons Bay and +\$6.500 for ATP Interation; Congressional General Reductions -\$.909; -\$1.500 reprogramming for MEECN

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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

FY12 adjustments -\$11.265 Congressional Directed Reduction for SR2 identified excess, -\$5.000 for S/5 IFF late contract award, -\$10.000 for 1760 IWBU late contract award and -\$13.000 for B-52 EHF late contract award; Congressional General Reductions of -\$0.188 FFRDC

FY13 adjustments include +\$32.709 required to demodify the CONECT test aircraft, -\$48.273 termination of SR2 program, +\$4.045 MIL-STD-1760 IWBU Increment 2, +\$1.202 Mode S/5 adjustment to account for 1-year slip

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675039: <i>B-52 Modernization</i>	129.864	93.808	0.065	-	0.065	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The EHF and SR2 programs are terminated in FY13 for higher Air Force priorities.

A. Mission Description and Budget Item Justification

Prior to FY13, all B-52 modernization programs were funded in a single BPAC, 675039 B-52 Modernization.

B-52 MODERNIZATION PROGRAMS

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 datalink communications for real time command and control, targeting, and intelligence. It upgrades antiquated air traffic management (ATM) systems with those supported by three key functions using satellite technology: Communications, Navigation and Surveillance (CNS). Modernization 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 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). Lastly, B-52 Modernization replaces the current aging strategic radar capability with a state-of-the-art, non-developmental radar.

CONNECT

The B-52 Combat Network Communications Technology (CONNECT) acquisition program supports nuclear and conventional operations by upgrading the B-52 fleet with tactical datalink 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), Joint Air-to-Surface Standoff Missile/JASSM-Extended Range (JASSM/JASSM-ER), and other J-series weapons across the range of B-52 military operations and missions.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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>In FY13, the CONECT program will be restructured and reduced to only replacing the current Multi-Function Displays (MFD's) located at each of the crew stations, making the temporary Evolutionary Data Link (EDL) modification permanent, and demoding the CONECT test aircraft as required. However, the current CONECT development effort in FY12 will be completed as planned and the technical design/baseline will be maintained in support of future budget decisions.</p> <p>As the remaining requirement of the CONECT program restructure, the Multi-Function Display (MFD) Replacement will develop wire-harnesses and installation tray configurations for the MFDs in each of the 76 B-52 aircraft. The existing legacy displays at each crew station will be removed and replaced with stock listed MFDs. This effort will replace the current MFDs due to long standing obsolescence issues. This configuration WILL NOT provide additional capability beyond what is currently available, but will retain growth potential for future upgrades.</p> <p>Evolutionary Data Link (EDL) was intended a bridge program to provide a secure voice/datalink capability between ground combat personnel and the B-52 weapon system, providing situational awareness of where friendly forces are in relation to enemy forces during targeting efforts while using precision guided weapons in combat. Originally fielded as a T1 Modification, the EDL 3.1 program will be finalized as a permanent modification, which entails procurement of sufficient Group B kits to modify the remainder of the fleet, along with procurement of spares and a long-term maintenance strategy with sufficient cover through the end of the aircraft's life cycle. Additional full-up kits will also be required to modify aircrew and ground maintenance trainers. Technical orders, operational procedure directives, and drawings will need to be generated from existing temporary documents. No additional certification testing (DT/OT) is anticipated, as at the end of EDL 3.1 fielding the program office will consider this a fielded, operational system.</p> <p>B-52 EHF The B-52 Extremely High Frequency (EHF) program integrates and installs the B-52 fleet with the equipment needed to provide secure, 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 (IERs). The B-52 EHF will install/integrate the Family of Advanced Beyond-Line-of-Sight (BLOS) Terminal (FAB-T) Airborne Wideband Terminal system developed and procured by Space and Missile Center (SMC) through PE 0303601F or other equivalent terminals/solutions, as necessary to meet user requirements. The B-52 EHF will also integrate a high data rate BLOS communication link supporting IP-based Global Information Grid (GIG) interoperability into the B-52 architecture. The B-52 EHF program is planned to be accomplished in two increments. Increment 1 preserves the existing B-52 capability to receive EAMs and report-backs via SATCOM to include an Environmental Control System (ECS) modification required to support the additional communication equipment. Increment 2 provides GIG and net-ready capability as well as full integration with other-B-52 systems.</p> <p>The B-52 EHF program will be terminated in FY13 for higher AF priorities.</p> <p>TRAINERS AND UPGRADES FOR CONECT, EHF & SR2 In order to maintain currency with the latest aircraft configuration, the CONECT, EHF & SR2 programs will update existing trainers or use computer-based training to add CONECT, EHF & SR2 functionality to meet user-training requirements and establish a system integration laboratory (SIL) for updates of the Weapon System Trainers (WST). The Trainer and upgrades for CONECT, EHF, and SR2 will be terminated in FY13 for higher AF priorities.</p>		

UNCLASSIFIED

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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>SR2 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 APQ-166 radar is becoming unsupportable with increasing signs of performance degradation and multiple DMS and materiel shortage issues. The SR2 program is a radar replacement program that may 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, which supports all weather targeting and navigation to support the requirements of keeping the B-52 combat capable for its extended service life. Additionally, the remaining two legacy MFCDs will be upgraded to take advantage of the replacement radar's full capability.</p> <p>The B-52 SR2 program will be terminated in FY13 for higher AF priorities.</p> <p>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) and emerging requirement on current programs, upgrades to the B-52 SIL, AISF and WSTs, and weapon system operational/safety, supportability, reliability, and Total Ownership Cost (TOC) improvements.</p> <p>ARMS CONTROL ACTIVITIES Arms Control Activities under the New START Treaty drives the need to modify a number of B-52s to a conventional only role by removing the Code Enable Switch and associated equipment. This effort requires a complete design to remove the equipment from the aircraft and install metal plates prohibiting reinstallation of removed equipment to comply with treaty protocols.</p> <p>ADDITIONAL EFFORTS B-52 modernization funds additional efforts that stem from the operation and maintenance of a 50-plus-year-old aircraft, such as parts obsolescence, DMS, and emerging requirements to add to or maintain the existing capabilities. Examples include, but are not limited to upgrades to outdated avionics computers, mission planning interfaces to JMPS, Air Force Mission Support System (AFMSS), and other mission planning systems (JMPS), upgrades to the EW suite, and studies and analysis. All B-52 development programs support planned requirements for unique identification in their production phases.</p> <p>This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.</p>		

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012		
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 Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Title: Arms Control Activities</p> <p>Description: Arms Control Activation under the New START Treaty drives the need to modify approximately 28 B-52s to a conventional only role by removing the Code Enable Switch and associated equipment. This effort requires a complete design to remove the equipment from the aircraft and install metal plates prohibiting reinstallation of removed equipment to comply with treaty protocols.</p> <p>FY 2013 Plans: Studies/analysis to begin efforts to modify 28 aircraft to a conventional role. Design removal of equipment from aircraft and install equipment.</p>		-	-	0.065
<p>Title: CONECT</p> <p>Description: Integrates rapid re-tasking capability of J-series weapons and conventional cruise missiles; dedicated BLOS UHF comm/datalink; computer network infrastructure; digital interphone; Multi-Function Color Displays (MFCD); and an Intelligence Broadcast Receiver (IBR).</p> <p>FY 2011 Accomplishments: Resumed ground and flight testing of Drop C, Drop D and IBR. Began integration and lab testing of additional J-Series messages. Analyzed/Fixed ground/flight test issues as they were identified. Began redesign of DMS LRY boards identified during FY10. Designed, installed, and tested the redesign of the interphone system due to a deficiency found during flight test.</p> <p>FY 2012 Plans: Milestone C flight testing completed Nov 11. Complete developmental requirements necessary to successfully pass Milestone C and enter into Low Rate Initial Production (LRIP), as required. Complete flight testing of the additional J-Series messages and IBR (Drop D). Analyze/fix ground/flight test issues as they are identified. Continue DMS redesign development and test effort. Enter IOT&E. Procure hardware required for integration into training systems.</p> <p>FY 2013 Plans: Effort moved to BPAC 675050</p>		26.889	71.445	-
<p>Title: Advanced Targeting Pod</p> <p>Description: Develops software updates to integrate Sniper and LITENING ATPs and to add advanced ATP capabilities. Upgrades software functions of the AME control stick and display enabling all wired aircraft to utilize either Sniper or LITENING ATPs.</p> <p>FY 2011 Accomplishments:</p>		6.263	-	-

UNCLASSIFIED

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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 Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Completed software updates to integrate the LITENING Gen-4 ATP on the B-52.				
<p>Title: EHF</p> <p>Description: Integrates the FAB-T Airborne Wideband Terminal (AWT) or other equivalent terminals, as required, to preserve existing B-52 capability to receive EAMs and transmit report-backs; supports USSTRATCOM requirement for secure, survivable communications. Modifies B-52 ECS to support EHF and accommodate for B-52 aircraft system modifications. Future increment provides integration into GIG to provide wideband BLOS datalink.</p> <p>FY 2011 Accomplishments: Complete the additional risk reduction task efforts necessary to reach System Requirement Review (SRR). Initiate work efforts required to bring the EHF program through Preliminary Design Review (PDR), including ECS, upgrade the SIL, purchase additional government furnished property (GFP) for the SIL, and perform antenna field testing and analysis.</p> <p>FY 2012 Plans: Completion of efforts related to SRR of the EHF and ECS designs. Complete efforts associated with FAB-T analysis of B-52 unique requirements.</p> <p>FY 2013 Plans: Program terminated in FY13 for higher Air Force Priorities</p>		9.689	1.648	-
<p>Title: Anti-skid</p> <p>Description: Replaces legacy B-52 Anti-skid system with modernized system improving safety and cockpit display. Anti-Skid Detector has been identified a critical obsolescence item, which begins to be unsupported in FY15.</p> <p>FY 2011 Accomplishments: Continue phased Systems Safety Analysis; conduct Hardware in the Loop (HITL) simulation and test reports; develop preliminary Tech Order (TO) source data and installation procedures; manufacture and procure flight test articles and hardware; continue flight test planning activities; identify and deliver overhaul special test equipment.</p> <p>FY 2012 Plans: Continue with HITL Simulations; Flight Test Activities, TO source data, Airworthiness Certification documents.</p> <p>FY 2013 Plans: Effort moved to BPAC 675051</p>		1.881	6.218	-
<p>Title: SR2</p>		8.260	0.531	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012		
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 Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Description: Integrates modern non-developmental airborne radar replacing current, mission critical APQ-166 Strategic Radar, last upgraded in early-1980s. Legacy Strategic Radar is experiencing systemic sustainment and obsolescence issues.</p> <p>FY 2011 Accomplishments: The SR2 program will continue the risk reduction activities, and Material Solution Analysis phase. AFROC validated the AoA final report 3Q FY11. Drafting Capabilities Development Document (CDD) in preparation for RADAR competition.</p> <p>FY 2012 Plans: Complete SR2 studies and initiate program activities required for termination of effort in FY 13.</p> <p>FY 2013 Plans: Program terminated in FY13 for higher Air Force priorities</p>				
<p>Title: Mode S/5 IFF</p> <p>Description: Integrates modern IFF technology onto the B-52 by replacing the current system with APX-119; required by DoD, FAA and ICAO.</p> <p>FY 2011 Accomplishments: 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>FY 2012 Plans: Upgrade SIL, EMI/EMC Test procedures, identify long-lead components, complete all fabrication drawings, develop Installation Drawing package, conduct SIL testing, support ground/flight testing and Air Traffic Control Radar System IFF Mark 12/Mark 12A Systems platform certification, and report certification results.</p> <p>FY 2013 Plans: Effort moved to BPAC 675049</p>		8.583	1.166	-
<p>Title: 1760 IWB</p> <p>Description: 1760 Internal Weapons Bay Upgrade - provides internal J-series weapons capability through modification of CSRLs with IWIU and upgraded weapon management software.</p> <p>FY 2011 Accomplishments:</p>		37.522	12.800	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Continue Increment 1.1. Perform systems engineering and development to complete JDAM SMO FQT. Design, develop, fabricate and install modification components and drawings to yield four CRL prototypes for laboratory and flight testing to support concurrent testing in multiple locations. Develop test procedures and complete SIL testing of CRL prototypes and JDAM SMO software. Begin contractor support of ground and flight test concept development, planning, and test mission development. Support test instrumentation and modification to test aircraft. Begin support of fielding documentation. Design, develop and test software and hardware modifications to armament test support equipment. Begin mission planning modifications (UNIX system) in support of JDAM. Begin 1760 Internal Weapons Bay Increment 1, Phase 2 (Increment 1.2): development of JASSM/JASSM-ER SMO and MALD/MALD-J SMO modifications for internal bay capability. Begin B-52-specific JMPS development for JASSM and MALD and their respective variants. Begin Seek Eagle safe-separation analysis and modeling for bomb bay releases of JDAM, JASSM, MALD, and their variants.</p> <p>FY 2012 Plans: Continue Increment 1.1: Continue Seek Eagle safe separation analysis; conduct ground and flight testing of CRL prototype and JDAM SMO; finalize drawings for aircraft, CRL, and test support equipment modification kits; and complete development of technical orders. Continue Increment 1.2: Modify JASSM and MALD SMOs (including respective -ER and -J variant capabilities); perform engineering and test support for SIL, ground and flight testing. Develop technical orders. Continue B-52 JMPS development, testing, and certification with JASSM and MALD, including respective variants.</p> <p>FY 2013 Plans: Effort moved to BPAC 675048</p>			
<p>Title: Other Air Force Priorities</p> <p>Description: Excess funds from the terminated EHF and SR2 programs. Applied to higher AF priorities.</p> <p>FY 2011 Accomplishments: Excess funds from the terminated EHF and SR2 programs. Applied to higher AF priorities.</p>	24.277	-	-
Accomplishments/Planned Programs Subtotals	123.364	93.808	0.065

	FY 2011	FY 2012
<p>Congressional Add: Advanced Targeting Pod Integration - Congressional Add</p> <p>FY 2011 Accomplishments: Congressional add used to develop software updates to integrate the LITENING Gen-4 ATP on the B-52.</p>	6.500	-
Congressional Adds Subtotals	6.500	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
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)

Line Item	FY 2011	FY 2012	FY 2013	FY 2013	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Cost To	
			Base	OCO	Total					Complete	Total Cost
• PE 0305145F (RDT&E): <i>Arms Control Implementation, RDT&E AF</i>	0.000	0.000	4.000	0.000	4.000	0.000	0.000	0.000	0.000	0.000	4.000
• PE 0101113F (APAF BP11): <i>B-52 Squadrons, Aircraft Procurement, BP11, Mods, APAF</i>	18.778	92.241	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0809731F (APAF BP11): <i>Training Support to Units, Aircraft Procurement, BP11, Mods, APAF</i>	2.180	1.656	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0305145F (APAF BP11): <i>Implement New START Treaty, BP11, Mods APAF</i>	0.000	0.000	0.000	0.000	0.000	0.500	0.203	0.102	0.203	0.000	1.008
• PE 0101113F (APAF BP16): <i>B-52 Squadrons, Aircraft Procurement, BP16, Initial Spares, APAF</i>	7.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.006
• PE 0101113F (APAF BP12): <i>B-52 Squadrons, Aircraft Procurement, BP12, Support Equipment, APAF</i>	10.014	14.457	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	24.471

D. Acquisition Strategy

The B-52 CONECT EMD prime contract was a sole source to Boeing Defense, Space & Security (DSS), Wichita, KS. Boeing designed, developed, tested and procured the necessary equipment from their subcontractors; developed engineering drawings, logistic and technical data, and time compliance technical order (TCTO) for installation on the B-52. The EMD effort included installing and testing CONECT equipment on a B-52 aircraft. The B-52 EHF EMD prime contract was a sole source to Boeing DSS, Wichita, KS. Boeing preserved the B-52 capability to receive EAMS and report-backs, upgraded current SIL and the environmental control system. The Engineering Manufacturing Development (EMD) effort includes installing and testing the EHF equipment on a B-52 aircraft.

The B-52 ATP program software development contract is sole sourced to Boeing DSS, Wichita. The ATP trainer development contract will be awarded by OO-ALC via their trainer contract.

The 1760 Internal Weapons Bay program will acquire software development and hardware design via a sole-source contract to Boeing DSS, 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.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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 0101113F: <i>B-52 SQUADRONS</i>	675039: <i>B-52 Modernization</i>

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 was a sustainment upgrade to the B-52H fleet by leveraging existing technologies, designs, and radar components (e.g., line replaceable units (LRUs) already in production and fielded on other military platforms. It used existing, mature, proven technologies and focused resources on identifying and reducing the risk associated with integrating a modern radar onto the B-52H platform. The SR2 program was created to replace the AN/APQ-166 radar and several components in the Offensive Avionics System (OAS) associated with managing the video chain. Closeout activities will begin in FY12 due to program termination beginning in FY13.

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 Boeing, Wichita, KS.

The Tactical Data Link (TDL) will be sole source to Boeing DSS, Wichita, KS for the integration of TDL based on the CONECT baseline.

The Reconstitution of B-52 Nuclear Capability Study will be sole source to Boeing DSS.

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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-52H Modernization Schedule



	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Advanced Targeting Pod Integration	S/W Integration Only						
Strategic Radar Replacement (SR2)	Contract Closeout						
Anti-Skid Replacement							
Mode 5/S- Identification Friend or Foe Replacement							
Combat Network Communications Technology (CONNECT)							
Extreme High Frequency (EHF)	Contract Closeout						
MIL-STD-1760 Internal Weapons Bay Upgrade							
B-52 Modernization							

Material Solution
Technology Development/Trade Studies
Engineering and Manufacturing Development
Production and Deployment

Jan 12

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
CONNECT Ground/Flight Test Drop D	3	2011	3	2012
CONNECT LRIP Milestone C	3	2012	3	2012
CONNECT OA	2	2012	2	2012
B-52 EHF EMD Increment 1	1	2011	4	2012
Anti-Skid EMD	2	2011	4	2012
Anti-Skid LRIP	3	2013	3	2013
SR2 ASP	2	2012	2	2012
SR2 SRR-PDR	4	2012	4	2012
ATP Flight Test	1	2011	1	2011
Mode S/5 IFF EMD	2	2012	3	2014
Mode S/5 IFF LRIP	3	2014	3	2014
1760 IWB EMD	1	2012	3	2013
1760 IWB Milestone C	3	2013	3	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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 675048: <i>1760 INTERNAL WEAPONS BAY UPGRADE (IWBU)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675048: <i>1760 INTERNAL WEAPONS BAY UPGRADE (IWBU)</i>	-	-	16.490	-	16.490	11.373	5.653	3.901	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

NOTE: THIS IS NOT A NEW START. PRIOR YEAR COSTS FOR 1760 IWBU FY10-FY12 ARE CONTAINED IN BPAC 675039 ARMS CONTROL ACTIVITIES. THIS DOCUMENT REFLECTS NEW BPAC 675048 STRATING IN FY13.

A. Mission Description and Budget Item Justification

Beginning in FY13 Project Number 675048, 1760 Internal Weapons Bay Upgrade program transferred from Project Number 675039, B-52 Modernization.

MIL-STD 1760 Internal Weapons Bay Upgrade (IWBU) modifies aircraft software and the Common Strategic Rotary Launcher (CSRL) to carry MIL-STD-1760 based munitions in the B-52 internal weapons bay. This effort leverages the Integrated Weapons Interface Unit (IWIU) hardware developed under the Advanced Weapons Integration (AWI) program and previous work accomplished for a 2005 demonstration or developed using 2006 and 2007 Congressional Add funding. Production requirements include modification of 76 B-52 aircraft (Group A) and 44 CSRLs (Group B). No new CSRLs will be procured with this effort. This program will install MIL-STD 1760 interface cables and connectors on all B-52 aircraft, and will remove current munitions interface components, cables, connectors and mounting brackets from 44 CSRLs and replace removed items with MIL-STD 1760 capable components. Modified CSRLs will become "Conventional Rotary Launchers (CRLs)" and will lose their nuclear capability until integration of the MIL-STD 1760 Series II nuclear munitions and development and integration of a nuclear hardened IWIU. The sole line Replaceable Unit (LRU) for this modification is the IWIU, which is the same unit used for control of MIL-STD 1760-based munitions carried externally on the pylon. Phase I of the program, which supports eight-carriage capability on the CRL, will procure and install 44 IWIU pairs (one pair per CRL). Phase 2 will provide carriage expansion on the CRL through a software modification, and will increase the number of weapon stations from 8 to 16. Phase II will occur after Phase I procurement and installation is complete, using RDT&E funding.

B-52 Advanced Weapons Integration (AWI) initiatives previously managed under MN-4260 are now managed under three separate modifications for clarity in effort, funding and schedule. The initiatives are now described in MN-4260 Advanced Weapons Integration, MN-4693 Avionics Midlife Improvements, and MN-6884 MIL-STD-1760.

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

	FY 2011	FY 2012	FY 2013
Title: 1760 IWBU	-	-	16.490
Description: 1760 Internal Weapons Bay Upgrade - provides internal J-series weapons capability through modification of CSRLs with IWIUs and upgraded weapon management software.			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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 675048: <i>1760 INTERNAL WEAPONS BAY UPGRADE (IWBU)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<i>FY 2011 Accomplishments:</i> Effort accomplished in BPAC 675039			
<i>FY 2012 Plans:</i> Effort accomplished in BPAC 675039			
<i>FY 2013 Plans:</i> Continue Increment 1.1: Continue SEEK EAGLE safe separation analysis; conduct ground and flight testing of CRL prototype and JDAM SMO; finalize drawings for aircraft, CRL, and test support equipment modification kits; and complete development of technical orders. Continue Increment 1.2: Modify JASSM and MALD SMOs (including respective JASSM-ER and MALD-J variant capabilities); perform engineering and test support for SIL, ground and flight testing. Develop technical orders. Continue B-52 Joint Mission Planning System (JMPS) development, testing, and certification with JASSM and MALD including respective variants.			
Accomplishments/Planned Programs Subtotals	-	-	16.490

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 1: <i>PE 0101113F, B52 Squadrons, Aircraft Procurement BP11, Mods APAF</i>	11.541	0.000	3.238	0.000	3.238	30.983	6.690	0.000	0.000	Continuing	Continuing
• 2: <i>PE 0101113F, B52 Squadrons, Aircraft Procurement BP16, Initial Spares APAF</i>	0.000	0.000	0.000	0.000	0.000	0.550	0.557	0.000	0.000	Continuing	Continuing
• 3: <i>PE 0101113F, B-52 Squadrons, RDT&E, BPAC 675039</i>	37.522	12.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy
The 1760 Internal Weapons Bay Upgrade program will acquire software development and hardware design via a sole-source contract to Boeing DSS, 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 IWUUs, 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).

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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 675048: <i>1760 INTERNAL WEAPONS BAY UPGRADE (IWBU)</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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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 675048: <i>1760 INTERNAL WEAPONS BAY UPGRADE (IWBU)</i>



1760 Internal Weapons Bay Upgrade (IWBU) Schedule



	FY11	FY12	FY13	FY14	FY15	FY16	FY17
1760 IWBU	■	■ B ■	■ C ■	■	■		

- Material Solution
- Technology Development/Trade Studies
- Engineering and Manufacturing Development
- Production and Deployment

10 Jan 12

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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 675048: <i>1760 INTERNAL WEAPONS BAY UPGRADE (IWBU)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
1760 Tech Development/Trade Studies	1	2011	2	2011
1760 IWBU EMD	2	2011	3	2013
1760 IWBU Milestone C	3	2013	3	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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 675049: <i>MODE S/5 IFF</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675049: <i>MODE S/5 IFF</i>	-	-	1.202	-	1.202	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

NOTE: THIS NOT AN FY13 NEW START. PRIOR YEAR COSTS FOR MODE S/5 IFF FY11-FY12 ARE CONTAINED IN BPAC 675039 B-52 MODERNIZATION. THIS DOCUMENT REFLECTS NEW BPAC 675049 STRATING IN FY13.

A. Mission Description and Budget Item Justification

Beginning in FY13 Project Number 675049, Mode S/5 IFF, transferred from Project Number 675039, B-52 Modernization. Beginning in FY13, Project Number 675039 will be used for B-52 Modernization RDT&E funding only.

Mode S/5 IFF

Mode S/5 Identification Friend or Foe (IFF) is part of the Communication Navigation Surveillance/Air Traffic Management (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 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. The Mode S/5 portion includes upgrade of the current APX-64 with the APX-119 and will possess architecture to include in a future modification the simultaneous integration of Automatic Dependent Surveillance - Broadcast (ADS-B) capability required for operations in European airspace by 2015 and CONUS airspace by 2020. Data Guard is needed to prevent transmissions of classified data from the 1553 data bus.

CNS/ATM

Capabilities identified under CNS/ATM activities will include Frequency Management (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 IFF, Communications Management Unit, HF Data Link, 8.33MHz Very High Frequency (VHF), Auto Dependent Surveillance (both address and broadcast), and any follow-on activities to associated components/systems resulting from modifications to CNS/ATM systems.

BA7- This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013
Title: Mode S/5 IFF	-	-	1.202

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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 675049: <i>MODE S/5 IFF</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Description: Integrates modern IFF technology onto the B-52 by replacng the current system with APX-119 required by DoD, FAA and the International Civil Aviation Organization (ICAO).</p> <p>FY 2011 Accomplishments: Effort accomplished in BPAC 675039.</p> <p>FY 2012 Plans: Effort accomplished in BPAC 675039.</p> <p>FY 2013 Plans: Upgrade Systems Integration Lab (SIL), EMI/EMC Test procedures, indentify long-lead components, complete all fabrication drawings, develop Installation Drawing Package, conduct SIL testing, support ground/flight testing and Air Traffic Control Radar System IFF Mark 12/Mark 12A Systems platform certification, and report certification results.</p>			
Accomplishments/Planned Programs Subtotals	-	-	1.202

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 1: <i>PE 0101113F, B-52 Squadrons, Aircraft Procurement BP11, Mods APAF</i>	0.000	0.000	0.000	0.000	0.000	9.590	12.357	2.557	0.000	Continuing	Continuing
• 2: <i>PE 0101113F, B-52 Squadrons, Aircraft Procurement BP16, Initial Spares APAF</i>	0.000	0.000	0.000	0.000	0.000	0.779	0.803	0.000	0.000	Continuing	Continuing
• 3: <i>PE 0101113F, B-52 Squadrons, RDT&E, BPAC 675039</i>	8.583	1.166	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

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 Boeing, Wichita KS.

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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 675049: <i>MODE S/5 IFF</i>



Mode S/5 IFF Schedule



	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Mode S/5 Identification, Friend or Foe Replacement		◆ B	◆ C				

- Material Solution
- Technology Development/Trade Studies
- Engineering and Manufacturing Development
- Production and Deployment

Jan 12

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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 675049: <i>MODE S/5 IFF</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Mode S/5 IFF EMD	2	2012	3	2014
Mode S/5 IFF Milestone C	3	2014	3	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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 675050: <i>CONNECT</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675050: <i>CONNECT</i>	-	-	34.700	-	34.700	29.800	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

NOTE: THIS IS NOT AN FY13 NEW START. PRIOR YEAR COSTS FOR CONECT FY 05 - FY 12 ARE CONTAINED IN BPAC 675039 ARMS CONTROL ACTIVITIES. THIS DOCUMENT REFLECTS NEW BPAC 675050 STARTING IN FY 13.

A. Mission Description and Budget Item Justification

CONNECT
Starting in FY13, the CONECT program will be restructured to replace the current Multi-Function Displays (MFD's) located at each of the crew stations, make the temporary Evolutionary Data Link (EDL) modification permanent, and demod of the CONECT test aircraft as required. The current CONECT development program will be completed as intended.

The B-52 Combat Network Communications Technology (CONNECT) acquisition program supports nuclear and conventional operations by upgrading the B-52 fleet with tactical datalink and voice communications capabilities along with improved threat and situational awareness to support participation in network centric operations. The CONECT 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 CONECT 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), Joint Air-to-Surface Standoff Missile/JASSM-Extended Range (JASSM/JASSM-ER), and other J-series weapons across the range of B-52 military operations and missions.

As the remaining requirement of the CONECT program restructure, the Multi-Function Display (MFD) Replacement will develop wire-harnesses and installation tray configurations for the MFDs in each of the 76 B-52 aircraft. The existing legacy displays at each crew station will be removed and replaced with stock listed MFDs. This effort will replace the current MFDs due to long standing obsolescence issues. This configuration WILL NOT provide additional capability beyond what is currently available, but will retain growth potential for future upgrades.

Evolutionary Data Link (EDL) was intended a bridge program to provide a secure voice/datalink capability between ground fighting personnel and the B-52 weapon system, providing situational awareness of where friendly forces are in relation to enemy forces during targeting efforts while using precision guided weapons in combat. Originally fielded as a T1 Modification, the EDL 3.1 program will be finalized as a permanent modification, which entails procurement of sufficient Group B kits to modify the remainder of the fleet, along with procurement of spares and a long-term maintenance strategy with sufficient cover through the end of the aircraft's life

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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 675050: <i>CONNECT</i>
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cycle. Additional full-up kits will also be required to modify aircrew and ground maintenance trainers. Technical orders, operational procedure directives, and drawings will need to be generated from existing temporary documents. No additional certification testing (DT/OT) is anticipated, as at the end of EDL 3.1 fielding the program office will consider this a fielded, operational system.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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Title: CONNECT	-	-	34.700
Description: Integrates rapid re-tasking capability of J-series weapons and conventional cruise missiles, dedicated BLOS UHF comm/datalink; computer network infrastructure, digital interphone. Multi-Function Color Displays (MFCD); and an Intelligence Broadcast Receiver (IBR). Beginning in FY 13, CONECT is being restructured to make the Evolutionary Data Link Temporary Mod permanent and replace the legacy displays, due to obsolescence issues.			
FY 2011 Accomplishments: Effort accomplished in BPAC 675039.			
FY 2012 Plans: Effort accomplished in BPAC 675039.			
FY 2013 Plans: Initiate restructure of the B-52 CONECT program to include closeout of open contracts and demodification of the flight test aircraft. Continue replacement the current MFDs due to long standing obsolescence issues.			
Accomplishments/Planned Programs Subtotals			34.700

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 1: <i>B-52 Squadrons, Aircraft Procurement, BP11, Mods APAF</i>	0.000	0.000	0.000	0.000	0.000	0.000	17.519	25.604	23.298	4.800	71.221
• 2: <i>B-52 Squadrons, Aircraft Procurement, BP16, Initial Spares, APAF</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.795	1.428	0.000	2.223
• 3: <i>B-52 Squadrons, RDT&E, BPAC 675039</i>	23.543	65.460	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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 675050: <i>CONNECT</i>

D. Acquisition Strategy

The B-52 CONNECT EMD prime contract was a sole source to Boeing Defense, Space & Security (DSS), Wichita, KS. Boeing designed, developed, tested and procured the necessary equipment from their subcontractors; developed engineering drawings, logistic and technical data, and time compliance technical order (TCTO) for installation on the B-52.

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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 675050: <i>CONNECT</i>



CONNECT/Evolutionary Data Link (EDL) Schedule



	FY11	FY12	FY13	FY14	FY15	FY16	FY17
CONNECT/Evolutionary Data Link			◆ B		◆ C		2018

- Material Solution
- Technology Development/Trade Studies
- Engineering and Manufacturing Development
- Production and Deployment

10 Jan 12

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force **DATE:** February 2012

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 675050: <i>CONNECT</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CONNECT/EDL EMD	1	2013	4	2014
CONNECT/EDL Milestone C	2	2015	2	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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 675051: <i>ANTI-SKID</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675051: <i>ANTI-SKID</i>	-	-	0.751	-	0.751	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

NOTE: THIS IS NOT AN FY13 NEW START. PRIOR YEAR COSTS FOR ANTI-SKID FY10-FY12 ARE CONTAINED IN BPAC 675039 B-52 MODERNIZATION. THIS DOCUMENT REFLECTS NEW BPAC 675051 STARTING IN FY13

A. Mission Description and Budget Item Justification

Beginning in FY13 Project Number 675051, B-52 Anti Skid Replacement, transferred from Project Number 675039, B-52 Modernization.

The B-52 Anti-skid system is used to maintain control of aircraft during landings and taxi operations. The B-52 Anti-skid system prevents aircraft skidding by sensing the exact amount of brake pressure needed for safe braking under all runway conditions without tire damage. Previous B-52 Anti-skid supportability analysis, completed in 2006 by General Atomics, indicated a supportability end date of 2011, based on parts obsolescence, a lack of test equipment and a lack of repair personnel. Parts obsolescence continues to be a major supportability factor. However, since the previous analysis, test equipment and new depot maintenance procedures to refurbish previously failed Anti-skid detectors have been put in place in order to provide spares until 2014/2015 when the replacement will be available. The Anti-skid Replacement program develops and installs a new system. This effort includes an upgrade of the maintenance trainers.

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

	FY 2011	FY 2012	FY 2013
Title: Anti-skid	-	-	0.751
Description: Replaces legacy B-52 Anti-skid system with modernized system improving safety and cockpit display. Anti-skid detector has been identified a critical obsolescence item, which begins to be unsupportable in FY15.			
FY 2011 Accomplishments: Effort accomplished in BPAC 675039.			
FY 2012 Plans: Effort accomplished in BPAC 675039.			
FY 2013 Plans: Continue/complete Flight Test Activities, Flight Test Reports, update Technical Order (TO) data			
Accomplishments/Planned Programs Subtotals	-	-	0.751

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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 675051: <i>ANTI-SKID</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 1: <i>PE 0101113F, B-52 Squadrons, Aircraft Procurement BP11, Mods APAF</i>	0.000	0.000	4.626	0.000	4.626	6.737	6.011	0.915	0.930	Continuing	Continuing
• 2: <i>PE 0101113F, B-52 Squadrons, Aircraft Procurement BP16 Initial Spares APAF</i>	0.000	0.000	0.000	0.000	0.000	0.505	0.523	0.000	0.000	Continuing	Continuing
• 3: <i>PE 0101113F, B-52 Squadrons, RDT&E, BPAC 675039</i>	5.996	6.218	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

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

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.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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 675051: <i>ANTI-SKID</i>



B-52 Anti-Skid Replacement Schedule



	FY11	FY12	FY13	FY14	FY15	FY16	FY17
B-52 Anti-Skid Replacement							

- Material Solution**
- Technology Development/Trade Studies**
- Engineering and Manufacturing Development**
- Production and Deployment**

Jan 12

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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 675051: <i>ANTI-SKID</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Anti-skid EMD Test & Evaluation	2	2012	3	2013
Anti-skid LRIP	3	2013	3	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	3.518	0.803	0.431	-	0.431	0.450	0.458	0.466	0.651	Continuing	Continuing
674797: <i>Flight Testing & Navigation Enhancement</i>	3.518	0.803	0.431	-	0.431	0.450	0.458	0.466	0.651	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2012, Long Range Stand Off (LRSO) efforts were transferred to PE 0101125F, Nuclear Weapon Modernization, project number 657008, in order to support LRSO development.

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 W80 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.

The purpose of this program element is to ensure ALCM sustainability to 2030 in support of Air Force strategic nuclear deterrence and global strike mission requirements.

An ALCM Service Life Extension Program (SLEP) was developed to support ALCM Service Life to 2030. The results of SLEP studies identified system components and support equipment that will become non-supportable prior to 2030. Service life extension of this critical weapon is essential to meet United States Strategic Command (USSTRATCOM) deliberate planning commitments.

W80 Joint Test Assembly (JTA-8) Replacement was an effort to improve the unsupported W80 JTA-1, a simulated warhead used for flight testing. This replacement effort revised and improved the W80 JTA-1, Interface Control Documents (ICDs), provided integration support, and supported flight test qualification for the improved JTA-8. In FY09, the Research, Development, Test, and Evaluation (RDT&E) effort completed. Minimal effort remained through FY11 to finalize and complete archiving of all data.

The Aging and Surveillance program for ALCM continuously assesses critical components such as those in the safe arm and fuze subsystem, navigation/guidance system, and electrical/power distribution system. The program identifies aging trends prior to failures in fielded components that would result in fleet-wide reliability and supportability problems. Development funds are required to update software, test procedures, and test equipment. FY12 funding is to be used for developing hardware and software to update the contractor's testing complex/capabilities in order to add the Guided Missile Flight Controller (GMFC) to the annual Aging & Surveillance testing program.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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BA7- This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	3.613	0.803	0.431	-	0.431
Current President's Budget	3.518	0.803	0.431	-	0.431
Total Adjustments	-0.095	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.095	-	-	-	-

Change Summary Explanation

No significant Changes

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: W80 Joint Test Assembly (JTA-8) Replacement Support</p> <p>Description: W80 JTA-8 Replacement Support, W80 LEP; revise the W80-1 ICDs, provide integration support, and flight test qualification for improved JTA-8.</p> <p>FY 2011 Accomplishments: Complete integration support and flight test qualification. Complete archiving of all data.</p> <p>FY 2012 Plans: N/A</p>	0.010	-	-
<p>Title: ALCM Aging and Surveillance Program</p> <p>Description: Continue aging and surveillance program for ALCM system components to identify age related failure trends and prevent reliability and supportability issues.</p> <p>FY 2011 Accomplishments:</p>	0.311	0.803	0.431

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Continue execution of aging and surveillance program for ALCM system components to identify age related failure trends and prevent reliability and supportability issues. FY 2012 Plans: Continue execution of aging and surveillance program for ALCM system components to identify age related failure trends and prevent reliability and supportability issues. Develop hardware and software to update the contractor's testing complex/capabilities in order to add the Guided Missile Flight Controller (GMFC) to the annual A&S testing program. FY 2013 Plans: Continue execution of aging and surveillance program for ALCM system components to identify age related failure trends and prevent reliability and supportability issues.			
Title: Long Range Stand Off (LRSO) Description: Conduct Materiel Solution Analysis (MSA) phase for LRSO effort. FY 2011 Accomplishments: Support Materiel Development Decision (MDD). Initiate LRSO MSA phase activities. FY 2012 Plans: Effort transferred to PE 0101125F, Nuclear Weapons Modernization.	3.197	-	-
Accomplishments/Planned Programs Subtotals	3.518	0.803	0.431

D. Other Program Funding Summary (\$ in Millions)			FY 2013	FY 2013	FY 2013						
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0101122F - ALCM, MPAF, Missil...: ,	10.735	9.955	13.620	0.000	13.620	11.448	11.706	3.153	0.000	Continuing	Continuing
• PE 0101122F - ALCM, MPAF, Replen...: ,	0.264	1.296	5.206	0.000	5.206	4.561	4.838	2.283	2.318	Continuing	Continuing
• PE 010122F - ALCM, OPAF, Electro...: .	1.575	1.582	1.635	0.000	1.635	1.659	1.687	1.716	1.761	Continuing	Continuing
• PE 0101125F, RDT&E AF: <i>Nuclear Weapon Modernization Long Range Stand-Off</i>	0.000	9.926	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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D. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0604932F: <i>Long Range Stand-Off</i>	0.000	0.000	2.004	0.000	2.004	5.000	41.698	209.083	352.923	Continuing	Continuing

E. Acquisition Strategy

The ALCM JTA-8 Replacement Support was performed utilizing a Firm Fixed Price (FFP) contract.

The ALCM Aging and Surveillance Program is being executed by the prime contractor utilizing annual delivery orders on a Firm Fixed Price (FFP) contract. A new contract in FY12 will change the period of performance from June-to-June to December-to-December.


F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>

0101122F Schedule

	FY11	FY12	FY13	FY14	FY15	FY16	FY17
W80 JTA-8 Support	[Bar]						
ALCM Aging & Surveillance Program	[Bar]						
LRSO MDD Preparation	[Bar] 						
LRSO Materiel Solution Analysis Phase	[Bar]						

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
W80 JTA-8 Support	1	2011	4	2011
ALCM Aging & Surveillance Program Development	1	2011	4	2017
LRSO MDD	4	2011	4	2011
LRSO MSA Phase	4	2011	2	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	33.063	33.011	16.265	-	16.265	19.589	11.453	0.087	-	Continuing	Continuing
675344: <i>B-1B Modernization</i>	33.063	33.011	16.265	-	16.265	19.589	11.453	0.087	-	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 provides Research, Development, Test & Engineering (RDT&E) funding for the B-1B modernization program. The modernization program addresses potential aircraft obsolescent issues due to Diminishing Manufacturing Sources (DMS) and provides new and improved capabilities to the B-1B weapon system that require significant hardware and software development and testing. Vertical Situational Display Upgrade (VSDU) development effort is currently addressing reliability and maintainability issues with the primary flight displays, which are quickly becoming unsupportable due to DMS for repair parts. B-1B improvement efforts include, but are not limited to, the development of the Fully Integrated Data Link (FIDL) and Self Contained Standby Attitude Indicator (SCAI). Fully Integrated Data Link (FIDL) will provide Link 16 line of sight (LOS) and Joint Range Extension (JRE) beyond-line-of-sight (BLOS) data link capability and supports machine-to-machine transfer of target data to the B-1. SCAI is the backup to the primary flight instruments and provides indications of attitude, airspeed, mach, altitude and vertical velocity. This development activity will replace the current obsolete legacy SCAI with a more reliable/supportable off-the-shelf display. SCAI must be functional and reliable in the event of primary flight display failure, and is a Mission-Essential Subsystem List (MESL) item required for flight. 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, program management administrative (PMA) costs and initiatives for future weapon system enhancements, including efforts to improve weapon system operational capabilities, safety, supportability, maintainability, reliability, and total ownership cost. Previous development activities such as Central Integrated Test System (CITS) upgrade, Radar Reliability and Maintainability Improvement Program (RMIP), Inertial Navigation System (INS) upgrade, and ALQ-161A Preprocessor Avionics Control Unit (PACU) software re-host/development, have completed development and are now in production. The Active Electronically Scanned Array (AESA) Radar study has been completed. All B-1B development programs support planned requirements for unique identification in their production phases. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	33.234	33.011	3.834	-	3.834
Current President's Budget	33.063	33.011	16.265	-	16.265
Total Adjustments	-0.171	-	12.431	-	12.431
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.171	-	12.431	-	12.431

Change Summary Explanation

FY 2011 adjustments (Congressional General Reductions -\$0.171, Congressional Directed Reductions \$0.0, Congressional Adds \$0.0, Congressional Directed Transfers \$0.0) are reflected in BY1 Other Adjustment Row.

FY 2013: Program increased by \$12.4M to support new start development effort in the Self-Contained Standby Attitude Indicator (SCAI) and continue development in simulator training systems.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: B-1B Modernization	33.063	30.611	3.865
Description: Continued B-1B Modernization			
FY 2011 Accomplishments: Preprocessor Avionics Control Unit (PACU) software migration concluded in FY11. Radar Reliability and Maintainability Improvement Program (RMIP) concluded flight test, Functional Configuration Audit/Physical Configuration Audit (FCA/PCA) and development effort in FY11. Inertial Navigation System (INS) received Milestone C approval in Oct 2010. INS continued its flight test program, FCA/PCA and development effort. Fully Integrated Data Link (FIDL) completed Phase II of flight test and FCA/PCA. Vertical Situation Display Upgrade (VSDU) entered flight test. Simulator/Trainer development/support continued. General development related support for the flight test effort continued.			
FY 2012 Plans:			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Vertical Situation Display Upgrade (VSDU) will continue flight test and address any software or hardware issues that resulted from flight testing. VSDU will also complete FCA and modify test aircraft 0068. Inertial Navigation Systems (INS) and Fully Integrated Data Link (FIDL) will conclude. General development related support for the flight test efforts will continue. FY 2013 Plans: Vertical Situation Display Upgrade (VSDU) will complete flight test. VSDU will also complete the modification to test aircraft 0068. VSDU activities will conclude.			
Title: B-1B Development of Simulators for CITS, FIDL and VSDU Description: B-1B Development of Simulators for CITS, FIDL and VSDU FY 2012 Plans: Simulator and training upgrades will begin the software and hardware development and testing to support fielding of VSDU, Central Integrated Test System (CITS), and Fully Integrated Data Link (FIDL). FY 2013 Plans: Simulator and training upgrades will continue the software and hardware development and testing to support fielding of VSDU, Central Integrated Test System (CITS), and Fully Integrated Data Link (FIDL).	-	2.400	10.400
Title: B-1B Attitude Indicator Description: Development of the Self Contained Standby Attitude Indicator. FY 2013 Plans: Development of a replacement for the B-1 Self Contained Standby Attitude Indicator will begin.	-	-	2.000
Accomplishments/Planned Programs Subtotals	33.063	33.011	16.265

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF PE 0101126F, B-1B Squadrons...: <i>B-1B Squadrons, Mods</i>	207.091	197.706	149.487	0.000	149.487	131.927	90.847	110.629	112.729	Continuing	Continuing
• APAF PE 0809731F, Training Suppo...: <i>Training Support to Units, Mods</i>	0.394	0.301	0.269	0.000	0.269	0.333	0.431	0.442	0.450	Continuing	Continuing

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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D. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF PE 0207446F, Bomber Tactica...: <i>Bomber Tactical Data Link, Mods</i>	0.000	0.000	0.000	0.000	0.000	0.221	0.325	0.089	0.000	Continuing	Continuing
• APAF PE 0101126F, B-1B Squad (3)...: <i>B-1B Squadrons, Spares</i>	12.455	12.121	17.988	0.000	17.988	24.424	18.374	13.625	13.640	Continuing	Continuing
• APAF PE 0207446F, Bomber Tac (4)...: <i>Bomber Tactical Data Link, Spares</i>	0.000	0.000	0.000	0.000	0.000	0.916	0.928	0.934	0.000	Continuing	Continuing
• APAF PE 0101126F, B-1B Squad (5)...: <i>B-1B Squadrons, Common Support Equipment</i>	6.236	0.787	6.729	0.000	6.729	3.214	2.020	2.037	2.096	Continuing	Continuing
• APAF PE 0101126F, B-1B Squad (6)...: <i>B-1B Squadrons, Post Production Support</i>	6.990	4.743	0.965	0.000	0.965	3.683	0.000	0.000	0.000	Continuing	Continuing

E. Acquisition Strategy

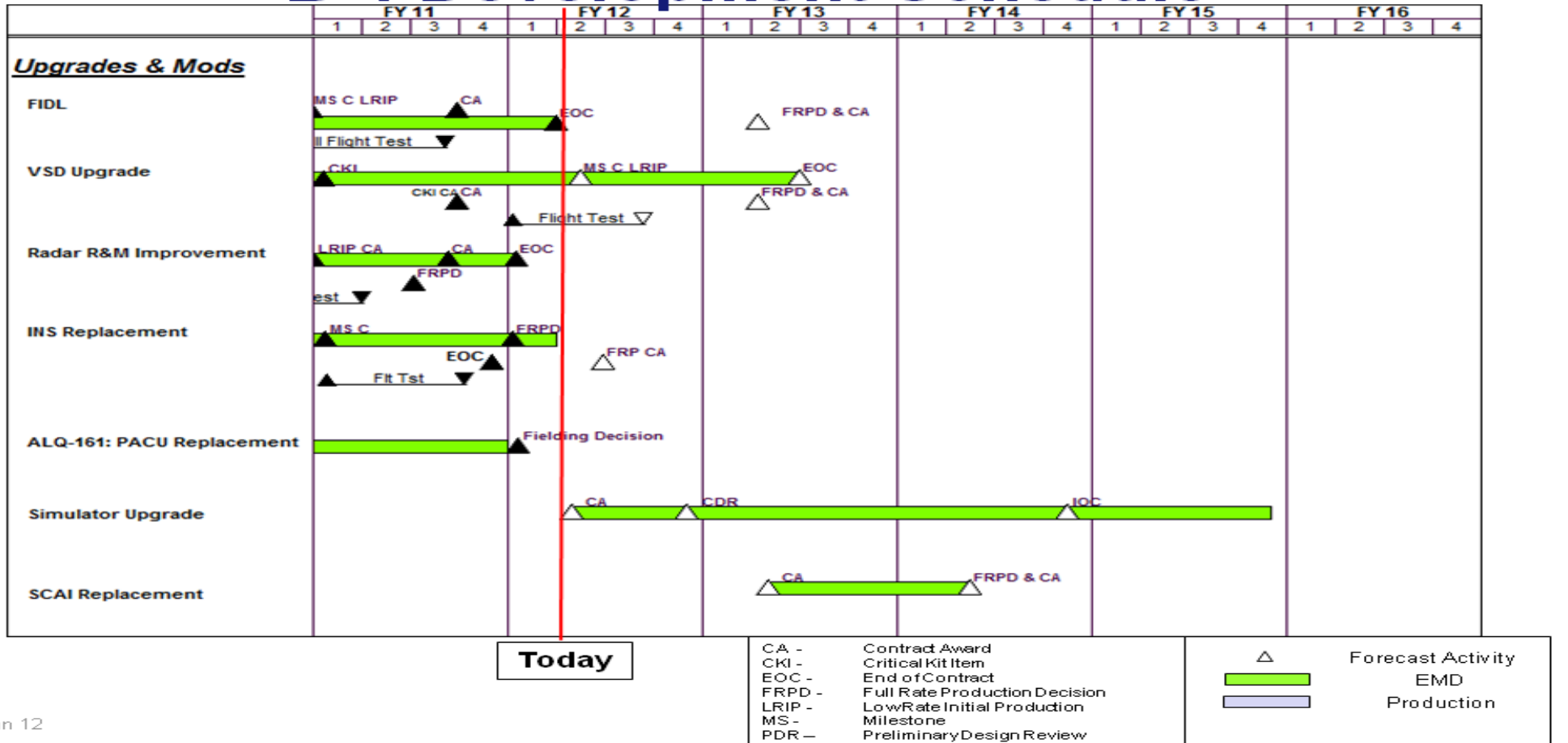
Key elements of the overall B-1B Modernization acquisition strategy include: use of sole source contract with a prime/integrating contractor (Boeing); installed performance responsibility; use of Cost Plus Incentive Fee (CPIF) development contracts; and combining developmental upgrades with software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

F. 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.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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

B-1 Development Schedule



5 Jan 12

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
VSDU Development Testing (DT)	1	2012	3	2012
VSDU Milestone C Low Rate Initial Production (LRIP)	2	2012	2	2012
VSDU Full Rate Production (FRP) Decision Review (DR)	2	2013	2	2013
VSDU Full Rate Production (FRP) Contract Award (CA)	2	2013	2	2013
RMIP Estimate of Completion (EOC)	1	2012	1	2012
INS FRP DR	1	2012	1	2012
INS FRP CA	2	2012	2	2012
FIDL FRP DR	2	2013	2	2013
FIDL FRP CA	2	2013	2	2013
Training Systems Upgrades CA	3	2012	3	2012
Training Systems Upgrades CDR	4	2012	4	2012
Training Systems IOC	4	2014	4	2014
PACU Fielding Decision	1	2012	1	2012
SCAI Replacement CA	2	2013	2	2013
SCAI Replacement FRPD	2	2014	2	2014

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	244.732	280.319	35.970	-	35.970	116.144	117.505	48.576	33.219	Continuing	Continuing
675345: <i>B-2 Modernization</i>	244.732	27.135	21.759	-	21.759	101.808	101.493	34.544	19.001	Continuing	Continuing
676021: <i>BASELINE SUPPORT</i>	-	9.523	7.875	-	7.875	14.336	16.012	14.032	14.218	Continuing	Continuing
676022: <i>EHF SATCOM and Computer</i>	-	202.534	6.336	-	6.336	-	-	-	-	Continuing	Continuing
676023: <i>Defensive Management System</i>	-	41.127	-	-	-	-	-	-	-	Continuing	Continuing

Note

In FY13, B-2 Defensive Management System (DMS) funding in PE 0101127F project 676023 was transferred to PE 0605931F, project 653844.

The Cost to Complete and Total Cost for MDAP projects in this program element are documented in the R3. The Cost to Complete and Total Cost on the R2 are entered as "Continuing" and not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding.

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, with necessary upgrades, 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 preserve this strategic advantage as well as increase flexibility, lethality, and survivability of this national asset tasked across a broad spectrum, from tactical to national strategic objectives. System upgrades include, but are not limited to, Defensive Management System Modernization (DMS-M), Extremely High Frequency (EHF) Satellite Communications (SATCOM) and Computers Increments 1 and 2, alternative communications solutions such as Very Low Frequency antenna and receiver, Radar Modernization Program (RMP), Massive Ordnance Penetrator (MOP), Adaptable Communications Suite (ACS), Link-16 Center Instrument Display (CID)/In-Flight Replanner (IFR), Ultra High Frequency (UHF) SATCOM, Mode 5/S Identification Friend or Foe (IFF)-Automatic Dependence Surveillance-Broadcast, armament integration, structures, engine improvements, low observable modifications, trainers, support equipment, Electro-magnetic pulse (EMP) Hardening Testing, and advanced low detection data links upgrades.

Specific efforts will be managed under one of four projects:

- 676021 Baseline Support
- 676022 EHF SATCOM and Computer
- 676023 Defensive Management System Modernization
- 675345 B-2 Modernization

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	260.466	340.819	432.155	-	432.155
Current President's Budget	244.732	280.319	35.970	-	35.970
Total Adjustments	-15.734	-60.500	-396.185	-	-396.185
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-82.500			
• Congressional Rescissions	-22.000	-			
• Congressional Adds	-	22.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.703	-			
• SBIR/STTR Transfer	-7.538	-			
• Other Adjustments	14.507	-	-396.185	-	-396.185

Change Summary Explanation

FY2011 adjustments of \$14.507M is comprised of: +\$16.0M Congressional Add for Mixed loads and other capabilities; -\$1.410M for economic assumptions and -\$0.084M for Congressional General reductions

FY2012 Directed Reduction of EHF SATCOM and Computer Increment 2 due to contract delays (-\$82.5M). Congressional Add for Mixed loads capability (+\$22.0M).

FY2013 changes

Increased funding for Defensive Management System (+\$109.822M)

Removed funding for EHF SATCOM and Computer Increment 2 (-\$238.086M);

Transferred Defensive Management System funds out of PE 0101127F, project 676023 into PE 0605931F project 653844 (\$281.056M).

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675345: <i>B-2 Modernization</i>	244.732	27.135	21.759	-	21.759	101.808	101.493	34.544	19.001	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY12:
 Funding for Baseline Support transferred from project 675345 to project 676021.
 Funding for Extremely High Frequency (EHF) SATCOM and Computers transferred from project 675345 to project 676022.
 Funding for DMS-M upgrade transferred from project 675345 to project 676023.

In FY13
 Funding for DMS-M transferred from PE 0101127F, project 676023 to PE 0605931F, project 653844.

A. Mission Description and Budget Item Justification

Totals include funding for Major Defense Acquisition Program Number (MDAP PNO) 224, B-2 EHF Increment 1; and MDAP PNO 376, B-2 Radar Modernization Program (RMP).

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, with necessary upgrades, 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. An array of planned RDT&E projects are necessary to preserve a strategic advantage as well as increase the flexibility, lethality, and survivability of this national asset tasked across a broad spectrum, from tactical to strategic national objectives.

The B-2 has a projected lifecycle through 2058. To ensure the fleet can accomplish its nuclear and conventional mission in highly defended and anti-access environments, periodic modernization efforts must be undertaken to upgrade combat capability as well as improve the viability, supportability, and survivability of the weapon system. Recent and ongoing investments in necessary avionics, structures, communications, and weapons upgrades keep the B-2 viable in the immediate future. Current system upgrades include Defensive Management System Modernization (DMS-M)(PE 65931F/653844 starting in FY13), Extremely High Frequency (EHF) Satellite Communications (SATCOM) and Computers Increments 1 and 2, alternative communication solutions such as Common Very Low Frequency (VLF) Receiver (CVR), Radar Modernization Program (RMP), Massive Ordnance Penetrator (MOP), Stores Management Operational Flight Plan (SMOFP) Rehost, Adaptable Communications Suite (ACS), Link-16 Center Instrument Display (CID)/In-Flight Replanner (IFR), Ultra High Frequency (UHF) SATCOM, armament integration, structures upgrades, engine improvements, low observable signature and supportability modifications, training systems improvements, support equipment modifications, Electro-magnetic pulse (EMP) hardening testing, mission planning improvements, flight test aircraft sustainment and upgrades, and advanced low detection data link upgrades.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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>

The Flexible Strike modernization efforts will establish an improved foundation for the Moving Target Kill and Non-Traditional Surveillance and Reconnaissance combat capabilities necessary to ensure air superiority in 21st century combat environments. Efforts include, but are not limited to, Stores Management hardware and software upgrades necessary to accommodate integration of updated conventional and nuclear System II weapons into the B-2 fleet and provide ability to carry different weapons carriage equipment in the separate weapons bays, providing weapons flexibility to combat planners. Other Flexible Strike efforts include the development of a Universal Armament Interface (UAI), integrating multi-platform advanced data links with satellite communication links, integration of the Global Positioning System (GPS) M-Code hardware and software necessary for modernization of Air Traffic Management communications, navigation, and surveillance systems, and enhancement of the Mode 5/S Identification Friend or Foe (IFF) system and add Automatic Dependence Surveillance-Broadcast (ADS-B) capability mandated by US and European military and civil aviation agencies to improve situational awareness of controlled and contested airspaces. Finally, improvements are required on the platform data/voice/video recorders to comply with Air Force mandates to provide specific flight and platform data, frequency of update, data precision, and recording duration that does not exist in the aircraft recorder today.

After Flexible Strike modifications are implemented, the B-2 fleet will be poised to deliver Moving Target Kill combat capability by leveraging a high precision weapon such as the Small Diameter Bomb II as the mobile target kill munition, forming a foundation to exploit the modularity and improved precision algorithms of Universal Armament Interface (UAI), as well as a display infrastructure that can support the integration of this weapon. The inherent low observable characteristics of the B-2 platform will enable accomplishment of a Non-Traditional Surveillance and Reconnaissance (NTSR) mission. Necessary modifications include, but are not limited to, enhancement of current radar modes, high resolution improvements to the synthetic aperture radar, and improved information fusion required to gather, analyze, and communicate enemy movements and combat capabilities to friendly follow-on forces and the National Command Authority and other operation centers via the Global Information Grid.

The B-2 is currently undergoing modernization of avionics/communications systems, structure components, engines, armament systems, low observable components, core training system components, core flight test systems as well as analysis of Electro-Magnetic Pulse (EMP) protection capabilities, and studying future Integrated Strike Warfare (ISW) and Advanced Tactical Data Link (ATDL) integration requirements.

DMS-M will maintain B-2 direct attack capability while addressing emerging 21st century threats and countering continuing obsolescence issues (transferring to PE 65931F/653844 in FY13). EHF SATCOM and Computers Increment 1 will provide upgraded flight management computer processors, increased data storage, re-hosted flight management operational flight program, and a high bandwidth data bus in order to prevent degradation of existing capabilities resulting from EHF SATCOM installation. EHF Increment 2 will provide full spectrum secure, survivable, two-way communications and net ready upgrades for command and control of nuclear and conventional National Command Authority directives. The Common Very Low Frequency (VLF) Receiver (CVR) effort develops and integrates a receive only VLF receiver and antenna subsystem to provide secure, survivable strategic communication capability for the B-2. The receiver will be adaptable for use by other platforms. RMP changes the operating frequency of the radar system to enable the B-2 to operate as a primary user worldwide. ACS provides a non-integrated communications system that allows the B-2 fleet to receive a complete integrated mission, time sensitive targeting information, intelligence updates, and positive command and control procedures. Link-16 CID/IFR allows the B-2 access to theater tactical data links, improving on-board situational awareness while greatly enhancing the ability of theater commanders to coordinate the B-2 with other assets. The Center Instrument Display Digital Video Recorder provides the ability to

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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 0101127F: <i>B-2 SQUADRONS</i>	675345: <i>B-2 Modernization</i>

record video signals from the display to the existing recorders in the cockpit. This capability allows mission playback, operational assessments and de-briefs, and provides aircrew training.

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, as well as destroy more targets per sortie. Integration of the 30K lb class Massive Ordnance Penetrator (MOP) provides the nation with the ability to hold additional hardened, deeply buried 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 Need requirements. The MOP integration project designs, develops, integrates, and tests hardware, software, and support equipment required for carriage, jettison, and release of two MOP weapons from the B-2. The initial MOP Quick Reaction Capability effort will expand to include a fully developed Launch Acceptability Region, a single Smart Bomb Rack Controller per bay, dual fuse control, and mixed carriage capability with Smart Bomb Rack Assemblies (SBRA). Further expansion includes the addition of a GPS signal into the weapons bays to allow Monitor and Control Equipment (MACE) weapons, SBRA weapons, and RLA weapons to acquire and track GPS satellites prior to weapons release, maintaining unjammed delivery accuracy in a jamming environment. The Stores Management Operational Flight Plan (SMOFP) Rehost and Mixed Carriage program will rehost stores management software onto a new integrated processor to enable simultaneous configuration of multiple weapons carriage capabilities, providing B-2 with maximum strategic nuclear and conventional strike flexibility.

Planned upgrades also include integration of upgrades to currently fielded or inventory weapons and weapons development, such as, but not limited to, B61 Life Extension Program, GBU-28 E/B Selective Availability Anti-Spoofing Module(SAASM) with impact angle control, GBU-28 D/B SAASM with impact angle control, Hard Target Void Sensing Fuse, extended range Joint Air-to-Surface Standoff Missile, and JDAM-5000. The B-2 Weapons System Tester and its associated Test Program Sets (TPS), to include but not limited to, the Common Organizational Level Tester (COLT), MUSTANG, and B-2 Armament Tester, will be continually upgraded for increased reliability and performance to support current and new B-2 weapon suspension and release systems.

Structures improvements include, but are not limited to, windshield redesign which provides improved components and windshield manufacturing processes to remedy windshield cracking and electrical conductivity limitations; Proximity Sensor Logic Unit upgrade counters obsolescence issues with electronic components, improving safety of maintainers working around various aircraft bay doors, improving reliability of onboard landing gear indicators, and mitigating safety risks to the aircraft and aircrew.

Engine improvements include, but are not limited to, the F118 engine service life extension program and the extended mission oil tank upgrade; 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.

Low Observable Signature and Supportability Modification (LOSSM) projects decrease low observable (LO) maintenance, increase aircraft availability, and maintain and improve the combat-ready LO signature for the B-2 fleet. LOSSM projects improve materials, structures, and diagnostic tools necessary to evaluate LO materials and systems in the B-2 fleet. LOSSM projects include, but are not limited to, improvements to door edge treatments, tile protection system, magnetic radar absorbing material picture framing and other LO materials development, hot structures, tailpipe material improvements, nozzle bay doors, windshield low observable treatments,

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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>
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advanced topcoat system, radar frequency diagnostics and other LO diagnostic tools development such as, but not limited to, improvements of the signature diagnostic system database, tier one material inspection system, and other low observable special test equipment and information systems.

The B-2 Training System keeps pace with aircraft system updates while countering obsolescence issues. Improvements include, but are not limited to, threat environment upgrades, radar display emulation, aero fidelity of key pilot procedures, improvements to courseware, upgrades of display systems, subsystems, and simulation and computational processors. Other upgrades include, but are not limited to, conventional and nuclear guided weapons delivery training, expanded crypto keyfill capability in simulators, upgraded capability to train weapons as powered up upon completion of initial conditions, as well as upgrades to the electronic combat environment threat database tools to include threat laydown, threat parametrics, and Integrated Air Defense System. Upgrades also include the Defensive Management System simulation (DMS), DMS alternative/emergency procedures courseware, and Mission Generation System. Enhancements are provided to the B-2 family of trainers to include the Weapon System Trainers, Mission Trainer, Cockpit Procedures Trainers, Computerized Maintenance Training System, Weapon System Training Aids, Weapons Load Trainer, Crew Escape System Maintenance Trainer, Flight Control System Trainer, instructor-operator station, and Training System Support Center.

EMP hardening requirements test individual components and the entire B-2 fleet at higher EMP levels for Nuclear Command and Control Survivability.

Integrated Strike Warfare (ISW) Airborne Network project models and simulates 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 establishes a viable end-to-end distributed modeling and simulation network.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: B-2 Baseline Support</p> <p>Description: B-2 Baseline Support, to include developmental flight test aircraft modification and base of operations, Mission Planning, long range planning, studies, program integration activities, acquisition planning, and other government costs.</p> <p>FY 2011 Accomplishments: Continue B-2 Baseline Support to include developmental flight test</p>	13.893	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force				DATE: February 2012	
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>	
B. Accomplishments/Planned Programs (\$ in Millions)					
aircraft modification and base of operations, Mission Planning, long range planning, studies, program integration activities, acquisition planning, and other government costs.					
FY 2012 Plans: In FY12, funding for Baseline transferred from project 675345 to project 676021.					
Title: B-2 EHF SATCOM and Computers Increment 1 System Development					
Description: Development of EHF SATCOM and Computers Increment 1 System Development and Demonstration (SDD) and design and fabrication of new and modified components for two test aircraft and two Force Development Evaluation (FDE) aircraft.					
FY 2011 Accomplishments: Continue EHF SATCOM and Computers Increment 1 SDD, continue flight test, leading to a successful Milestone C decision in FY12.					
FY 2012 Plans: In FY12, funding for Extremely High Frequency (EHF) SATCOM and Computers transferred from project 675345 to project 676022.					
Title: B-2 EHF SATCOM and Computers Increment 2 System Development					
Description: B-2 EHF SATCOM and Computers Increment 2 Component Advanced Design risk reduction activities.					
FY 2011 Accomplishments: Continue EHF SATCOM and Computer Increment 2 component advanced design, risk reduction activities, and antenna system functional review (SFR) to meet Milestone B in FY13.					
FY 2012 Plans: In FY12, funding for Extremely High Frequency (EHF) SATCOM and Computers transferred from project 675345 to project 676022.					
Title: B-2 Defensive Management System (DMS) Modernization					
Description: B-2 Defensive Management System Modernization (DMS-M) development to improve aircrew situational awareness through replacement of passive antennas, receiver/processors, display processors, address critical system shortfalls, and improve DMS component repair issues.					
	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
	52.827	-	-	-	-
	62.643	-	-	-	-
	85.260	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force				DATE: February 2012	
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>	
B. Accomplishments/Planned Programs (\$ in Millions)					
FY 2011 Accomplishments: Continue development of DMS core capability, complete system functional review (SFR), achieve a successful Milestone A decision, and begin Technology Development phase.					
FY 2012 Plans: In FY12, funding for DMS-M upgrade transferred from project 675345 to project 676023. In FY13, DMS-M will transfer to PE 0605931F, project 653844.					
Title: B-2 Modernization					
Description: B-2 Modernization development of Low Observable Signature and Supportability Modifications (LOSSM), Proximity Sensor Logic Unit (PSLU), Massive Ordnance Penetrator (MOP) Integration and Enhancements, Integrated Windshield Solution, Training System core upgrades, Electro Magnetic Pulse (EMP) testing, Common Organizational Level Tester (COLT), Adaptable Communication Suite (ACS), Integrated Strike Warfare/Advanced Tactical Data Link development, Stores Management Operational Flight Plan Rehost and Mixed Carriage, other weapon integration efforts, Common Very Low Frequency Receiver, Mode S/5 IFF, and other airframe and avionics improvements.					
FY 2011 Accomplishments: Continue development of ongoing LOSSM, Integrated Strike Warfare (ISW), Advanced Tactical Data Link (ATDL), Training System core upgrades, PSLU, GBU-28, ACS, Stores Management Operational Flight Plan Rehost and Mixed Carriage, MOP Enhancements, other weapon integration efforts, and other airframe, avionics integration improvements. Complete development efforts for COLT and the EMP Hardening test.					
FY 2012 Plans: Continue development of on-going LOSSM improvements, ISW/ATDL, Training System core upgrades, ACS, Stores Management Operational Flight Plan Rehost and Mixed Carriage, MOP Enhancements, other weapon integration efforts, Common Very Low Frequency Receiver, and other airframe, avionics improvements. Complete PSLU and ISW/ATDL.					
FY 2013 Base Plans: Continue development of on-going LOSSM improvements, ISW/ATDL, Training Systems core upgrades, ACS, MOP Enhancements, other weapon integration efforts, Stores Management Operational Flight Plan Rehost and					
	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
	30.109	5.135	2.007	-	2.007

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Mixed Carriage, other weapons integration efforts, Common Very Low Frequency Receiver, and other airframe and avionics improvements.					
Title: B-2 Stores Management Operational Flight Program (SMOFP) rehost and mixed carriage Description: Re-host the B-2 stores management software onto a larger, more capable processor, enabling mixed carriage loads (simultaneous carriage of rotary launcher and smart bomb rack) for the B-2 FY 2012 Plans: Initial efforts funded with congressional add FY 2013 Base Plans: Initiate development efforts for the B-2 stores management operational flight program re-host and mixed weapons carriage effort. FY13 will focus on efforts to enter engineering and manufacturing development (EMD)	-	22.000	9.300	-	9.300
Title: Common Very Low Frequency Receiver Description: Provide secure, survivable strategic communication for the B-2, while providing a hardware receiver that can be adapted for other aircraft or ground station use. FY 2013 Base Plans: Initiate development efforts for the Common Very Low Frequency Receiver	-	-	10.452	-	10.452
Accomplishments/Planned Programs Subtotals	244.732	27.135	21.759	-	21.759

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• PE 0101127F, B-2 Squadrons, APAF...: <i>B-2 Modification Funding</i>	34.486	1.514	13.221	0.000	13.221	9.947	12.559	25.279	81.463	Continuing	Continuing
• PE 0809731F, Training Support to...: <i>B-2 Training Support Modification</i>	0.000	0.000	4.038	0.000	4.038	5.006	6.477	6.630	7.776	Continuing	Continuing
• PE 0207446F, Bomber Tactical Dat...: <i>B-2 Tactical Data Link Modification</i>	0.000	0.000	0.000	0.000	0.000	0.140	0.100	0.060	0.000	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
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 2011	FY 2012	FY 2013	FY 2013	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Cost To	
			Base	OCO	Total					Complete	Total Cost
• PE 0101127F, B-2 Squadrons, (3)...: <i>B-2 Interim Contractor Support</i>	20.640	39.239	39.416	0.000	39.416	39.513	39.736	32.585	33.113	Continuing	Continuing
• PE 0101127F, B-2 Squadrons, (4)...: <i>B-2 Post Production Support</i>	5.432	10.080	7.683	0.000	7.683	7.584	6.064	12.511	12.715	Continuing	Continuing
• PE 0101127F, B-2 Squadrons, (5)...: <i>B-2 Initial Spares</i>	15.005	11.477	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 02074467F, B-2 Squadrons, APA...: <i>B-2 Tactical Data Link Initial Spares</i>	0.000	0.000	0.000	0.000	0.000	0.339	0.343	0.346	0.000	Continuing	Continuing
• PE 0101127F, B-2 Squadrons, (7)...: <i>B-2 Depot Activation</i>	155.433	11.891	10.262	0.000	10.262	9.803	10.455	10.768	10.943	Continuing	Continuing
• PE 0207439F, B-2 Squadrons, APAF...: <i>B-2 Egin Depot Activation</i>	10.188	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0101127F, B-2 Squadrons, OPAF...: <i>B-2 Other Equipment</i>	0.000	0.490	0.599	0.000	0.599	0.649	0.503	0.505	0.512	Continuing	Continuing

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.

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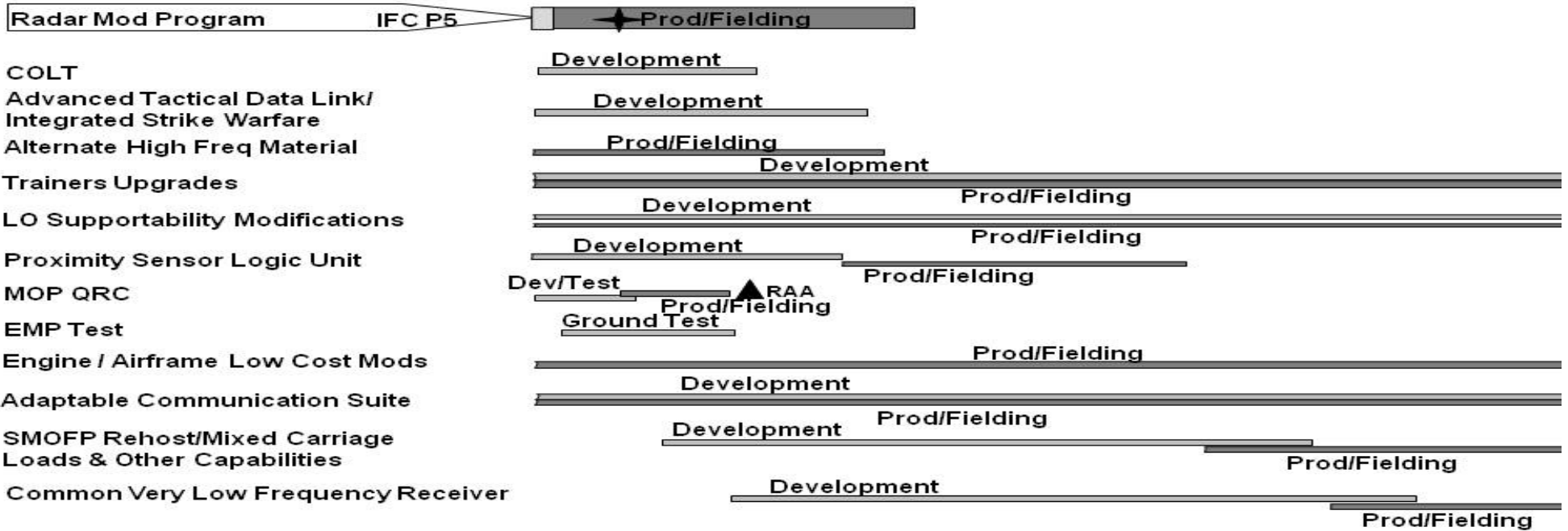
Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101127F: <i>B-2 SQUADRONS</i>	PROJECT 675345: <i>B-2 Modernization</i>



B-2 Modernization Detailed Schedule

Modernization Aircraft Mods

FY11	FY12	FY13	FY14	FY15	FY16	FY17
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✦ Initial Operational Capability

FY11	FY12	FY13	FY14	FY15	FY16	FY17
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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Radar Modernization Program LRIP Installs complete	1	2011	2	2011
Radar Modernization Program FRP Installs complete	4	2011	1	2013
Completion of MOP QRC Flight/Weapons Tests	4	2011	4	2011
MOP QRC RAA	4	2011	4	2011
MOP Enhancements Development Contract Award	3	2012	3	2012
SMOFP Rehost/Mixed Carriage Ph 1 Contract Award	4	2012	4	2012
Common Very Low Frequency Receiver Development Contract Award	3	2013	3	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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 676021: <i>BASELINE SUPPORT</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
676021: <i>BASELINE SUPPORT</i>	-	9.523	7.875	-	7.875	14.336	16.012	14.032	14.218	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note
In FY12, funding for Baseline Support transferred from project 675345 to the new project 676021.

A. Mission Description and Budget Item Justification

Baseline Support maintains the B-2 unique flight test aircraft, as well as obtains, modifies, and operates a flying test bed, developmental hardware/software and test equipment, to support developmental systems integration and flight test, reducing the need for additional operational aircraft and accelerating deployment of advanced operational capabilities to the warfighter. Baseline Support also ensures the Mission Planning system keeps pace with aircraft modifications and improves the mission planning core system. Baseline Support provides for other B-2 unique government costs and includes acquisition planning activities for future capabilities such as, but not limited to, Advanced Tactical Data Link efforts, Moving Target Kill capability, High Resolution Synthetic Aperture Radar and Enhanced Radar Modes, F118 Service Life Extension and F118 Extended Mission Oil Tank Upgrades, B61 Life Extension Program, Universal Armament Interface, System 2 Nuclear Interface, Global Positioning System/M-Code Receivers, Joint Precision Approach and Landing System upgrades, Radar Processor Modernization, Automatic Dependent Surveillance – Broadcast IFF, Flight Data and Voice Recorder, Communications/ Navigation/Surveillance-Air Traffic Management, and integration of currently fielded or new weapons including, but not limited to, GBU E/B Selective Availability and Anti Spoofing Module (SAASM)with impact angle control, GBU D/B SAASM with impact angle control, Hard Target Void Sending Fuse, Joint Air-to-Surface Standoff Missile Extended Range, and Joint Direct Attack Munition-5000.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Baseline Support Acquisition Planning	-	0.901	0.711	-	0.711
Description: Baseline Support provides for other B-2 unique government costs and includes acquisition planning activities for future capabilities, Training System core support, long range planning, studies, and program integration activities.					
FY 2011 Accomplishments: FY11 effort covered under project 675345.					
FY 2012 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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 676021: <i>BASELINE SUPPORT</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Continue Baseline Support activities including acquisition planning for future capabilities, Training System core support, long range planning, studies, and program integration activities.</p> <p>FY 2013 Base Plans: Continue Baseline Support activities including acquisition planning for future capabilities, Training System core support, long range planning, studies, and program integration activities.</p>					
<p>Title: Baseline Support Flight Test</p> <p>Description: Baseline Support Flight Test maintains the B-2 unique flight test aircraft 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 accelerating deployment of advanced operational capabilities to the warfighter.</p> <p>FY 2011 Accomplishments: FY11 effort covered under project 675345.</p> <p>FY 2012 Plans: Continue B-2 Flight Test activities, maintaining the B-2 unique flight test aircraft as well as obtaining, modifying, and operating a flying test bed and developmental hardware/software and test equipment, to support developmental systems integration and flight test.</p> <p>FY 2013 Base Plans: Continue B-2 Flight Test activities, maintaining the B-2 unique flight test aircraft and as well as obtaining, modifying, and operating a flying test bed and developmental hardware/software and test equipment to support developmental systems integration and flight test.</p>	-	6.645	5.684	-	5.684
<p>Title: Baseline Support Mission Planning</p> <p>Description: Baseline Support Mission Planning improvements ensure the mission planning system keeps pace with aircraft modifications and improves mission planning core systems.</p> <p>FY 2011 Accomplishments: FY11 effort covered under project 675345.</p> <p>FY 2012 Plans:</p>	-	1.977	1.480	-	1.480

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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 676021: <i>BASELINE SUPPORT</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Continue B-2 Mission Planning activities, keeping pace with aircraft modifications and improving mission planning core systems. <i>FY 2013 Base Plans:</i> Continue B-2 Mission Planning activities, keeping pace with aircraft modifications and improving mission planning core systems.					
Accomplishments/Planned Programs Subtotals	-	9.523	7.875	-	7.875

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

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.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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 676021: <i>BASELINE SUPPORT</i>



B-2 FY13 PB Baseline Detailed Schedule

FY11	FY12	FY13	FY14	FY15	FY16	FY17
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BASELINE

Flight Test Core



Mission Planning



Release 4.3.0.1
Release 4.3.1



Acquisition Planning



Other Govt Costs



Initial Operational Capability

FY11	FY12	FY13	FY14	FY15	FY16	FY17
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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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 676021: <i>BASELINE SUPPORT</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Mission Planning Release 4.3.0.1	2	2011	2	2011
Mission Planning Release 4.3.1	3	2011	2	2012
FY12 Flight Test Core Support Contract Award	1	2012	1	2012
FY13 Flight Test Core Support Contract Award	1	2013	1	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
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 676022: <i>EHF SATCOM and Computer</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
676022: <i>EHF SATCOM and Computer</i>	-	202.534	6.336	-	6.336	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY12, funding for Extremely High Frequency (EHF) SATCOM and Computers transferred from project 675345 to project 676022.

EHF Increment 2 program funding was removed in the FY13 PB due to higher Air Force priorities.

A. Mission Description and Budget Item Justification

The aging Ultra High Frequency (UHF) Military Satellite Communications system is being phased out and replaced by the Advanced Extremely High Frequency (AEHF) Satellite Communications (SATCOM) system. The B-2 Extremely High Frequency (EHF) SATCOM program supports the replacement of the present B-2 UHF Terminal Set with an EHF SATCOM system that will be compatible with the legacy MILSTAR I/II satellite constellation and the future AEHF satellite constellation. The B-2 EHF SATCOM system is one element of a system-of-systems that includes the AEHF satellites, multiple platforms, and the Family of Advanced Beyond-Line-of-Site Terminals (FAB-T) or other equivalent terminals, as required. The B-2 EHF SATCOM upgrade is an incremental program.

EHF Increment 1 provides upgraded Flight Management Control Processors, increased data storage, rehosted flight management operational flight program, and a high bandwidth data bus in order to prevent degradation of existing capabilities. Additionally, the Increment 1 Integrated Processing Unit and Disk Drive Unit architectures establish a high speed fiber optic structure network as well as maintain connectivity to legacy interfaces. EHF Increment 1 provides a processing growth path to future B-2 upgrades.

EHF Increment 2 integrates the FAB-T Government Furnished Equipment, or other equivalent terminals (if required), into the B-2 as well as develops and installs a low-observable antenna system consisting of arrays, antenna line replaceable units, and structural modifications for both power and cooling. This upgrade is critical to ensure the B-2 is compatible with the next generation communications satellite architecture and is absolutely essential in providing uninterrupted, highly survivable, two-way communications required for the command and control of the nation's strategic nuclear and conventional forces. Connectivity is mandatory to enable network centric enabled attack in an anti-access environment. Due to integration issues and schedule delays, the Air Force is currently pursuing alternative communication solutions, such as a Very Low Frequency antenna and terminal modification effort.

Increment 3 enables the B-2 to interface with the Global Information Grid and provides net ready capability.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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 676022: <i>EHF SATCOM and Computer</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: B-2 EHF SATCOM and Computers Increment 1 System Development</p> <p>Description: EHF SATCOM and Computers Increment 1 System Development and Demonstration (SDD), and design and fabrication of new and modified components for two test aircraft and two Force Development Evaluation aircraft.</p> <p>FY 2011 Accomplishments: FY11 effort covered under Project Number 675345.</p> <p>FY 2012 Plans: Continue EHF SATCOM and Computers Increment 1 SDD, complete Initial Operational Test & Evaluation (IOT&E), and begin Low Rate Initial Production.</p> <p>FY 2013 Base Plans: Complete EHF SATCOM and Computers Increment 1 SDD, complete IOT&E, and begin Full Rate Production.</p>	-	57.069	6.336	-	6.336
<p>Title: B-2 EHF SATCOM and Computers Increment 2 System Development</p> <p>Description: Development of EHF SATCOM and Computer Increment 2 Component Advanced Design and risk reduction activities.</p> <p>FY 2011 Accomplishments: FY11 effort covered under Project Number 675345.</p> <p>FY 2012 Plans: Complete EHF SATCOM and Computer Increment 2 Component Advanced Design and risk reduction activities to achieve a successful system Preliminary Design Review (PDR).</p> <p>FY 2013 Base Plans: EHF Increment 2 program funding was removed in the FY13 PB due to higher Air Force priorities.</p>	-	145.465	-	-	-
Accomplishments/Planned Programs Subtotals	-	202.534	6.336	-	6.336

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• PE 0101127F, B-2 Squadrons, APAF...: <i>EHF Inc I Kits and Installs</i>	0.000	29.501	65.037	0.000	65.037	7.469	8.373	0.000	0.000	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
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 676022: <i>EHF SATCOM and Computer</i>			

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• PE 0101127F, B-2 Squadrons, (1)...: <i>EHF Inc 1 Interim Contract Support</i>	0.000	0.101	0.481	0.000	0.481	0.489	0.840	0.739	0.000	Continuing	Continuing
• PE 0101127F, B-2 Squadrons, (2)...: <i>EHF Inc 1 Initial Spares</i>	0.000	0.654	6.481	0.000	6.481	5.429	0.739	0.000	0.000	Continuing	Continuing
• PE 0101127F, B-2 Squadrons, (3)...: <i>EHF Inc 1 Depot Activation</i>	0.000	3.925	2.703	0.000	2.703	0.192	0.196	0.000	0.000	Continuing	Continuing

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.

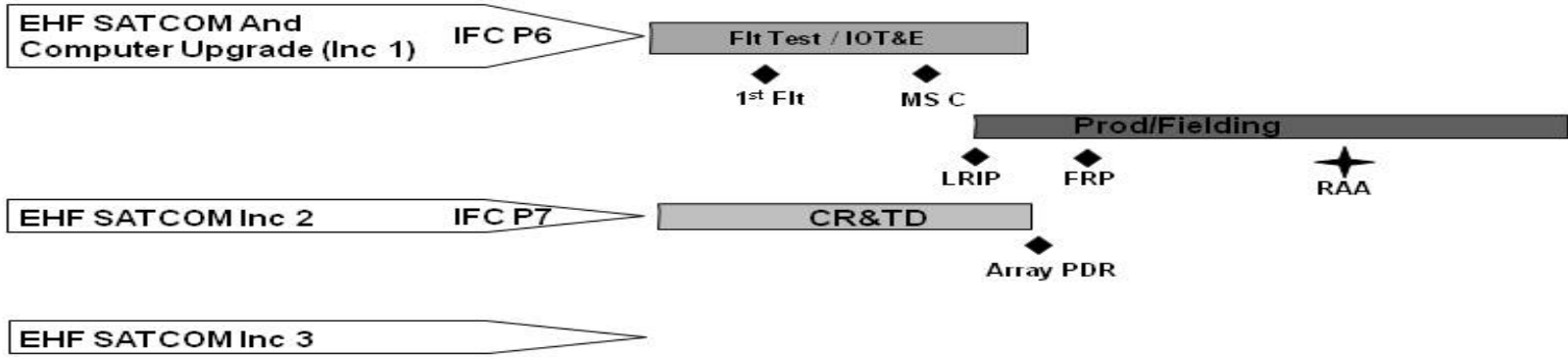
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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0101127F: B-2 SQUADRONS	PROJECT 676022: EHF SATCOM and Computer



B-2 FY13 PB EHF Detailed Schedule

FY11	FY12	FY13	FY14	FY15	FY16	FY17
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RM

★ Required Assets Available

FY11	FY12	FY13	FY14	FY15	FY16	FY17
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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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 676022: <i>EHF SATCOM and Computer</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
EHF Increment 1 Milestone C Decision	1	2012	1	2012
EHF Increment 1 LRIP Contract Award	2	2012	2	2012
EHF Increment 1 FRP Contract Award	2	2013	2	2013
EHF Increment 2 Array Preliminary Design Review	4	2012	4	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
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 676023: <i>Defensive Management System</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
676023: <i>Defensive Management System</i>	-	41.127	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY12, funding for DMS upgrade transferred from project 675345 to project 676023.
In FY13, funding transfers to PE 65931F, project 653844.

A. Mission Description and Budget Item Justification

The B-2 Defensive Management System Modernization (DMS-M) program maintains the B-2 direct attack capability while addressing emerging 21st century threats. DMS-M is the #1 priority modification program in the B-2 program office. DMS-M will upgrade the Electronic Support Measures, antennas, and display processing units. Modernization of this system will resolve the #1 obsolescence issue in the B-2 fleet.

The B-2 DMS-M will provide the Joint Force Commander and the B-2 fleet with advanced situational awareness, improved supportability, enhanced lethality, increased platform survivability, and networked battlespace awareness. The B-2 DMS-M upgrade will provide the following core capabilities for the B-2 and joint warfighting force:

- 1) Ability to provide indication, type, and position of airborne and ground-based radio frequency (RF) threats with the situational awareness needed to avoid, engage, or negate threats,
- 2) Improved RF threat information that can be reported to control agencies or inter-flight for improved situation/battlespace awareness,
- 3) Ability to adequately control, process, and display incoming threat information to the aircrew and provide updated battle-space awareness, and
- 4) Improved supportability and reduced operations and maintenance costs.

As DMS-M requires increased functionality and capability of the display processor, it includes FY10 and future year budgets transitioned from the B-2 Integrated Display System modification (MN-110041). FY10 Congressional Plus-up for B-2 Strike Control System establishes the foundation for all future data fusion and pilot-vehicle interface upgrades. Funds were applied to the DMS-M development program.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: B-2 Defensive Management System (DMS) Modernization	-	41.127	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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 676023: <i>Defensive Management System</i>
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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Description: DMS Modernization program develops improved aircrew situational awareness through replacement of passive antennas, receiver/processors, display processors; also addresses critical system shortfalls, and improves DMS component repair issues.</p> <p>FY 2011 Accomplishments: FY11 effort covered under Project Number 675345.</p> <p>FY 2012 Plans: Continue DMS Modernization technology development leading to Preliminary Design Review and a successful Milestone B decision in FY14.</p> <p>FY 2013 Base Plans: FY13 effort covered under PE 0605931F, project 653844</p>					
Accomplishments/Planned Programs Subtotals	-	41.127	-	-	-

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• N/A: PE 0605931F	0.000	0.000	0.000	281.056	281.056	318.150	254.961	216.195	141.114	Continuing	Continuing

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

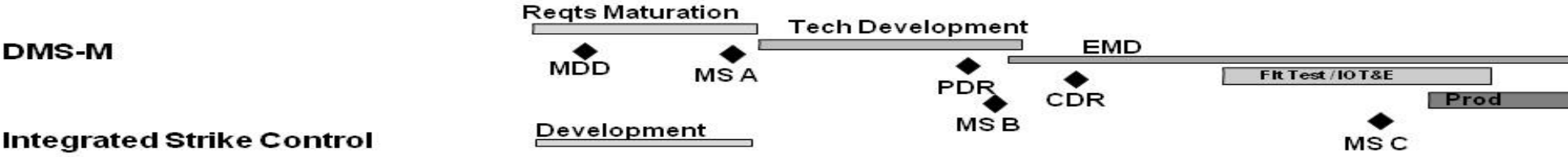
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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 676023: <i>Defensive Management System</i>



B-2 FY13 PB DMS-M Detailed Schedule

FY11	FY12	FY13	FY14	FY15	FY16	FY17
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FY11	FY12	FY13	FY14	FY15	FY16	FY17
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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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 676023: <i>Defensive Management System</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
DMS-M Milestone A	4	2011	4	2011
DMS-M Technology Development Contract Award	1	2012	1	2012
DMS-M Preliminary Design Review	4	2013	4	2013
DMS-M Milestone B Decision	1	2014	1	2014
DMS-M EMD Contract Award	2	2014	2	2014
DMS-M Critical Design Review	4	2014	4	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	30.133	22.791	30.889	-	30.889	11.920	7.424	5.735	3.568	Continuing	Continuing
675059: <i>Strategic War Planning System (SWPS)</i>	18.056	10.118	21.155	-	21.155	-	-	-	-	Continuing	Continuing
675282: <i>Joint Navigation Warfare Center (JNWC)</i>	9.102	9.551	-	-	-	-	-	-	-	Continuing	Continuing
675368: <i>GSIN (Global Integrated Sensor Network)</i>	2.975	3.122	9.734	-	9.734	11.920	7.424	5.735	3.568	Continuing	Continuing

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 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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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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 User Defined Operational 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.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	28.441	23.072	22.650	-	22.650
Current President's Budget	30.133	22.791	30.889	-	30.889
Total Adjustments	1.692	-0.281	8.239	-	8.239
• Congressional General Reductions	-	-0.281			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.967	-			
• SBIR/STTR Transfer	-0.814	-			
• Other Adjustments	-0.461	-	8.239	-	8.239

Change Summary Explanation

FY11 increased \$2.967M for Global Sensor Integrated Network (GSIN).

FY11 Congressional General Reduction of 0.461M in Other Adjustment row.

FY12 Congressional General Reduction (FFRDC, Sec. 8023) of 0.281M.

FY13 increased a total of \$8.239M based on a reduction of \$9.666M for Joint Navigation Warfare Center, an increase of \$10.7M for Integrated Strategic Planning and Analysis Network Increment 4, and an increase of \$7.205M for GSIN.

In FY 2013, 675282, Joint Navigation Warfare Center, efforts were transferred to PE 0105921F, Service Support to STRATCOM Space Activities (O&M).

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675059: <i>Strategic War Planning System (SWPS)</i>	18.056	10.118	21.155	-	21.155	-	-	-	-	Continuing	Continuing
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, 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.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013
Title: ISPAN Increment 2 Modernization	18.056	10.118	2.800
Description: Funds 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 support capabilities for senior leader situational awareness through enhanced data analysis and visualization, and expand development of services and operational nodes to support Global Information Grid (GIG) Enterprise services and distributed operation.			
FY 2011 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012		
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>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Completed development activities for CIE and Net-centricity and enhanced planning capabilities. Developed advanced decision support capabilities for senior leader situational awareness through enhanced data analysis and visualization, and expanded development of services and operational nodes to support GIG Enterprise services and distributed operations.</p> <p>FY 2012 Plans: Continue Increment 2 Modernization development effort and enhancing planned capabilities.</p> <p>FY 2013 Plans: Continues Increment 2 Modernization development effort and working delinquency reports.</p>				
<p>Title: Increment 3 Modernization</p> <p>Description: Funds pre-Milestone B risk reduction activities for the next increment of planning tools for the ISPAN Collaborative Information Environment (CIE). Builds on the capabilities and technology developed in Block 1 and Increment 2, to achieve a more complete implementation of the joint operation planning process that includes collaborative campaign/contingency planning and integrated COA development to meet the desired crisis action and time sensitive planning timelines.</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans: N/A</p> <p>FY 2013 Plans: Funds pre-Milestone B risk reduction activities for the next increment of planning tools for the ISPAN CIE. Builds on the capabilities and technology developed in Block 1 and Increment 2, to achieve a more complete implementation of the joint operation planning process that includes collaborative campaign/contingency planning and integrated COA development to meet the desired crisis action and time sensitive planning timelines.</p>		-	-	7.655
<p>Title: ISPAN Increment 4 Modernization</p> <p>Description: ISPAN Increment 4 MPAS Modernization provides a more robust strategic war planning capability with a reduced footprint, faster planning timelines, enhanced analysis and plan optimization, and the ability to incorporate new air vehicle capabilities in the future. ISPAN Inc 4 is an evolution of the Block 1 baseline system using proven technologies.</p> <p>FY 2011 Accomplishments:</p>		-	-	10.700

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
N/A			
FY 2012 Plans: N/A			
FY 2013 Plans: Funds pre-Milestone B risk reduction activities including studies and analyses to identify the best approach to increase system robustness, enhance plan optimization and improve planning timelines.			
Accomplishments/Planned Programs Subtotals	18.056	10.118	21.155

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

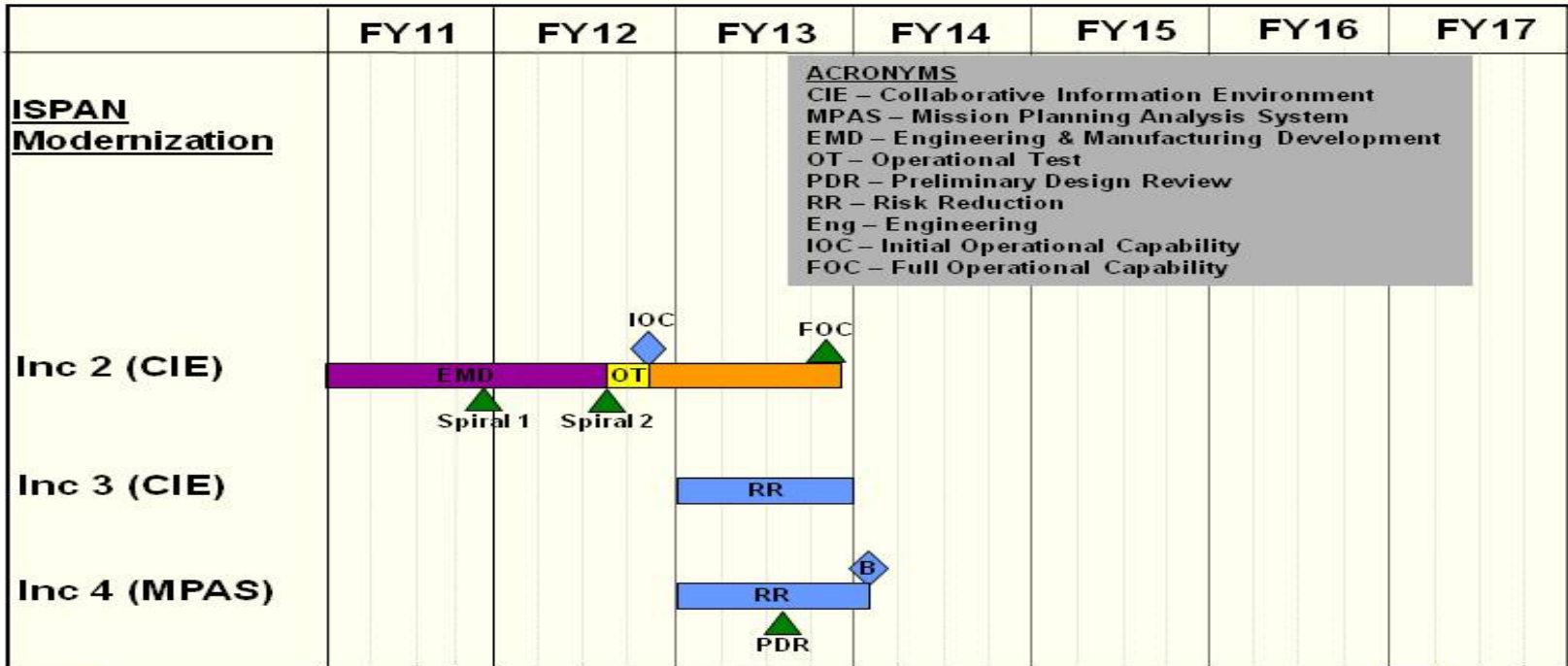
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u> <u>Continuing</u>
• OPAF, PE 0101313F, Strategic War...: -	11.790	13.240	9.197	0.000	9.197	7.863	7.037	7.192	7.289	Continuing	Continuing

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
ISPAN Increment 2 Spiral 1 Delivery	4	2011	4	2011
ISPAN Increment 2 Spiral 2 Delivery	3	2012	3	2012
ISPAN Increment 2 IOC	4	2012	4	2012
ISPAN Increment 2 FOC	4	2013	4	2013
ISPAN Increment 4 PDR	3	2013	3	2013
ISPAN Increment 4 Milestone B	1	2014	1	2014

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675282: <i>Joint Navigation Warfare Center (JNWC)</i>	9.102	9.551	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2013, 675282, Joint Navigation Warfare Center, efforts transferred to PE 0105921F, Service Support to STRATCOM Space Activities (O&M).

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 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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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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 Global Positioning System Reliability Prediction Model (GPS-RPM) 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.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: NAVWAR Ops Support</p> <p>Description: NAVWAR Operational Warfighter Support</p> <p>FY 2011 Accomplishments: Provided COCOM reachback analysis to develop adversary, threat and intel assessments.</p> <p>FY 2012 Plans: Continues COCOM reachback analysis support to develop adversary, threat and intel assessments.</p> <p>FY 2013 Plans: N/A</p>	2.057	2.244	-
<p>Title: NAVWAR Test, Training, Exercises and Experiments</p> <p>Description: Funds will support Field Tests, NATO trials, U.S. PNT Tests, Exercises and Experiments.</p>	3.560	3.662	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p><i>FY 2011 Accomplishments:</i> Supported FORTUNE and GYPSY Field Tests, NATO trials, U.S. PNT Tests, Exercises and Experiments.</p> <p><i>FY 2012 Plans:</i> Continues support for FORTUNE and GYPSY Field Tests, NATO trials, U.S. PNT Tests, Exercises and Experiments.</p> <p><i>FY 2013 Plans:</i> N/A</p>			
<p><i>Title:</i> NAVWAR Modeling, Simulation, Tools and Methods</p> <p><i>Description:</i> Funds support the Information Analysis Center (IAC) to develop Global Positioning System Reliability Prediction Model (GPS-RPM) Upgrades, GPS frequency clearance evaluations, modeling and simulation methodologies, standards and analyses.</p> <p><i>FY 2011 Accomplishments:</i> Supported the Information Analysis Center (IAC), developed Global Positioning System Reliability Prediction Model (GPS-RPM) Upgrades, GPS frequency clearance evaluations, modeling and simulation methodologies, standards and analyses.</p> <p><i>FY 2012 Plans:</i> Continues support for the IAC, will develop additional GPS-RPM Upgrades, GPS frequency clearance evaluations, modeling and simulation methodologies, standards and analyses.</p> <p><i>FY 2013 Plans:</i> N/A</p>	3.485	3.645	-
Accomplishments/Planned Programs Subtotals	9.102	9.551	-

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• N/A: 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
 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.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

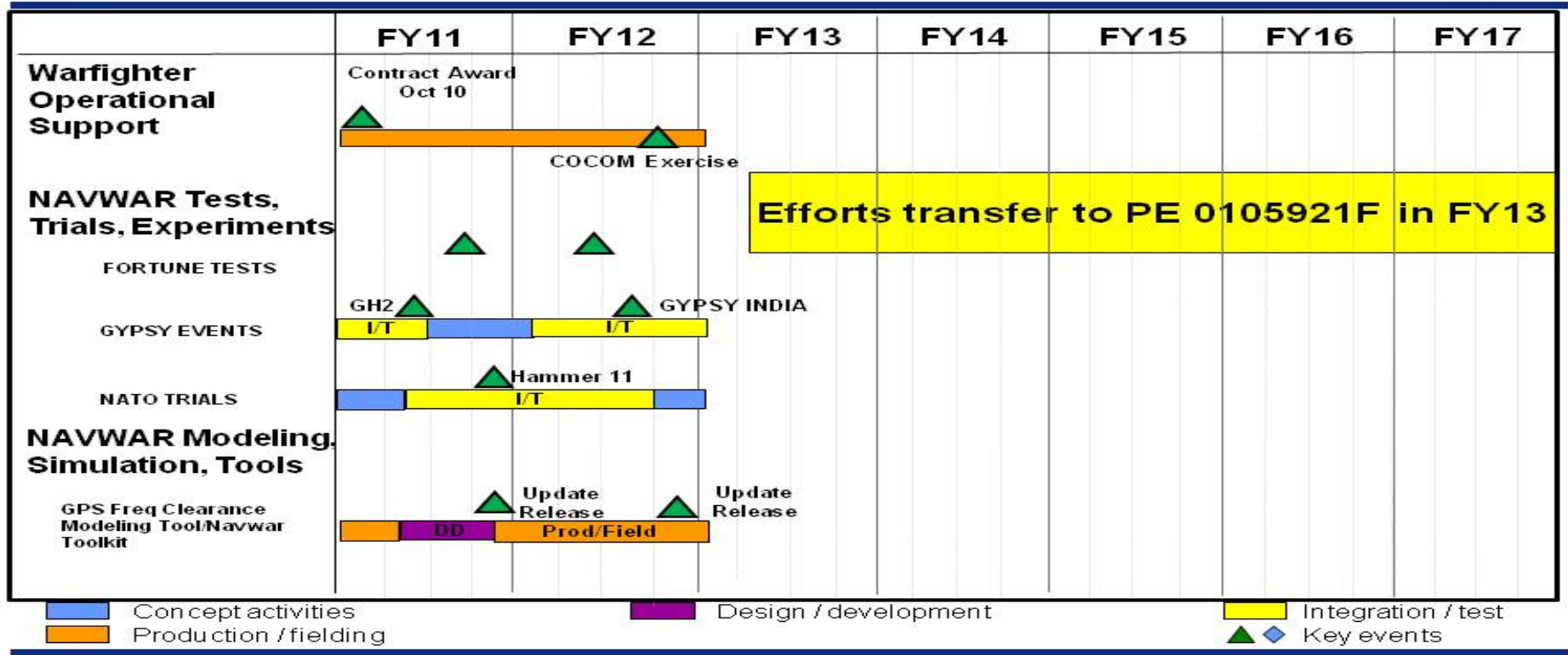
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0101313F: STRAT WAR PLANNING SYS -
 USSTRATCOM

PROJECT
 675282: Joint Navigation Warfare Center
 (JNWC)



NAVWAR Program Schedule



Project 675282

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Warfighter Operational Support Contract Award	1	2011	1	2011
Warfighter Operational Support Combatant Command Exercise	4	2012	4	2012
FORTUNE Field Test 1	3	2011	3	2011
FORTUNE Field Test 2	2	2012	2	2012
GYPSY HOTEL 2 Field Trial	2	2011	2	2011
GYPSY INDIA Field Test	3	2012	3	2012
NATO Trials Hammer 11 Exercise	4	2011	4	2011
GPS Frequency Clearance Modeling Tool Update Release	4	2011	4	2011
GPS Frequency Clearance Modeling Tool Update Release 2	4	2012	4	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
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 Integrated Sensor Network)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675368: <i>GSIN (Global Integrated Sensor Network)</i>	2.975	3.122	9.734	-	9.734	11.920	7.424	5.735	3.568	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The 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.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013
Title: GSIN Increments 2 and 3 Common XML Data Schema	2.967	2.848	2.416
Description: Continue to develop a common, XML net-enabled data schema to integrate Missile Warning, Missile Defense Sensor data for DISA Secret and below interoperability. Integrate Space Situational Awareness sensor data into the XML Schema Register data schema and services with appropriate registries/catalogs. Develop configuration control processes and procedures to manage the XML schema and associated XML messaging and services. Begin Development of Sensor Registry Prototype and development of Joint Concept for Data Identification and Migration to Common Standards			
FY 2011 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012		
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 Integrated Sensor Network)</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Developed options and implementation plans for incremental development to mature data exposure capabilities and migrate data to a common, XML net-enabled command capability solution. FY 2012 Plans: Continue to develop a common, XML net-enabled data schema to integrate Missile Warning, Missile Defense Sensor data for DISA Secret and below interoperability. Integrate Space Situational Awareness sensor data into the XML Schema Register data schema and services with appropriate registries/catalogs. Develop configuration control processes and procedures to manage the XML schema and associated XML messaging and services. Begin Development of Sensor Registry Prototype and development of Joint Concept for Data Identification and Migration to Common Standards FY 2013 Plans: Will continue incremental development of common schema to integrate Space Situational Awareness sensor data; register data schema and services with appropriate registries/catalogs; continue development of Sensor Registry Prototype and Joint concepts for Data Identification and Migration to Common Standards; test and field Increment 2.				
Title: GSIN Visualization and Data Services, Demonstrations and Studies Description: Continue to fund development of integrated Missile Warning and Missile Defense visualization and data software services to display data in a common operational picture. Conduct studies and demonstrations of data correlation, launch event characterization and assessment services for risk reduction evaluations. Modifications and enhancements to visualization and data services; Continue studies to include demonstration and evaluation of Resource Broker and Space Situational Awareness capabilities FY 2011 Accomplishments: N/A FY 2012 Plans: Continue development of integrated Missile Warning and Missile Defense visualization and data software services to display data in a common operational picture. Conduct studies and demonstrations of data correlation, launch event characterization and assessment services for risk reduction evaluations. FY 2013 Plans: Will continue modifications and enhancements to visualization and data services; Continue studies to include demonstration and evaluation of Resource Broker and Space Situational Awareness capabilities		-	0.274	0.113
Title: GSIN Increment 1 Missile Defense (MD) Data Exposure Services Mods Description: Minor enhancements and modifications to MD data exposure services based on changes to common XML schema		0.008	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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 Integrated Sensor Network)</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p><i>FY 2011 Accomplishments:</i> Completed minor enhancements and modifications to MD data exposure services based on changes to common XML schema</p> <p><i>FY 2012 Plans:</i> N/A</p> <p><i>FY 2013 Plans:</i> N/A</p>			
<p><i>Title:</i> GSIN Increments 3 and 4, Expose and Integrate Space Situational Awareness (SSA) Data</p> <p><i>Description:</i> Expose sensor data and integrate SSA data from non-traditional sensors (MD/MW/non-DoD) into the Global Information Grid; Develop implementation plans to mature data exposure capabilities</p> <p><i>FY 2011 Accomplishments:</i> N/A</p> <p><i>FY 2012 Plans:</i> N/A</p> <p><i>FY 2013 Plans:</i> Begin exposure of SSA data (Increment 3) and integration of SSA data from non-traditional sensors (MW/MD/non-DoD) into the Global Information Grid (Increment 4); develop implementation plans to mature data exposure capabilities.</p>	-	-	7.205
Accomplishments/Planned Programs Subtotals	2.975	3.122	9.734

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• N/A: 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
GSIN will use existing contract vehicles to manage, develop and modernize the combined Space Situational Awareness/Missile Warning/Missile Defense data exposure architecture and solution. These contract vehicles are already in place and available.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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 Integrated Sensor Network)</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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY

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

R-1 ITEM NOMENCLATURE

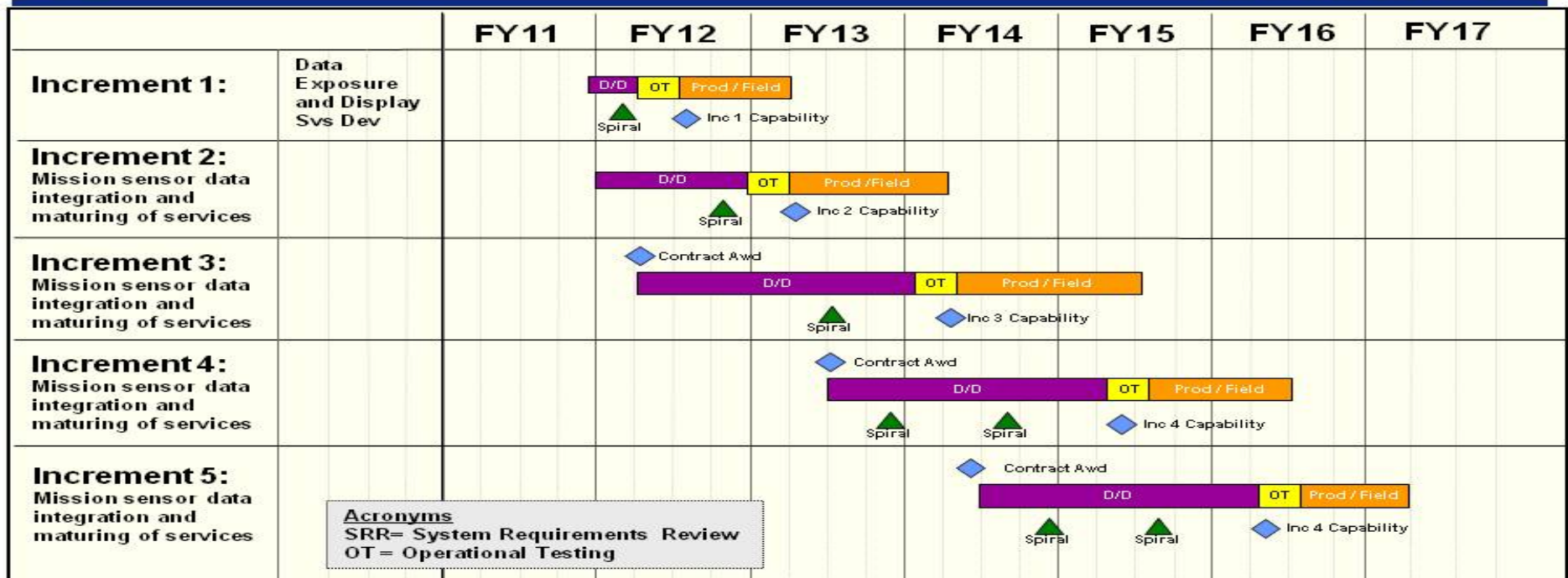
PE 0101313F: STRAT WAR PLANNING SYS - USSTRATCOM

PROJECT

675368: GSIN (Global Integrated Sensor Network)



GSIN Schedule



Acronyms
SRR= System Requirements Review
OT = Operational Testing

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

Project 675368

Depicted by in stallation/production flow

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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 Integrated Sensor Network)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Increment 1 Spiral Delivery	1	2012	1	2012
Increment 1 Capability Fielded	3	2012	2	2013
Increment 2 Spiral Delivery	4	2012	4	2012
Increment 2 Capability Fielded	2	2013	2	2014
Increment 3 contract award	2	2012	2	2012
Increment 3 Spiral Delivery	3	2013	3	2013
Increment 3 Capability Fielded	2	2014	3	2015
Increment 4 contract award	3	2013	3	2013
Increment 4 Spiral Delivery	4	2013	4	2013
Increment 4 Spiral 2 Delivery	3	2014	3	2014
Increment 4 Capability Fielded	2	2015	2	2016
Increment 5 contract award	2	2014	2	2014
Increment 5 Spiral Delivery	4	2014	4	2014
Increment 5 Spiral 2 Delivery	3	2015	3	2015
Increment 5 Capability Fielded	2	2016	1	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	20.022	6.466	5.609	-	5.609	1.700	1.509	-	-	Continuing	Continuing
674592: <i>Region/Sector Operations Modernization Center (R/SAOC)</i>	20.022	6.466	5.609	-	5.609	1.700	1.509	-	-	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). The BCS-F program, which supports Operation 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, prevent and overcome diminishing manufacturing sources and obsolescence issues, and implement fixes for critical Information Assurance deficiencies. NCR-IADS is the post-September 11 2001, quickly established, ground based air defense system using sensors to enhance the air surveillance picture incorporated in BCS-F.

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

This program is in Budget Activity 7, Operational System Development, because these budget activities include development efforts to upgrade systems currently fielded or has approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	23.732	12.672	0.398	-	0.398
Current President's Budget	20.022	6.466	5.609	-	5.609
Total Adjustments	-3.710	-6.206	5.211	-	5.211
• Congressional General Reductions	-	-0.206			
• Congressional Directed Reductions	-	-6.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-3.500	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.210	-	5.211	-	5.211

Change Summary Explanation

FY11 Congressional General Reduction of 0.210M in Other Adjustment row.

FY12 Congressional General Reduction (FFRDC, Sec. 8023) of 0.206M.

FY12 Congressional Directed Reduction of 6.0M from FY12 Defense Appropriation Act. Reason: excess to requirement

FY13 funding added to continue systems engineering, test and evaluation in support of Release 3.2 and fix critical information assurance deficiencies.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Product Development	11.109	2.147	-	-	-
Description: Development of BCS-F Increment 3, Release 3.2.					
FY 2011 Accomplishments: Performed development work for increment 3.2 and performed analysis and resolution of technical reports stemming from Increment 3.2 testing.					
FY 2012 Plans: Completing 3.2 development, analysis, and resolution of technical reports stemming from Increment 3.2 testing.					
FY 2013 Base Plans:					

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
N/A FY 2013 OCO Plans: N/A					
Title: Systems Engineering Description: Systems engineering in support of Increment 3, Release 3.2. FY 2011 Accomplishments: Performed systems engineering in support of Increment 3.2 development and testing. FY 2012 Plans: Performing systems engineering in support of Increment 3.2 development and testing. N/A FY 2013 Base Plans: Will perform systems engineering in support of 3.2 and critical Information Assurance fixes. FY 2013 OCO Plans: N/A	3.555	3.245	3.392	-	3.392
Title: Test & Evaluation Description: Developmental/Operational test and evaluation of BCS-F Increment 3, Release 3.2 FY 2011 Accomplishments: Performed DT/OT of Increment 3.2. Performed NCR-IADS integration testing. FY 2012 Plans: Performing follow-on testing and certification of Increment 3.2 as the system fields. Performing NCR-IADS integration testing. FY 2013 Base Plans: Will perform test and evaluation of 3.2 and critical Information Assurance fixes as the system fields to US sectors. Will perform NCR-IADS integration testing. FY 2013 OCO Plans:	4.564	0.507	1.928	-	1.928

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
N/A					
Title: Management Services Description: Program office support of BCS-F Increment 3, Release 3.2 development, testing, and fielding FY 2011 Accomplishments: Performed program office support of Release 3.2 development activities. FY 2012 Plans: Performing program office support of Release 3.2 development and developmental test activities. FY 2013 Base Plans: Will perform program office support of Release 3.2 and critical Information Assurance fixes. FY 2013 OCO Plans: N/A	0.794	0.567	0.289	-	0.289
Accomplishments/Planned Programs Subtotals	20.022	6.466	5.609	-	5.609

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPAF , PE#0102326F , Region/ Sect...: <i>BCS-F INC 3</i>	13.912	32.468	17.368	0.000	17.368	19.248	1.649	1.731	4.023	Continuing	Continuing
• O&M ,PE#0102326F , Region/ Se...: <i>BCS-F INC 3</i>	0.000	0.000	1.766	0.000	1.766	2.114	2.178	2.244	2.294	Continuing	Continuing

E. Acquisition Strategy
 The BCS-Fixed program is utilizing a sole source contract to execute an incremental development acquisition strategy to further advance tactical Battle Management C2 capabilities.

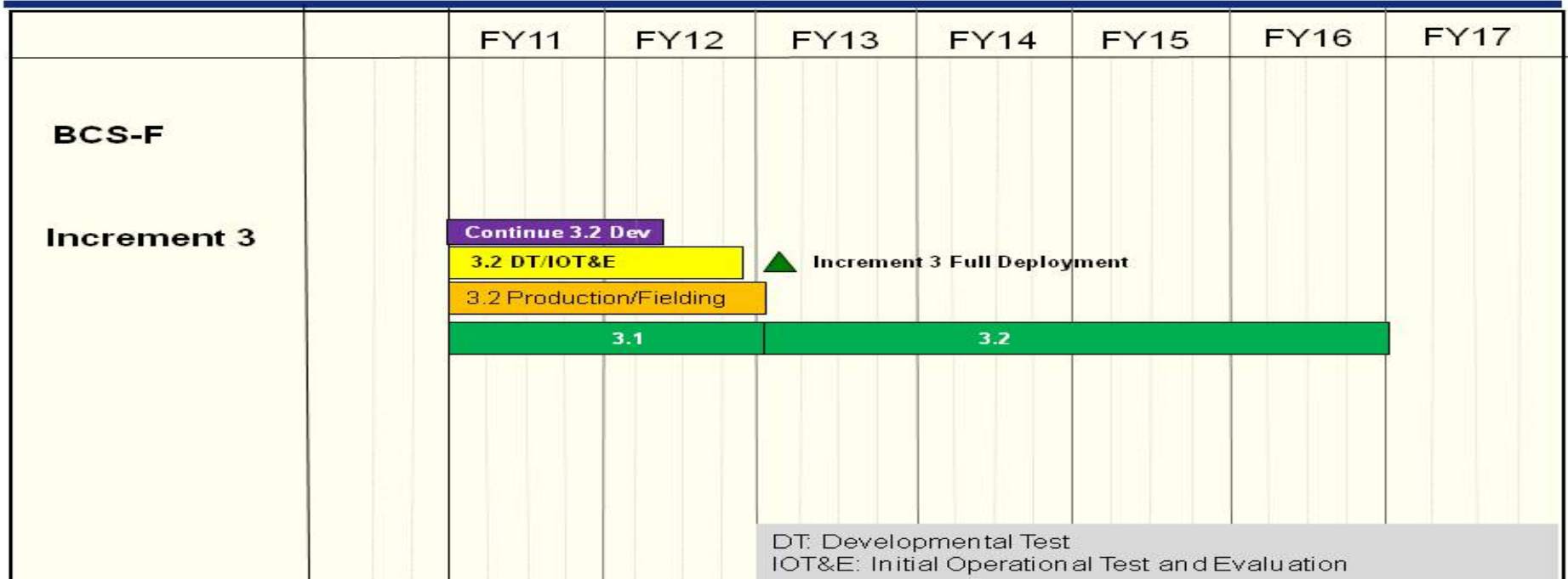
F. Performance Metrics
 Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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
 Operations / sustainment

 Key events
 As of 5 Jan 2012

Integrity - Service - Excellence

1

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Continuation of Release 3.2 Software Development	1	2011	2	2012
Release 3.2 DT/IOT&E	1	2011	3	2012
Release 3.2 Production/Fielding	1	2011	4	2012
Increment 3 Full Deployment	1	2013	1	2013
Release 3.1 Sustainment	1	2011	4	2012
Release 3.2 Sustainment	1	2013	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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 SYS ACTIVITIES</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	0.015	0.014	-	-	-	-	-	-	0.016	Continuing	Continuing
675011: <i>Space Situational Awareness Initiatives</i>	0.015	0.014	-	-	-	-	-	-	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 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)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	0.015	0.015	-	-	-
Current President's Budget	0.015	0.014	-	-	-
Total Adjustments	-	-0.001	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-0.001	-	-	-

C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013
Title: Net Centric Capability	0.010	0.014	-
Description: 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.			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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 SYS ACTIVITIES</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<i>FY 2011 Accomplishments:</i> 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.			
<i>FY 2012 Plans:</i> Continue to 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.			
<i>Title:</i> Untitled <i>Description:</i> Supports integration into Single Integrated Space Picture (SISP)	-	-	-
<i>FY 2011 Accomplishments:</i> N/A			
<i>Title:</i> Intelligence Support <i>Description:</i> Enable near-real time intelligence support to space battle management, space combat assessment, and adversary space trending and pattern analysis.	0.005	-	-
<i>FY 2011 Accomplishments:</i> N/A			
Accomplishments/Planned Programs Subtotals	0.015	0.014	-

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. 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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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 SYS ACTIVITIES</i>
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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.

F. 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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	10.178	19.892	15.098	-	15.098	10.000	15.271	15.241	15.187	Continuing	Continuing
674936: <i>Warfighter Rapid Acquisition Program</i>	10.178	19.892	15.098	-	15.098	10.000	15.271	15.241	15.187	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.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	10.580	19.934	19.912	-	19.912
Current President's Budget	10.178	19.892	15.098	-	15.098
Total Adjustments	-0.402	-0.042	-4.814	-	-4.814
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.305	-			
• Other Adjustments	-0.097	-0.042	-4.814	-	-4.814
 Change Summary Explanation					
FY11 Economic Assumption \$54,000, FFRDC \$43,000, SBIR reduction \$305,000					
FY12 FFRDC \$42,000					
FY13 \$4.814 to support higher Air Force priorities					

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Program selection/initiation	10.178	19.892	15.098
Description: WRAP Programs Selected			
SYERS-2 Multi-Spectral Imagery Characterization			
Mosquito-Automated Ground Hardness Measurement System			
Urban Leader Tactical Response, Awareness & Visualization (ULTRA VIS)			
Cyber Defense: Assure 6			
FY 2011 Accomplishments:			
Plan to select qualified initiatives to receive WRAP funding and sponsorship.			
FY 2012 Plans:			
Plan to select qualified initiatives to receive WRAP funding and sponsorship.			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
N/A			
FY 2013 Plans: Plan to select qualified initiatives to receive WRAP funding and sponsorship.			
Accomplishments/Planned Programs Subtotals	10.178	19.892	15.098



D. Other Program Funding Summary (\$ in Millions)												
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>	
• Not Applicable: <i>N/A</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. 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.

F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>

WRAP Schedule	FY11				FY12				FY13				FY14				FY15				FY16				FY17							
	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				
Acquisition Milestone																																
T&E Milestone	X	O	◇	△	X	O	◇	△	X	O	◇	△	X	O	◇	△	X	O	◇	△	X	O	◇	△	X	O	◇	△	X	O	◇	△
Delivery Schedule																																

X
O
◇
△

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

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
FY 11 WRAP Project Initiation (Executed)	1	2011	1	2011
FY 11 WRAP Project Approval/Project funding (Executed)	1	2011	2	2011
FY 12 WRAP Project Approval/Project Funding (Planned)	1	2012	2	2012
FY13 WRAP Project Approval/Project Funding (Planned)	1	2013	3	2013
FY14 WRAP Project Approval/Project Funding (Planned)	1	2014	3	2014
FY15 WRAP Project Approval/Project Funding (Planned)	1	2015	3	2015
FY16 WRAP Project Approval/Project Funding (Planned)	1	2016	3	2016
FY17 WRAP Project Approval/Project Funding (Planned)	1	2017	3	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	136.667	126.730	147.971	-	147.971	147.030	110.620	34.728	-	Continuing	Continuing
675246: <i>MQ-9 Development and Fielding</i>	136.667	126.730	147.971	-	147.971	147.030	110.620	34.728	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note
FY11 funding total includes a \$12M appropriated for Overseas Contingency Operations.

The Cost to Complete and Total Cost for MDAP projects in this program element are documented in the R3. The Cost to Complete and Total Cost on the R2 are entered as "Continuing" and not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding.

A. Mission Description and Budget Item Justification

The basic MQ-9 Reaper system consists of the aircraft, sensors, a ground control station (GCS), Squadron Operations Center (SOC), 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 (RPA) 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 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 to develop and field capability through incremental upgrades. Future capabilities development activity includes increasing the maximum gross takeoff weight capability of the aircraft; automatic takeoff and landing capability (ATLC); enhancing aircraft systems to include integrated redundant avionics; modifying the system to include provisions for a Foreign Military Sale exportable version of the weapon system; Predator Primary Data Link (PPDL) communication system upgrades and communications upgrades to include data link encryption, IP networking, and Ka frequency migration; navigation system upgrades; electrical system upgrades; airframe and airframe system improvements, such as incorporation of Elevated Temperature Wet (ETW) materials; propulsion system improvements; secure voice and data communications, including SATCOM upgrades; sensor/stores management computer improvement; MIL-STD-1760 advanced weapons data bus; Universal Armament Interface and Miniature Munitions/Store Interface; advanced sensor and weapon payloads; improved human-machine interface (HMI); integrating precision weapons (e.g. AGM-114 Hellfire missile, GBU-12/38/49 guided bombs, and Small Diameter Bomb variants); 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 system functionality and capabilities. The MQ-9 program will continue to support other payload and capability development activities funded in other Program Elements (e.g. SIGINT, communications, Broad Area Surveillance leveraging Gorgon Stare

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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

Quick Reaction Capability, advanced Counter-Improvised Explosive Device (C-IED), missile defense, hyperspectral, and other sensors and weapons) and address reliability, maintainability, sustainability, and safety issues. Activities also include trade studies, analyses, preliminary systems engineering, system and subsystem level testing in accordance with DoD and military standards, and specification development in support of both current program planning and execution, and studies supporting analysis and investment in future program planning.

The GCS, common with the MQ-1 Predator, 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, maintenance, launch and recovery of aircraft under LOS control for hand-off to a mobile or fixed facility GCS, and conducting operations within line-of-sight range of the LRGCS. Beginning in FY12 there is funding to accelerate development of a Multiple Aircraft Control (MAC) GCS capability. GCS upgrades will be developed and fielded in coordination with improvements to MQ-9 system capabilities and in response to evolving operational and information assurance/certification and accreditation requirements. Key efforts include Block 30 GCS upgrades that add new LINUX processors, high definition monitors, ergonomic improvements, Block 50 GCS upgrades that integrate improved human-machine interfaces, open systems architecture, improved and crew habitability. In addition, the Block 50 GCS effort also includes development/integration of the Unmanned Aerospace System (UAS) Command and Control (C2) Initiative (UCI) government-owned standard to enable improved capabilities for situational awareness and multi-mission management monitoring and oversight in the GCS and SOC.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal years.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	125.427	146.824	110.982	-	110.982
Current President's Budget	136.667	126.730	147.971	-	147.971
Total Adjustments	11.240	-20.094	36.989	-	36.989
• Congressional General Reductions	-	-0.094			
• Congressional Directed Reductions	-	-20.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	11.240	-	36.989	-	36.989

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
Change Summary Explanation FY11: Adjustments \$12.0M in FY 2011 Overseas Contingency Operations funds added by technical adjustment from program element 0207277F for the Counter IED effort and Congressional General Reductions adjustment is - \$0.760M shown in Other Adjustments Row.				
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Title: MQ-9 System Development and Demonstration (SDD) - Increment 1		1.411	-	-
Description: Development to meet MQ-9 Capabilities Production Document (CPD) requirement.				
FY 2011 Accomplishments: Complete air worthiness, software updates, & weapons development efforts.				
Title: MQ-9 System Development and Demonstration (SDD) - Bridge		38.444	45.467	24.103
Description: Complete development to meet MQ-9 Capabilities Production Document (CPD) requirements.				
FY 2011 Accomplishments: Continued High Definition sensor upgrades and integration, VORTEX, PPDL, Main Landing Gear, and laser altimeter upgrades.				
FY 2012 Plans: Continue high definition sensor capability and Target Location Accuracy integration and PPDL development. Software release version 904.6 Rev A will support Block 5 first article testing.				
FY 2013 Plans: Will continue airframe related development and test(\$10.1M) - secure communications - weapon integration AGM-114P+/R (Hellfire P+/R) - HD video dissemination via Ku Line-of-Sight				
Sensor control and integration (\$3.3M)				
Integration and productionization (\$10.7M) - Integration, testing, production, and training documentation				
Milestones; CDR completed Jan 11. Interim software for Block 5 plus activities scheduled for delivery in Sep 13. Developmental test begins for PPDL Human Machine Interface, Dual ARC-210 radios, left seat Synthetic Aperture Radar control, and forward bay reorganization.				
Title: Ground Control Station (GCS) Development		40.191	15.304	16.231

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Description: Develop Ground Control Station (GCS) capabilities. Major capabilities include open system architecture, multi-level security and ergonomic cockpit design.</p> <p>FY 2011 Accomplishments: Continued GCS Block 50 development and System Integration Lab (SIL) effort. Initiated development of UCI architecture to support the Ground Control Stations.</p> <p>FY 2012 Plans: Continue GCS Block 50 development.</p> <p>FY 2013 Plans: Finish Block 50 design and procure 3 RDT&E SILs.</p>				
<p>Title: MQ-9 Electro-Optic / Infrared (EO/IR) Sensor</p> <p>Description: Develop improved MTS-B modes and capability including all digital high-definition (HD) camera formats and Target Location Accuracy (TLA) improvements to improve imagery performance (definition and color) and to support future use of coordinate seeking weapons.</p> <p>FY 2011 Accomplishments: Continued High Definition and Target Location Accuracy sensor improvements for EO/IR sensor.</p> <p>FY 2012 Plans: Continue High Definition and Target Location Accuracy improvements for EO/IR sensor.</p> <p>FY 2013 Plans: Will complete the MTS-B High Definition Target Location Accuracy (HD/TLA) architecture, including design, fabrication, integration, and manned flight test/unmanned flight test of prototypes to achieve production readiness.</p> <p>Program Protection design, integration, and test(\$0.4M).</p> <p>Electronic zoom prototype evaluation(\$0.3M).</p> <p>MTS-B Prototype integration and test mission software for HD/TLA development, integration and test (\$5.9M).</p> <p>MTS-B HD/TLA platform integration/flight test & integration into SIL (\$5.0M).</p>		7.000	9.624	21.571

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
System Qualification and Extended Reliability Testing (\$5.0M).				
HD/TLA MTS-B Turret Unit Productionization (\$4.0M). - Document final design, conduct readiness reviews to begin production Formally release all MTS-B HD/TLA design documents.				
Documentation and Training (\$1.0M). - Prepare technical orders and training materials.				
Title: Other Government Costs (OGC)		8.559	6.557	9.415
Description: Other Government Costs including urgent services, engineering change orders, program office support, studies and general research.				
FY 2011 Accomplishments: Continued OGC costs.				
FY 2012 Plans: Continue OGC support.				
N/A				
FY 2013 Plans: (\$2.5M) Urgent and Program Management Services. (\$6.9M) Support Services to include DMS, corporate, and PMA support.				
Title: Operator Simulator		7.191	2.860	10.648
Description: Develop operator simulators for training and updates to keep Operator Simulator current with upgrades to aircraft and Ground Control Station.				
FY 2011 Accomplishments: Continued updates to keep Operator Simulator current with upgrades to aircraft and Ground Control Station.				
FY 2012 Plans: Continue updates to keep Operator Simulator current with upgrades to aircraft and Ground Station.				
FY 2013 Plans:				

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Will continue updates to keep Operator Simulator current with upgrades. aircraft and Ground Station. Consist of: Trainer Enhancements (\$3.5M), Target Location Accuracy (\$3.3M), and Block 50 Upgrades (\$3.9M).				
Title: Synthetic Aperture Radar (SAR) Enhancements		8.000	11.037	3.146
Description: Improvements in MQ-9 capability to disseminate SAR data, improve Ground Moving Target Indicator (GMTI) tracking, automation of data exploitation via Continuous Look Attack Management for Predator (CLAMP) and classification of 3-D targeting.				
FY 2011 Accomplishments: Continue SAR data development phase 3, dual beam dismount development, 3-D targeting, kinmatic tracker, and feature aided tracker.				
FY 2012 Plans: Continue SAR data development phase 3, dual beam dismount development, 3-D targeting, and feature aided tracker.				
FY 2013 Plans: Complete SAR data development phase 3, dual beam dismount development, 3-D targeting, and feature aided tracker.				
Title: Test Support		3.317	1.430	2.916
Description: Various MQ-9 testing activities such as flight testing including range time, controlled airspace, frequency management, project management and on-site facilities. Other testing activities include Joint Integrated Test Command (JITC) support and Edwards AFB acceptance testing support.				
FY 2011 Accomplishments: Continued test support.				
FY 2012 Plans: Continue test support. FY11 funding supported test activities in FY12. The FY12 funding is less than the normal 12 month funding period.				
FY 2013 Plans: Continuation of test support.				
n/a				
Title: Communications		0.768	2.798	21.050

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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<p>Description: Develop MQ-9 communication capabilities including encrypted Line of Sight (LOS) data links to ROVER terminals (VORTEX) and beyond LOS military SATCOM usage. Development and integration of an IP based Remote Split Operations network/infrastructure to include: Design, development and test of IP based network interfaces, network systems managers, drafting Technical Orders and support documentation, Training Packages, Production Drawings and Retrofit ATP's. Development of Ka SATCOM capability.</p> <p>FY 2011 Accomplishments: Completed VORTEX Line-of-Sight (LOS) development, continued PPDL LOS and Beyond-Line-of-Sight communication capabilities development.</p> <p>FY 2012 Plans: Development and integration of an IP based Remote Split Operations network/infrastructure to include: Design, development and test of IP based network interfaces, network systems managers, drafting Technical Orders and support documentation, Training Packages, Production Drawings and Retrofit Acceptance Test Procedures.</p> <p>FY 2013 Plans: (\$17.827M) Development of Ka SATCOM capability - Aircraft radome antenna and modem development - Ground based SATCOM upgrades - Software & waveform development</p> <p>(\$3.223M) Continue the development and integration of an IP based Remote Split Operations network/infrastructure to include: Design, development and test of IP based network interfaces, network systems managers, drafting Technical Orders and support documentation, Training Packages, Production Drawings and Retrofit ATP's.</p>			
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<p>Title: Counter-IED Development and Demonstration</p> <p>Description: Adding "Step Stare" mode capability to the MTS-B EO/IR sensors; also includes associated GCS development and testing.</p> <p>FY 2011 Accomplishments: Continued development/modification of sensor to add "Step Stare" mode capability to the MTS-B EO/IR sensors; also includes associated GCS development and testing.</p> <p>FY 2012 Plans:</p>	11.787	14.500	6.000
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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Continue to develop/modify sensor to add "Step Stare" mode capability to the MTS-B EO/IR sensors; also includes associated GCS development and testing. FY 2013 Plans: Will continue to develop/modify sensor to add "Step Stare" mode capability to the MTS-B EO/IR sensors; also includes associated GCS development and testing.				
Title: MAC Description: Develop Multi-Aircraft-Control capability for Ground Control Station. FY 2012 Plans: Develop Multi-Aircraft-Control capability for the Ground Control Station. FY 2013 Plans: Increases development of Multi-Aircraft Control capability for GCS. Incorporates UCI software architecture and improved Human Machine Interface upgrades to better enable monitoring and oversight of multi-mission activity.		-	4.333	11.470
Title: MQ-9 Technology Insertion Description: Develop Technology Insertion capabilities and functionality for the MQ-9 Weapon System. FY 2012 Plans: Develop Technology Insertion capabilities and functionality for the MQ-9 Weapon System. FY 2013 Plans: Increases development of Technology Insertion capabilities and functionality for the MQ-9 Weapon System including aircraft, sensors, and Ground Control System documentation and drawings.		-	12.820	17.180
Title: Reliability and Maintainability Description: Develop MQ-9 modification improvements for aircraft and ground base systems. FY 2013 Plans: Develop MQ-9 modification improvements for aircraft and ground base systems to improve mission capable rates and reduce reliability and maintainability cost.		-	-	4.241
Title: UAS Command and Control Initiatives (UCI) Description: UAS Command and Control Initiatives (UCI).		9.999	-	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<i>FY 2011 Accomplishments:</i>			
UAS Command and Control Initiatives (UCI).			
Accomplishments/Planned Programs Subtotals			
	136.667	126.730	147.971

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• APAF, PE 0205219F, MQ-9 UAV: <i>MQ-9 APAF</i>	897.009	1,058.151	919.950	0.000	919.950	1,007.550	1,015.750	799.701	783.640	Continuing	Continuing
• OPAF, PE 0205219F, MQ-9 UAV: <i>N/A (1)</i>	0.000	4.417	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• RDT&E AF, PE 0305219F, <i>Preda...: Predator</i>	42.776	11.642	9.122	0.000	9.122	5.652	0.000	0.000	0.279	Continuing	Continuing
• RDT&E AF, PE 0305206F, <i>Airbo...: ARS</i>	31.721	16.047	16.359	0.000	16.359	13.040	6.458	0.000	0.000	Continuing	Continuing
• APAF, PE 0305206F, Airborne <i>Reco...: ARS</i>	0.000	74.866	93.461	0.000	93.461	99.411	20.533	0.000	0.000	Continuing	Continuing
• RDT&E AF, PE 034260F, <i>Airbor...: ASIP-2C Dev.</i>	44.677	25.874	35.340	0.000	35.340	32.270	31.433	40.817	41.356	Continuing	Continuing

E. Acquisition Strategy
 The MQ-9 Reaper system will be acquired via sole-source contracts with General Atomics-ASI, L3Comm, and Raytheon as the prime contractors. GA-ASI is the prime contractor for aircraft and ground control stations. L3Comm is the prime contractor for the Predator Satellite Link. Raytheon is the prime contractor for the MTS-B EO/IR sensor system.

F. 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force **DATE:** February 2012

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>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MQ-9 System Development and Demonstration (SDD) - Interim Combat Capability (ICC)	SS/CPFF	GA-ASI:Poway, CA	87.429	-		-		-		-	0.000	87.429	87.429
MQ-9 System Development and Demonstration (SDD) - Increment 1	SS/CPIF	GA-ASI:Poway, CA	97.385	-		-		-		-	0.000	97.385	97.385
MQ-9 System Development and Demonstration (SDD) - Bridge	SS/CPIF	GA-ASI:Poway, CA	68.072	45.467	Feb 2012	24.103	Oct 2012	-		24.103	54.967	192.609	192.608
Ground Control Station (GCS) Development	SS/Various	GA-ASI:Poway, CA	62.438	15.304	Feb 2012	16.231	Oct 2012	-		16.231	45.423	139.396	139.396
MQ-9 Electro-Optical / Infrared (EO/IR) Sensor	SS/Various	Raytheon:McKinney, TX	29.253	9.624	Feb 2012	21.571	Apr 2013	-		21.571	32.914	93.362	93.362
Operator Simulator	SS/CPIF	L3 Comm:Salt Lake City, UT	21.546	2.860	Aug 2012	10.648	Apr 2013	-		10.648	13.725	48.779	48.779
Synthetic Aperture Radar (SAR) Enhancements	SS/CPFF	GA-RSG:Poway, CA	23.414	11.037	Feb 2012	3.146	Jan 2013	-		3.146	0.000	37.597	37.597
Communication	SS/CPFF	GA-ASI:Poway, CA	6.920	2.798	May 2012	21.050	Dec 2012	-		21.050	57.358	88.126	88.127
Counter-IED Development and Demonstration	SS/Various	Various:Various,	11.787	14.500	May 2012	6.000	Jan 2013	-		6.000	0.000	32.287	32.287
GCS MAC	SS/CPFF	GA-ASI:Poway, CA	-	4.333	Feb 2012	11.470	Apr 2013	-		11.470	35.084	50.887	50.887
MQ-9 Technical Insertion	SS/CPFF	GA-ASI:Poway, CA	-	12.820	Aug 2012	17.180	Apr 2013	-		17.180	13.874	43.874	43.874
UAS Command and Control Initiatives (UCI)	SS/CPIF	Various:Various,	9.999	-		-		-		-	0.000	9.999	9.999
Reliability and Maintainability	SS/CPFF	GA-ASI:Poway, CA	-	-		4.241	Oct 2012	-		4.241	14.588	18.829	18.829
Subtotal			418.243	118.743		135.640		-		135.640	267.933	940.559	940.559

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force **DATE:** February 2012

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>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Services	Various	Various,	29.756	4.229	Dec 2011	6.925	Oct 2012	-		6.925	6.925	47.835	TBD
Subtotal			29.756	4.229		6.925		-		6.925	6.925	47.835	

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	Various	Various,	13.516	1.430	Feb 2012	2.916	Oct 2012	-		2.916	7.234	25.096	25.095
Subtotal			13.516	1.430		2.916		-		2.916	7.234	25.096	25.095

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	Various,	14.875	2.328	Feb 2012	2.490	Oct 2012	-		2.490	2.490	22.183	TBD
Subtotal			14.875	2.328		2.490		-		2.490	2.490	22.183	

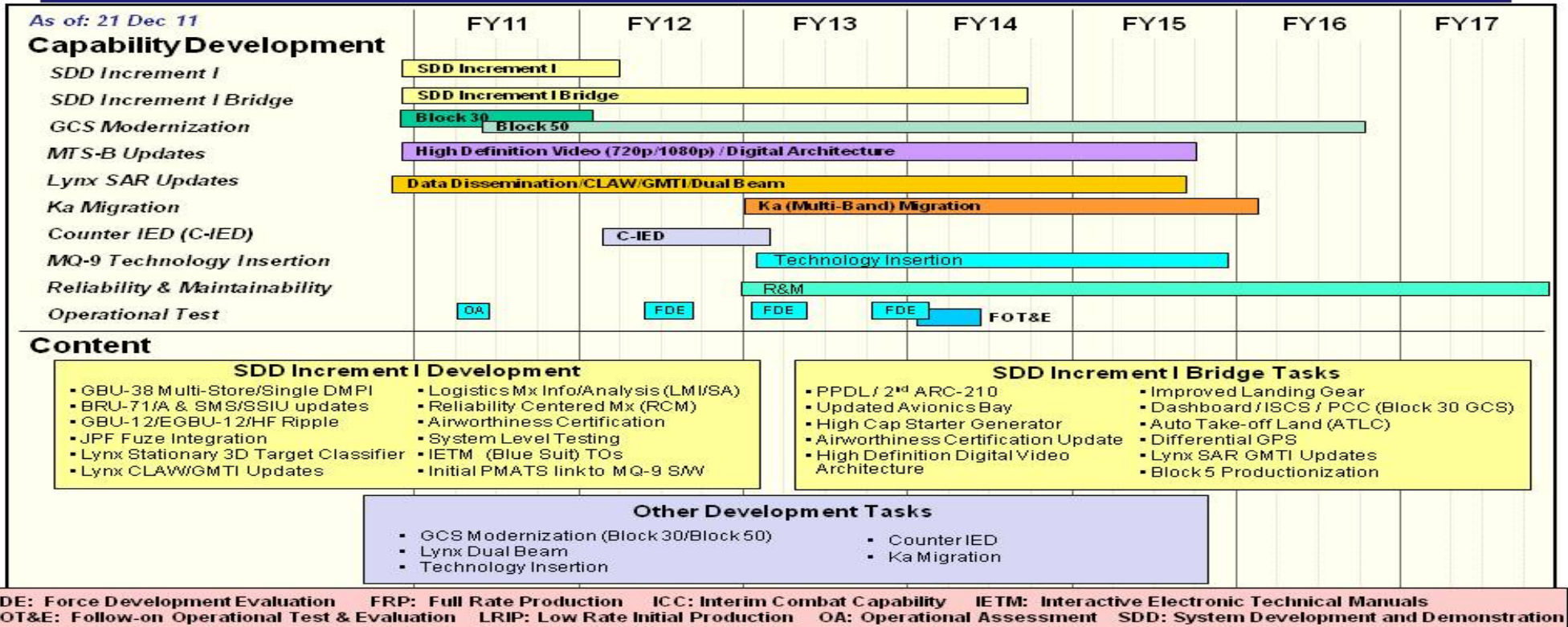
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		476.390	126.730		147.971		-	147.971	284.582	1,035.673	

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
SDD - Increment 1	1	2011	1	2012
SDD - Increment 1 Bridge	1	2011	3	2014
Ground Control Station (GCS) Modernization	1	2011	3	2016
MTS-B Updates	1	2011	3	2015
Lynx SAR Updates	1	2011	3	2015
Ka Migration	1	2013	1	2016
C-IED	1	2012	1	2013
MQ-9 Technology Insertion	1	2013	4	2015
Reliability and Maintainability	1	2013	4	2017
Operational Test	1	2011	2	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	15.045	-	49.848	-	49.848	-	-	-	-	Continuing	Continuing
675310: <i>EA Pod DRFM Upgrade</i>	15.045	-	49.848	-	49.848	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Overall, this program element(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 electronic attack pod 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 A-10 and F-16 EA pods which are fielded system.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	15.574	-	-	-	-
Current President's Budget	15.045	-	49.848	-	49.848
Total Adjustments	-0.529	-	49.848	-	49.848
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.450	-			
• Other Adjustments	-0.079	-	49.848	-	49.848

Change Summary Explanation

FY11: Adjustments (Cong General Reductions -\$0.79).

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Pod Upgrade Program	15.045	-	49.848

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Description: Electronic Attack Pod DRFM Upgrade SDD FY 2011 Accomplishments: Continue development of electronic attack pod upgrade. FY 2012 Plans: Not Applicable. FY 2013 Plans: Continue development of electronic attack pod upgrade.			
Accomplishments/Planned Programs Subtotals	15.045	-	49.848

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. Acquisition Strategy
 All major contracts within this project will be awarded through full and open competition.

F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY

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

R-1 ITEM NOMENCLATURE

PE 0207040F: *Multi-Platform Electronics*

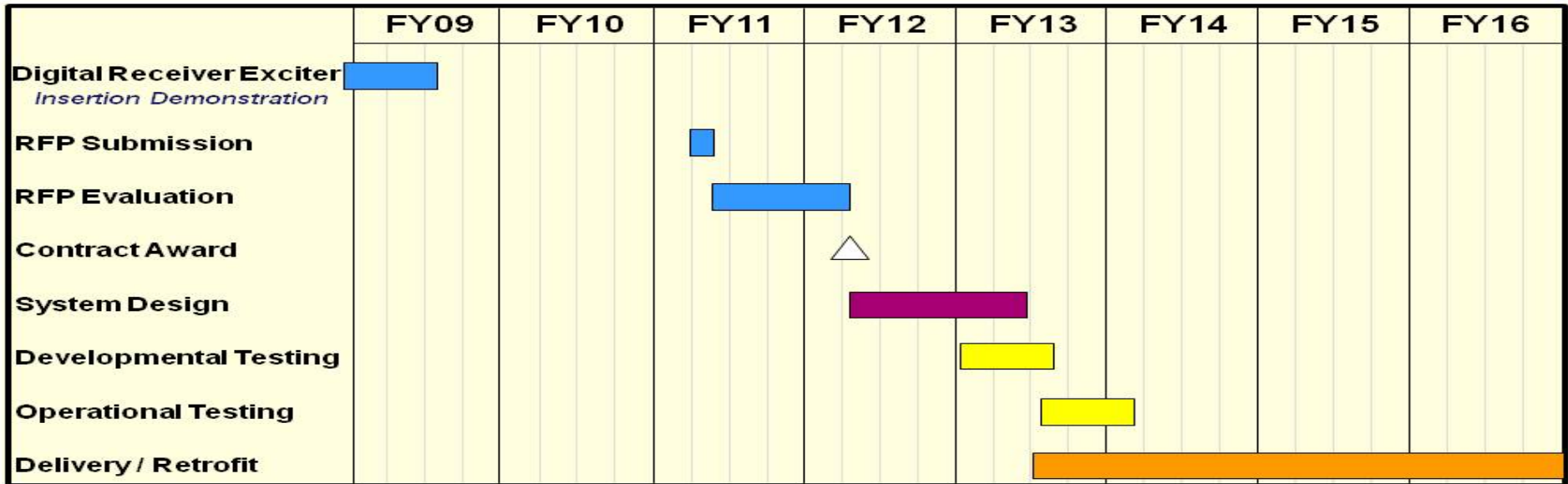
PROJECT

675310: *EA Pod DRFM Upgrade*



U.S. AIR FORCE

ALQ-131 DRFM Upgrade Program Schedule



■ Concept Activities

■ Design / Development

△ Key Event

■ Integration / Testing

■ Production / Fielding

Integrity - Service - Excellence

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Developmental Testing	1	2013	3	2013
Operational Testing	3	2013	1	2014
Delivery and Retrofit of Pods Start	3	2013	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	5.485	11.051	13.538	-	13.538	13.410	13.201	13.549	13.574	Continuing	Continuing
674809: <i>A-10 Squadrons</i>	5.485	11.051	13.538	-	13.538	13.410	13.201	13.549	13.574	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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. FY 2013 RDT&E funds address continuing user requirements that need to be incorporated within the Operational Flight Program (OFP). Every two years user developmental requirements are formally reviewed for incorporation in the OFP release cycle to bring new capability to the A-10 and to fix both hardware and software OFP deficiencies. Final integration of hardware and software requirements into a unified release occurs only after rigorous testing, including validation and verification using software integration laboratories, field representative assets, and production representative assets. 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 provide updates to the aircraft OFP in Suites 7B, 8, and 9 addressing the future integration of Mode 5, Lightweight Airborne Radio System (LARS) V12, Helmet Mounted Cueing System (HMCS), and Combatant Survivor Evader Locator (CSEL), Anti-Jam Embedded Global Positioning System/Inertial Navigation System (EGI Embedded GPS/INS), weapons, and targeting pods integration. Ongoing planning activities will continue to address diminishing manufacturing sources and obsolescence issues as required and provide replacement capabilities.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	5.661	11.051	13.403	-	13.403
Current President's Budget	5.485	11.051	13.538	-	13.538
Total Adjustments	-0.176	-	0.135	-	0.135
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.147	-			
• Other Adjustments	-0.029	-	0.135	-	0.135

Change Summary Explanation

FY11 adjustments (Cong General Reductions -\$0.029, Cong Directed Reductions \$0.0, Cong Adds \$0.0, Cong Directed Transfers \$0.0) are reflected in Other Adjustment Row.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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Title: OFP Development	5.485	11.051	13.538
Description: A-10C OFP Suite software is updated in an annual release cycle through FY12 and then every two years after FY12 to permit rapid integration of new precision weapons, advanced targeting pods, improved avionics, and enhanced EW capabilities. These efforts are frequently in response to Urgent Operational Needs and evolving mission needs generated by the ever-changing operational environment of close air support			
FY 2011 Accomplishments: A-10C OFP software is updated in an annual release cycle to permit rapid integration and test of new/updated systems (i.e., precision weapons, targeting pods, avionics, and electronic warfare capabilities). These efforts are in response to Urgent Operational Needs and respond to the evolving operational mission needs for the A-10C close air support role. A significant FY11 addition the test and evaluation of the Lightweight Airborne Radio System (LARS) (AN/ARS-6 V12), called LARSV12, in response to DMSMS issues with LARSv6.			
FY 2012 Plans: A-10C OFP software is updated in an annual release cycle through FY12 and then every two years after FY12 to permit rapid integration and test of new/updated systems (i.e., precision weapons, targeting pods, avionics, and electronic warfare capabilities). These efforts are often in response to Urgent Operational Needs and respond to the evolving operational mission			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
needs for the A-10C close air support role. A significant FY12 addition is the fielding of HMCS and LARSV12 with the integration of the added Combatant Survivor Evader Locator's (CSEL) with CSEL Integration Module (CIM) into the A-10C OFP.			
FY 2013 Plans: A-10C OFP software is updated every two years after FY12 to permit integration and test of new/updated systems (i.e., precision weapons, targeting pods, avionics, and electronic warfare capabilities). These efforts are often in response to Urgent Operational Needs and respond to the evolving operational mission needs for the A-10C close air support role. A significant FY13 addition is the initial testing of LARSV12 with the added Combatant Survivor Evader Locator (CSEL) capability, and the test, evaluation, and initial integration of the Mode 5 radio Identify Friend or Foe (IFF) capability into the A-10C OFP. This is in response to a DoD mandate for Initial Operational Capability (IOC) capability being fielded in the A-10C by FY14.			
Accomplishments/Planned Programs Subtotals	5.485	11.051	13.538

D. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost	
• PE 0207131F, A-10 Squadrons: <i>APAF</i>	202.132	54.354	89.919	0.000	89.919	47.850	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0207445F, Fighter Tactical Da...: <i>APAF</i>	0.674	0.674	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. Acquisition Strategy

Helmet Mounted Cueing System (HMCS) Acquisition Strategy was developed to support Air National Guard (ANG) and Air Force Reserve A-10 funded requirements. The Request for Proposal was released to industry September 2009. Source selection was completed and contract awarded in April 2010 using NGREA (National Guard Reserve Equipment Account) funding. Contracted effort includes the Congressional Add of RDT&E funds for HMCS integration.

Prior to FY 2009, A-10 Operational Flight Program (OFP) 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 new Thunderbolt Lifecycle Program Support (TLPS) contract was awarded to three successful bidders in 2009.

Suite 8 development efforts will begin in FY12, with SIL development and stand-up begin in FY11 as A-10 OFP suites development and sustainment efforts transition from contractual work by Lockheed Martin to organic work by 309th SMX at Hill AFB. All additional suites beyond 8 will be performed by the 309th SMX until directed otherwise.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	PE 0207131F: <i>A-10 SQUADRONS</i>

F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>

A-10 3600 Master Schedule (PEC 027131F)

		FY 2011				FY2012				FY 2013				FY 2014				FY 2015	FY 2016	FY 2017
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
Suite 7A	SDD & Test	Integration Test																		
	OFP Fielding			◆																
Suite 7B	SDD & Test	R&D / Development / Integration / Flight Test																		
	OFP Fielding							◆												
Suite 8	SDD & Test					R&D / Development / Integration / Flight Test														
	OFP Fielding															◆				
Suite 9-10	SDD & Test																	R&D / Test		
	OFP Fielding																		◆	
HMCS						Integration / Flight Test														
Mode 5 (IFF)						Integration / Flight Test														
Suites 8 - 10 and beyond field on a bi-annual basis																				

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Suite 7A OFP System Design, Development & Flight Test	1	2011	3	2011
Suite 7A Fields	3	2011	3	2011
Suite 7B OFP Design, Development & Flight Test	1	2011	3	2012
Suite 7B Fields	4	2012	4	2012
Mode 5 (IFF) Integration	1	2012	1	2013
Helmet Mounted Cueing System	1	2011	3	2012
Suite 8 - 12 OFP System Design, Development & Flight Test	3	2011	4	2014
Suite 8 OFP Fields	4	2014	4	2014
CAD/CAM 3D Modeling	4	2011	4	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	125.417	131.069	190.257	-	190.257	248.567	221.793	167.486	119.608	Continuing	Continuing
672671: <i>F-16 Squadrons</i>	125.417	131.069	190.257	-	190.257	248.567	221.793	167.486	119.608	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Note: FY12 PB reflected Blk 40-52 Service Life Extension Program (SLEP) as a combined structures and avionics program with funding starting in FY12. The FY13 Budget separates SLEP combined efforts into (1) Legacy SLEP for structures upgrades and (2) Combat Avionics Programmed Extension Suite (CAPES) for avionics modernization upgrades.

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 33-year history, the F-16 has proven itself in combat in a variety of air-to-air and air-to-surface missions such as offensive and defensive counter-air, close air support, forward air control, 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. ASC/WWM (The F-16 System Program 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 Five Year Defense Plan (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 hardware (HW) Group B subsystems. Major tapes (e.g., M6/6+) are released every three years and a minor tape (e.g., M6.2+) 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. Advanced weapons integration includes joint air-to-surface stand-off Missile (JASSM) and joint direct attack munitions (JDAM, Laser JDAM), small diameter bomb (SDB and SDB II), advanced medium range air-to-air missile (AMRAAM), AIM-9X, AIM-9X Block II, and updates to existing weapons. 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 (UAI), and ensuring nuclear surety, safety and compatibility. ALR-56M software updates allow for incorporation of latest updates for changing threat environment reducing war fighter vulnerabilities. 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 GPS inertial navigation set (GPS/INS) updates to improve targeting accuracy and GPS security, EGBU-12 (laser/GPS guided bomb), Mode 5 identification friend or foe (IFF), SDB with UAI, AIM-120D, joint mission planning system (JMPS), and Alpha II Lite. As part of OFP Transition and M6.5/ M7+ OFP upgrade, Lockheed Martin Aeronautics (LM Aero) and Ogden Air Logistics Center (OO-ALC) will split responsibility for software development. LM Aero will produce the common core software tape that will field as M6.5 with the EPAF nations and serve as the baseline for the USAF M7+ OFP. OO-ALC will have software

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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development responsibility for the M7+ software/ hardware candidates being incorporated on USAF jets with M7+ Phase III OFP development scheduled to start in FY12.

b. F-16 Blk 40-52 Legacy SLEP Structures: Structural-SLEP includes full scale durability test (FSDT) which requires a test fixture and structural analysis to begin structural testing. The test fixture began fabrication in FY11. FSDT is intended to determine whether the F-16 Block 40-52 airworthiness certification can be extended from the current certified service life of 8,000 equivalent flight hours (EFH) to 10,000+ EFH. In accordance with the Aircraft Structural Integrity Program (ASIP) and Military Standard MIL-STD 1530C, testing will support Blk 40-52 structural upgrade program that replaces or reworks known life-limited structure to preclude the onset of widespread fatigue damage, maintain safety of flight and enhance aircraft availability beyond 8,000 hours. Engineering, Manufacturing and Development (EMD) extends through FY16.

c. F-16 Blk 40-52 Combat Avionics Programmed Extension Suite (CAPES): This avionics modernization program is needed to keep the F-16 Blk 40-52 aircraft viable in the threat environment beyond 2025. It includes but is not limited to an active electronically scanned array (AESA) radar that offers improved destruction of enemy air defenses (DEAD), and advanced electronic protection capabilities as well as improved reliability and maintainability; center pedestal display (CPD), which replaces the existing flight instrument cluster with a large higher resolution color multi-function display; electronic warfare suite (EW), which provides a single-point access for automated or hands-on EW system control; and integrated broadcast service (IBS) that integrates multiple intelligence broadcasts into a system of systems and migrates tactical receive terminals into a single related joint tactical terminal (JTT) family. Funding to begin design and development of capability modernization was requested as part of F-16 SLEP in the FY12 PB.

d. Auto ground collision avoidance system (Auto GCAS) builds on the Air Force research laboratories (AFRL) fighter risk reduction program (FRRP) demonstrated capability and results in the Auto GCAS capability being production ready for incorporation in the M6.2+ OFP (Minor Tape) fielding in FY14 with potential for nearly eliminating controlled flight into terrain (CFIT) accidents, a leading cause of F-16 loss of pilot and aircraft accidents.

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), diminishing manufacturing source (DMS) and parts obsolescence. The approach to contracting varies by individual project. These hardware improvements include but are not limited to flight systems, improved navigation, multiplex architecture, modular mission computer (MMC) throughput memory upgrades, high speed data communications within the aircraft systems, embedded GPS inertial navigation set (GPS/INS) updates, Blk 40 air-to-air interrogator (AAI), digital video recorder, advanced data transfer equipment (ADTE) and related data transfer and retrieval devices, display upgrades, radio/communication studies, and CAS Data Link. Advanced Capability Improvements include software integration, sensor upgrades, radar updates and other self-protection/electronic protection (EP) enhancements, 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, Harm targeting system (HTS), low (altitude) infrared targeting and navigating (LITENING)) etc. Advanced Capabilities also includes integration of new replacement DMS hardware for a crash survivable data recorder.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	129.103	143.869	117.181	-	117.181
Current President's Budget	125.417	131.069	190.257	-	190.257
Total Adjustments	-3.686	-12.800	73.076	-	73.076
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-12.800			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.028	-			
• Other Adjustments	-0.658	-	73.076	-	73.076
 Change Summary Explanation					
FY11 Adjustments Cong General Reductions \$.658M					
FY12 Congressional marks reduced Service Life Extension Program (SLEP) Structures Program by \$12.8M					
FY13 Funding increased to initiate Engineering & Manufacturing Development (EMD) phase for Combat Avionics Programmed Extension Suite (CAPES)					

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: OFP Updates	71.828	89.227	78.912
Description: OFP Updates-Blk 40-52 OFP (M-tapes) are updated continually to integrate new weapons, targeting pods, improved avionics. M5.1+ has fielded, M5.2+ has completed DT&E phase and entered force development evaluation (FDE)with fielding scheduled for 2QFY2012, M6.1+ is in Phase III of OFP Development and forecast to complete DTE 2QFY12, FDE forecast to start Apr 2012 with fielding scheduled for Sep 2012, M7+ is in Phase II capability definition and candidate selection for the development of post M6+ MMC based avionics system software development.			
FY 2011 Accomplishments: M5.2+ OFP M tape is currently in force development evaluation (FDE), with fielding expected 2QFY12. M6.1+ Phase III OFP major release is approx 65% complete and is on schedule for meeting all internal SW SIL and flight test milestones for DT&E Completion scheduled for Jan 2012. M6.2+ Minor Tape contract has been awarded to LM Aero. Three cockpit review team meetings with the pilots were held to determine the priorities and candidate selection as part of M7+ OFP development at OO-ALC			
FY 2012 Plans:			

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>M6.1+ Phase III OFP completes DT&E Jan 2012 and is on track for fielding Sep 2012, M6.2+ Minor Tape will start SIL integration efforts. OO-ALC and the F16 SPO will document agreements on activities that will be performed as part of M7+ Phase III development efforts starting in May 2012 when M7+ detail design and code efforts for Phase III will begin. OFP transition from LM Aero to OO-ALC will be completed and final SIL HW asset requirements will be verified as part of the OFP transition from LM Aero to OO-ALC. The F-16 SPO will contract with LM Aero to do requirements definition for M6.5+ common OFP development efforts with EPAF.</p> <p>FY 2013 Plans: Continue OFP software design and begin integration and DTE efforts for M6.2+ Minor tape which incorporates Auto GCAS as well as new FAA SW requirement that will allow Mode 5 to field as part of the M6.2+ Minor tape. M7+ completes design tryout (DTO) as part of Phase III risk reduction. Begin M8+ SW candidate assessment to include Combat Avionics Programmed Extension Suite (CAPES) OFP integration and initiates Alpha II Lite.</p>				
<p>Title: Flight Test</p> <p>Description: 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 40-52 OFPs, weapons integration, and sub-systems to ensure capabilities meet ACC's fielding schedule.</p> <p>FY 2011 Accomplishments: FY11 funding supports CTF infrastructure (Government and Contractor) and DT flight sorties for Block 40-52 M6+ OFP DT&E, Legacy OFPs (M4.3+/M5+) weapons/subsystem regression for advanced weapons, AIM-9X Block II and AIM-120, advanced radar risk reduction, Auto GCAS Integration Testing and M7+ initial design tryout (DTO) risk reduction testing.</p> <p>FY 2012 Plans: FY12 funding supports CTF infrastructure (Government and Contractor) and DT flight sorties for Block 40/50 M6+ OFP DT&E, legacy OFP (M4.3+/M5+) advanced weapons/subsystem regression for AIM-9X Block II and AIM-120, Auto GCAS and M7+ DTO testing completing 4QFY12.</p> <p>FY 2013 Plans: FY13 funding supports CTF infrastructure (Government and Contractor) and DT flight DTE sorties for M6.2+ Minor Tape OFP as well as M7+ DTO testing.</p>		22.890	22.672	26.900
<p>Title: Combat Avionics Programmed Extension Suite (CAPES)</p> <p>Description: F-16 Blk 40/50 Combat Avionics Programmed Extension Suite (CAPES): This avionics modernization program is needed to keep the F-16 Blk 40-52 aircraft viable in the threat environment beyond 2025. It includes but is not limited to an</p>		-	10.924	69.700

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>active electronically scanned array (AESA) radar that offers improved destruction of enemy air defenses (DEAD), and advanced electronic protection capabilities as well as improved reliability and maintainability; center pedestal display (CPD), which replaces existing flight instrument cluster with large higher resolution color multi-function display; electronic warfare (EW) updates (ALQ-213), which provides a single-point access for automated or hands-on EW system control; and integrated broadcast service (IBS) that integrates multiple intelligence broadcasts into a system of systems and migrates tactical receive terminals into a single related joint tactical terminal (JTT) family.</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans: The CAPES avionics modernization program will be conducting an integrated Group A risk study to enter source selection. Initial efforts require our prime integrator and subsystem vendors to define the F-16 CAPES avionics architecture, determine potential requirements, conduct studies on RF compatibility impacts, and gather assistance to draft the system requirement document (SRD). CAPES requires the assistance of our aircraft prime integrator, OO-ALC and several subsystem vendors to accomplish these tasks in FY12 to keep the program on schedule to meet an Aquisition Strategy Panel (ASP) in Feb 2012, release an Request For Proposal (RFP) in March 2012 and support Milestone B in FY13. ASP and RFP release must occur prior to initiating the CAPES EMD phase.</p> <p>FY 2013 Plans: CAPES Source Selection will be completed and contract awarded for CAPES EMD. FY13 funds majority of CAPES test assets which are critical to successful completion of EMD development.</p>				
<p>Title: Service Life Extension Program (SLEP) Structures</p> <p>Description: F-16 Blk 40/50 Legacy Service Life Extension Program (SLEP) Structures: This structural-SLEP includes full scale durability test (FSDT) starting in FY11 and requires a test fixture and structural analysis to begin testing. FSDT is intended to determine whether the F-16 Block 40-52 airworthiness certification can be extended from the current certified service life of 8,000 EFH to 10,000+ EFH. In accordance with the Aircraft Structural Integrity Program (ASIP) and MIL-STD 1530C, testing will support Blk 40/50 structural upgrade program that replaces or reworks known life-limited structure to preclude the onset of widespread fatigue damage, maintain safety of flight and enhance aircraft availability beyond 8,000 hours. FSDT started in FY11 and EMD extends through FY16.</p> <p>FY 2011 Accomplishments: Begin full scale durability test (FSDT) as test fixture hardware is procured, and strutral testing and analysis to enable the F-16 Block 40/42/50/52 airworthiness certification to be extended from the current certified service life of 8,000 EFH to 10,000+ EFH. In</p>		18.800	0.800	8.845

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>accordance with the Aircraft Structural Integrity Program (ASIP) and MIL-STD 1530C, a FSDT and a detailed structural analysis must be conducted before ASIP engineers can safely extend the airworthiness certification limits. \$11.8M of FY11 funds were restored which will allow for continued FSDT work into FY12.</p> <p>FY 2012 Plans: Initiates structures EMD design to extend the current certified service life of 8,000 EFH to 10,000+ EFH. In accordance with the Aircraft Structural Integrity Program (ASIP) and MIL-STD 1530C, testing will support Blk 40/50 structural upgrade program that replaces or reworks know life-limited structure to preclude the onset of widespread fatigue damage, maintain safety of flight and enhance aircraft availability beyond 8,000 EFH.</p> <p>FY 2013 Plans: Continue FSDT analysis and structures EMD design to extend the current certified service life of 8,000 EFH to 10,000+ EFH. In accordance with the Aircraft Structural Integrity Program (ASIP) and MIL-STD 1530C, testing will support Blk 40/50 structural upgrade program that replaces or reworks known life-limited structure to preclude the onset of widespread fatigue damage, maintain safety of flight and enhance aircraft availability beyond 8,000 hours.</p>				
<p>Title: EMD HW/Advanced Capabilities Improvements</p> <p>Description: EMD Hardware/Advanced Capability Improvements: EMD HW provides funding to develop, test, and qualify aircraft subsystems replaced or modified due to requirements changes, pre-lanned roduct improvements (P3I) and diminishing manufacturing source (DMS)and parts obsolescence. The approach to contracting varies by individual project. These hardware improvements include but are not limited to flight systems, improved navigation, mux architecture, MMC throughput memory upgrades, high speed data communications within the aircraft systems, embedded GPS/INS updates, Blk 40 air-to-air interrogator (AAI), digital video recorder, advanced data transfer equipment (ADTE) and related data transfer devices and interfaces, display upgrades, radio/communication studies, and CAS data link. Advanced Capability Improvements include software integration, sensor upgrades, radar updates and other self-protection/electronic protection (EP) enhancements, 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, HTS, LITENING) etc. Also includes integration of new replacement DMS hardware for a crash survivable data recorder.</p> <p>FY 2011 Accomplishments: EMD hardware improvements include but are not limited to flight systems, improved navigation, mux architecture, MMC upgrade, embedded GPS/INS updates, Blk 40 air-to-air interrogator (AAI), digital video recorder, advanced data transfer equipment (ADTE) and related data transfer devices (Micro_Cid), display upgrades, radio, communication studies, and CAS data link.</p> <p>FY 2012 Plans:</p>		2.647	0.500	0.500

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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<p>EMD HW/Advanced Capabilities Improvements varies by individual project and is used to develop, test, and qualify aircraft subsystems replaced or modified due to requirements changes, pre-planned product improvements (P3I) and diminishing manufacturing source (DMS) and parts obsolescence unique to data transfer devices and interfaces (Micro CID). Advanced Capability Improvements include software integration, sensor upgrades, 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.</p> <p>FY 2013 Plans: EMD HW/Advanced Capabilities Improvements varies by individual project and is used to develop, test, and qualify aircraft subsystems replaced or modified due to requirements changes, pre-planned product improvements (P3I) and diminishing manufacturing source (DMS) and parts obsolescence unique to data transfer devices (Micro CID). Advanced Capability Improvements include software integration, sensor upgrades, 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.</p>			
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Title: Auto Ground Collision Avoidance System	9.252	6.946	5.400
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<p>Description: This program will nearly eliminate controlled flight into terrain (CFIT) accidents, a leading cause of F-16 loss of pilots and aircraft accidents. One study predicted this capability could have saved 10 pilots and 15 aircraft lost from CFIT accidents had it been available. Air Force 1067 signed by the Combat Air Force Requirements Oversight Council (CAFROC) on 3 Mar 2008 directed development of Auto GCAS for F-16 Blk 40-52 aircraft for fielding with M6.2+.</p>			
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<p>The requested solution is for Auto GCAS and other flight control safety enhancements identified in Phase II for F-16 Blocks 40-52 aircraft to be integrated and delivered with the M6.2+ OFP in FY14. The effort is to qualify and release a digital flight control computer (DFLCC) configuration that is backward compatible with M6.1+ F-16 USAF OFP that can initiate DFLCC TCTO upgrades without Auto GCAS in the core avionics. Production configurations of the remaining software items will be incorporated during the M6.2+ effort and will enable the Auto GCAS function.</p>			
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<p>FY 2011 Accomplishments: Completion of Phase IIIa efforts finalized all fighter risk reduction program capabilities, the Auto GCAS requirements mMatrix, cockpit reviews #1 and #2, select flight control safety enhancement requirements, identified at SRR. Negotiated Phase IIIb</p>			
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UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
contract incorporates unique M6.1+ specific requirements (into core avionics, digital terrain system (DTS), mission planning and flight control OFPs) to allow Auto GCAS to begin system design tryout (DTO) later in the year.			
<i>FY 2012 Plans:</i> Continuation of Auto GCAS Phase IIIb efforts will address in-flight anomalies via software updates. The contractor will incorporate avionics and flight control requirements or requirement revisions (core avionics, DTS, mission planning and flight control OFPs) into DTO #2. Key efforts include configuring the DTO #2 digital flight control (DFLCC) flight test OFP as a production OFP and formally regression testing it with the F-16 USAF M6.1+ avionics suite so fielding of the DFLCC with an Auto GCAS enabled OFP can be initiated via TCTO prior to fielding with M6.2+ OFP.			
<i>FY 2013 Plans:</i> Continue Auto GCAS integration and testing for incorporation into the M6.2+ OFP (Minor Tape) scheduled to field in FY 2014 and finish updating support equipment software to accommodate Auto GCAS testing.			
Accomplishments/Planned Programs Subtotals	125.417	131.069	190.257

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Line Item 39, APAF Aircraft Proc...: <i>Modifications</i>	166.265	56.746	6.896	0.000	6.896	21.515	19.020	33.664	301.924	1,837.040	3,965.235
• Line Item 94, APAF, Aircraft Pro...: <i>Post Production Support</i>	12.668	4.537	8.506	0.000	8.506	14.755	15.191	15.565	15.818	Continuing	Continuing

E. 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 modification development efforts. OFP transition activities from LM Aero to OO-ALC started in FY06 as part of the "follower/leader" effort with software development starting with M7+.

The F-16 Blk 40-52 Service Life Extension Program (SLEP) is comprised of two unique programs that will keep the F-16 aircraft viable in the threat environment beyond 2025. SLEP structures and CAPES are new programs to extend the service life and increase the capabilities of the F-16. SLEP-structures EMD runs through FY16, however, FY12 reflects Congressional marks of -\$12.8M. CAPES is scheduled to begin risk integration studies, and pre-milestone B activities (e.g. ASP, RFP release and source selection) to support EMD contract award in FY13.

The EMD hardware development line provides funding to develop, test, and qualify aircraft subsystems upgrades, communication upgrades, parts obsolescence and diminishing manufacturing source (DMS). The approach to contracting varies by individual project. LM Aero is the prime contractor on all systems except the General

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	PE 0207133F: <i>F-16 SQUADRONS</i>

Electric engines and the Pratt & Whitney engines. Contract types are Time and Material (T&M), Cost Plus Incentive Fee (CPIF), Cost Plus Fixed Fee (CPFF) and Firm Fixed Price (FFP).

F. 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

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

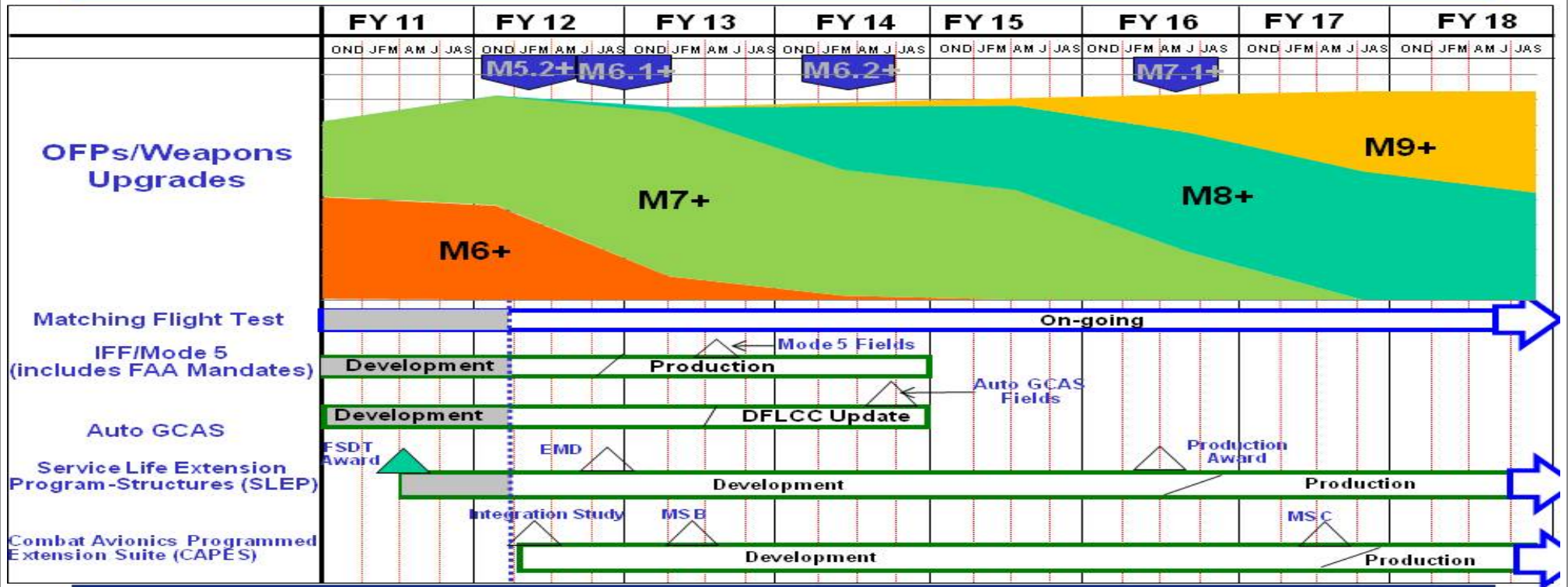
R-1 ITEM NOMENCLATURE
 PE 0207133F: F-16 SQUADRONS

PROJECT
 672671: F-16 Squadrons



F-16 Program Schedule – USAF (R-4 Exhibit)

U.S. AIR FORCE



1

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
M5.2+ Field	2	2012	2	2012
M6.1+ Field	4	2012	4	2012
M6.2+ Minor Tape Field	2	2014	2	2014
M7.1+ Field	3	2016	3	2016
Auto GCAS Field	3	2014	3	2014
Mode 5 IFF Field	2	2014	2	2014
Full Scale Durability Test Contract Award	3	2011	3	2011
Service Life Extension Program (SLEP) Structures EMD Complete	4	2016	4	2016
CAPES Avionics Development EMD	2	2013	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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-15 PROGRAMS</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	200.966	194.831	192.677	-	192.677	354.193	361.441	369.328	320.172	Continuing	Continuing
670131: <i>Initial Operational Test and Evaluation</i>	200.966	90.206	92.555	-	92.555	182.755	170.920	164.333	82.000	Continuing	Continuing
676020: <i>F-15</i>	-	104.625	100.122	-	100.122	171.438	190.521	204.995	238.172	Continuing	Continuing

Note

The F-15 program, Project 670131 has one FY 2013 new start, the F-15 Eagle Passive/Active Warning Survivability System (EPAWSS).

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 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. 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 aircrew training.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
3600: <i>Research, Development, Test & Evaluation, Air Force</i>	PE 0207134F: <i>F-15 PROGRAMS</i>
BA 7: <i>Operational Systems Development</i>	

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	222.677	207.531	167.510	-	167.510
Current President's Budget	200.966	194.831	192.677	-	192.677
Total Adjustments	-21.711	-12.700	25.167	-	25.167
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-12.700			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-5.652	-			
• Other Adjustments	-16.059	-	25.167	-	25.167

Change Summary Explanation

FY 2011: Congressional General Reductions -\$1.059 million, Congressional Directed Reductions -\$15.000 million and Small Business Innovative Research (SBIR) reductions -\$5.652 million

FY 2012: Funding decreases \$12.7 million in Congressional Directed Reductions

FY 2013: Funding increases \$25.167 million to for Advanced Display Core Processor II development and Eagle Passive/Active Warning Survivability System development.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
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-15 PROGRAMS</i>				PROJECT 670131: <i>Initial Operational Test and Evaluation</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
670131: <i>Initial Operational Test and Evaluation</i>	200.966	90.206	92.555	-	92.555	182.755	170.920	164.333	82.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The F-15 program, Project 670131 has one FY 2013 new start, the F-15 Eagle Passive/Active Warning Survivability System (EPAWSS).

A. Mission Description and Budget Item Justification

This includes development of the F-15E APG-82(V)1 Active Electronically Scanned Array (AESA) radar, the F-15C/D and F-15E Advanced Display Core Processor (ADCP) II and the F-15C/D and F-15E Eagle Passive/Active Warning Survivability System (EPAWSS).

The APG-82(V)1 will supply the F-15E with a digital radar that will provide improved range and resolution, as well as a significant improvement in reliability. Also, an AESA radar has the potential to provide electronic attack and protection capabilities.

The ADCP II will develop a common mission computer for the F-15C/D and F-15E. The current mission computers of both platforms have reached their limits of speed, memory and throughput. Additionally, digital systems have changed the security requirements of both platforms, which the older mission computers cannot be upgraded to meet. A common mission computer is expected to reduce overall development costs as well as long term maintenance costs. The program will also develop a new F-15C/D cockpit display to replace an obsolete one.

EPAWSS will replace the obsolete Tactical Electronic Warfare System (TEWS), which will help the aircraft survive in high threat environments.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013
Title: Operational Flight Program (OFP) Development Efforts	47.484	-	-
Description: Provides OFP program software and hardware updates to integrate new capabilities on all F-15 aircraft.			
FY 2011 Accomplishments: Complete Suite 7E System Verification Review (SVR) #1 and #2. Accomplish Suite 7E Flight Test activity for Development Test and Force Development Evaluation. Accomplish S7E Validation/Verification & Aircrew/Maintenance publication and technical			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012		
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-15 PROGRAMS</i>	PROJECT 670131: <i>Initial Operational Test and Evaluation</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
orders production. Award Suite 8E Phase 1. Begin Suite 7C (formerly known as Suite 7M) development and complete PDR. Continuation of organic software support and Special Projects development efforts. FY 2012 Plans: Moved to Project 676020				
Title: Flight Test Description: Flight testing of improvements initiated in prior years. Baseline infrastructure and personnel support for F-15 Developmental Test (DT) and Operational Test (OT) operations. Purchases long-lead test support assets and unique aircraft test instrumentation. FY 2011 Accomplishments: Continuation of flight test activities at Eglin AFB, FL. FY 2012 Plans: Moved to Project 676020		16.648	-	-
Title: Tactical Electronic Warfare System (TEWS) Intermediate Support System (TISS) Technology Insertion Program (TTIP) Description: Development of Tactical Electronic Warfare System (TEWS) Intermediate Support System (TISS) Technology Insertion Program (TTIP). Replaces the TEWS TISS radio frequency interface on 36 stations. FY 2011 Accomplishments: Replaces the TEWS TISS radio frequency interface on 36 stations and provides 5 years of Engineering Support. Replaces the TEWS TISS radio frequency interface on 36 stations. FY 2012 Plans: N/A		1.386	-	-
Title: F-15E Radar Modernization Program (RMP) APG-82(V)1 Description: New AESA radar replacing legacy APG-70 radars on all F-15E aircraft. FY 2011 Accomplishments: Complete System Verification Review (SVR) #1. Complete Production Readiness Review. Complete installation/modification of 5 DT/OT test aircraft. Complete Flight Test Readiness Review. Begin DT&E. Complete MS C FY 2012 Plans:		76.462	33.353	1.351

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012		
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-15 PROGRAMS</i>	PROJECT 670131: <i>Initial Operational Test and Evaluation</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Complete DT&E and SVR#2. Begin IOT&E. Begin verification of publications. Complete modification of aircraft. FY 2013 Plans: Complete EMD phase of program				
Title: F-15C/D Infrared Search and Track system (IRST) Description: Develops IRST pod for use on F-15C/D with fast scanning air-to-air detection, tracking and ranging capability in the Infrared (IR) spectrum. FY 2011 Accomplishments: Risk reduction tech demo, test hardware development, OFP software maturation, and OGCs associated with concluding pre-MS B development. FY 2012 Plans: N/A FY 2013 Plans: Moved to Project 676020		30.399	-	-
Title: Eagle Passive/Active Warning Survivability System (EPAWSS) Description: Replacement of the existing F-15 self-protection, Tactical Electronic Warfare System (TEWS). FY 2011 Accomplishments: Not applicable FY 2012 Plans: Not applicable FY 2013 Plans: New Start FY13. Integration risk reduction, technology development; OFP risk reduction and system/sub-system design.		-	-	5.082
Title: Advanced Display Core Processor (ADCP) II (formerly known as Computer Processor Modernization Program and Advanced Display Core Processor Plus w/Vertical Situation Display. FY12 combined programs) Description: New central computer for both F-15E and F-15C/D modernization. Additionally, this program provides a high resolution color display to replace the current F-15C/D Vertical Situation Display (VSD). FY 2011 Accomplishments:		28.587	56.853	86.122

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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-15 PROGRAMS</i>	PROJECT 670131: <i>Initial Operational Test and Evaluation</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Initiated Pre-EMD Technology Development phase with the design and production and initial production of ADCP II prototypes. Preliminary Subsystem Requirements development. Prototyping of initial boot software. FY 2012 Plans: Subsystem System Requirements Review (SRR), Preliminary Design Review (PDR), Aircraft SRR, Subsystem Critical Design Review (CDR). Continued software prototyping. Begin EMD. FY 2013 Plans: Continue EMD. Critical Design Review (CDR). Initial hardware build. OFP Suite 8E rehost for F-15 C/D. Software development and testing on prototype hardware. Vertical Situation Display Replacement (VSDR) design and integration.			
Accomplishments/Planned Programs Subtotals	200.966	90.206	92.555

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207130F, Aircraft Modificati...: <i>PE 0207130F, Aircraft Modification (F-15A/B/C/D Squadrons, APAF) [BP 11]</i>	184.439	137.010	62.660	0.000	62.660	196.999	189.745	201.894	132.844	Continuing	Continuing
• PE 0207134F, Aircraft Modificati...: <i>PE 0207134F, Aircraft Modification (F-15E Squadrons, APAF [BP11])</i>	118.243	117.825	85.045	0.000	85.045	249.533	270.211	320.222	333.185	Continuing	Continuing
• PE 0207445F, Aircraft Modificati...: <i>PE 0207445F, Aircraft Modification (Fighter Tactical Data Link, APAF) [BP11]</i>	0.171	0.000	0.000	0.000	0.000	4.377	5.821	5.946	5.964	Continuing	Continuing
• PE 0809731F, Aircraft Modificati...: <i>PE 0809731F, Aircraft Modification (Training Support to Units, APAF) [BP11]</i>	0.987	0.751	0.673	0.000	0.673	0.835	1.081	1.107	1.125	Continuing	Continuing
• PE 0207130F, Aircraft Support Eq...: <i>PE 0207130F, Aircraft</i>	2.983	1.545	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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-15 PROGRAMS</i>	PROJECT 670131: <i>Initial Operational Test and Evaluation</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
<i>Support Equipment (O&I) (F-15A/B/C/D Squadrons, APAF) [BP 12]</i>											
• PE 0207134F, Aircraft Post Production...: <i>PE 0207134F, Aircraft Post Production Support (F-15E Squadrons, APAF) [BP 13]</i>	17.502	2.076	2.363	0.000	2.363	2.403	2.479	2.540	2.581	Continuing	Continuing
• PE 0207130F, Aircraft Initial Sp...: <i>PE 0207130F, Aircraft Initial Spares and Repairs (F-15A/B/C/D Squadrons, APAF) [BP 16]</i>	0.096	0.087	0.097	0.000	0.097	3.951	13.181	8.460	8.300	Continuing	Continuing
• PE 0207134F, Aircraft Initial Sp...: <i>PE 0207134F, Aircraft Initial Spares and Repairs (F-15E Squadrons, APAF) [BP 16]</i>	6.458	17.863	22.012	0.000	22.012	21.253	16.137	15.765	19.887	Continuing	Continuing

D. Acquisition Strategy

Program is a continuation of effort which includes the development for all F-15 models. Funds are executed organically in support of equipment improvement, study, analysis, and test. Acquisition and management strategies for each program are independently developed and use a variety of contract methods and types to accomplish program objectives.

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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-15 PROGRAMS</i>	PROJECT 670131: <i>Initial Operational Test and Evaluation</i>



U.S. AIR FORCE

F-15E Modifications



Dominant Air Power: Design For Tomorrow... Deliver Today

Program	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	Requirement
APG-82(V)1	Development	Development	Production	Installation				221
ADCP II	Development	Development	Production	Installation				396
EPAWSS			Production	Installation				396
	Development		Production	Installation				

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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-15 PROGRAMS</i>	PROJECT 670131: <i>Initial Operational Test and Evaluation</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
F-15E APG-82(V)1 RMP EMD - Complete	1	2011	2	2013
ADCP II EMD	1	2011	3	2016
EPAWSS--FY13 New Start	1	2013	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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-15 PROGRAMS</i>	PROJECT 676020: <i>F-15</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
676020: <i>F-15</i>	-	104.625	100.122	-	100.122	171.438	190.521	204.995	238.172	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

BPAC 676020 was created in the FY 2012 President's Budget to improve management of F-15 development. Funds that were moved from BPAC 670131 to BPAC 676020 were: FY 2012 \$117.7M, FY 2013 \$129.7M, FY 2014 \$145.4M, FY 2015 \$144.5M, and FY 2016 \$146.8M.

A. Mission Description and Budget Item Justification

This effort includes development of F-15E Electronic Protection (EP) capabilities and provides funding for Operational Flight Program (OFP) upgrades and for Flight Testing.

EP will enhance digital Active Electronic Scanned Array (AESA) radar capabilities to counter sophisticated electronic threats.

For the F-15 to maintain operational effectiveness, the program must make a continuous effort to provide the platforms with improved capabilities. To accomplish this there is an on-going need to develop software upgrades and to flight test new capabilities and systems. The OFP funding line allows the Air Force to release software upgrades approximately every 3 years. At any one time the program has three OFP upgrades in work: one in requirements definition/pricing, one in code writing and test, and one in flight test and release preparation. Flight Test funding line allows the Air Force to fund the on-going test effort.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013
Title: Operational Flight Program (OFP) Development Efforts	-	41.970	75.341
Description: Provides OFP program software and hardware updates to integrate new capabilities on all F-15 aircraft.			
FY 2011 Accomplishments: Funded in Project 670131			
FY 2012 Plans: Continue Suite 8E Phase 1 and initiate S8E Phase 2 planning and contracting actions. Continue Suite 7C (otherwise known as Suite 7M) development efforts and complete Critical Design Review (CDR). Continuation of organic software support and Special Projects development efforts.			
FY 2013 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012		
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-15 PROGRAMS</i>	PROJECT 676020: <i>F-15</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Complete S8E requirements definition and initiate S8E Phase II development. Continue Suite 7C (otherwise known as Suite 7M) development and CDR. Integrate Alpha 2 Lite into the OFP. Continuation of organic software support and Special Projects development efforts.				
<p>Title: Flight Test</p> <p>Description: Flight testing of improvements initiated in prior years. Baseline infrastructure and personnel support for F-15 Developmental Test (DT) and Operational Test (OT) operations. Purchases long-lead test support assets and unique aircraft test instrumentation.</p> <p>FY 2011 Accomplishments: Funded in Project 670131</p> <p>FY 2012 Plans: F-15 Flight Test Support provides prime contractor support cadre at Eglin and Nellis for DT/OT support, avionics integration lab Operations and Maintenance (O&M), Combined Test Force (CTF) O&M, and long-lead test unique equipment, i.e., program specific aircraft instrumentation, weapons instrumentation kits, weapons simulators, data reduction/handling equipment.</p> <p>FY 2013 Plans: F-15 Flight Test Support provides prime contractor support cadre at Eglin and Nellis for DT/OT support, avionics integration lab O&M, CTF O&M, and long-lead test unique equipment, i.e., program specific aircraft instrumentation, weapons instrumentation kits, weapons simulators, data reduction/handling equipment.</p>		-	16.105	16.049
<p>Title: F-15C/D BLOS</p> <p>Description: Provide F-15C/D beyond line of sight (BLOS) communications capability on all long term aircraft.</p> <p>FY 2011 Accomplishments: Not applicable</p> <p>FY 2012 Plans: New start FY 2012. Software development and qualification.</p>		-	6.550	-
<p>Title: F-15E Radar Enhancements</p> <p>Description: Improvements to F-15E Electronic Protection (EP) and other radar enhancements.</p> <p>FY 2011 Accomplishments:</p>		-	40.000	8.732

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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-15 PROGRAMS</i>	PROJECT 676020: <i>F-15</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Not Applicable			
FY 2012 Plans: New start FY 2012. Initial EP capability integration, technology maturation, hardware purchases for radar lab development and testing. Assessment of existing EP effectiveness.			
FY 2013 Plans: EP software development, technology maturation, and OFP risk reduction.			
Accomplishments/Planned Programs Subtotals	-	104.625	100.122

C. Other Program Funding Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• PE 0207130F, Aircraft Modificati...: <i>PE 0207130F, Aircraft Modification (F-15A/B/C/D Squadrons, APAF) [BP 11]</i>	184.439	137.010	62.660	0.000	62.660	196.999	1,894.000	201.894	132.844	Continuing	Continuing
• PE 0207134F, Aircraft Modificati...: <i>PE 0207134F, Aircraft Modification (F-15E Squadrons, APAF [BP11])</i>	118.243	117.825	85.045	0.000	85.045	249.533	270.211	320.222	333.185	Continuing	Continuing
• PE 0207445F, Aircraft Modificati...: <i>PE 0207445F, Aircraft Modification (Fighter Tactical Data Link, APAF) [BP11]</i>	0.171	0.000	0.000	0.000	0.000	4.377	5.821	5.946	5.964	Continuing	Continuing
• PE 0809731F, Aircraft Modificati...: <i>PE 0809731F, Aircraft Modification (Training Support to Units, APAF) [BP11]</i>	0.987	0.751	0.673	0.000	0.673	0.835	1.081	1.107	1.125	Continuing	Continuing
• PE 0207130F, Aircraft Support Eq...: <i>PE 0207130F, Aircraft Support Equipment (O&I) (F-15A/ B/C/D Squadrons, APAF) [BP 12]</i>	2.983	1.545	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
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-15 PROGRAMS</i>				PROJECT 676020: <i>F-15</i>			

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

Line Item	FY 2011	FY 2012	FY 2013	FY 2013	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Cost To	
			Base	OCO	Total					Complete	Total Cost
• PE 0207134F, Aircraft Post Produ...: <i>PE 0207134F, Aircraft Post Production Support (F-15E Squadrons, APAF) [BP 13]</i>	17.502	2.076	2.363	0.000	2.363	2.403	2.479	2.540	2.581	Continuing	Continuing
• PE 0207130F, Aircraft Initial S...: <i>PE 0207130F, Aircraft Initial Spares and Repairs (F-15A/B/C/D Squadrons, APAF) [BP 16]</i>	0.096	0.086	0.097	0.000	0.097	3.951	13.181	8.460	8.300	Continuing	Continuing
• PE 0207134F, Aircraft Initial Sp...: <i>PE 0207134F, Aircraft Initial Spares and Repairs (F-15E Squadrons, APAF) [BP 16]</i>	6.458	17.863	22.012	0.000	22.012	21.253	16.137	15.765	19.887	Continuing	Continuing

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. Acquisition and management strategies for each program are independently developed and use a variety of contract methods and types to accomplish program objectives.

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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-15 PROGRAMS</i>	PROJECT 676020: <i>F-15</i>



F-15C/D Modifications



U.S. AIR FORCE

Dominant Air Power: Design For Tomorrow... Deliver Today

Program	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	Requirement
OFF Suite 7 / 8 / 9	[Yellow bars across all years]							NA
		S7E		S7C	S8E			
IRST	[Yellow bars across all years]							100
BLOS/SLOS SATCOM		[Yellow bar]		[Cyan bar]				249
				[Green bar]				
TISS TIP	[Green bar]							36
Radar Enhancements		[Yellow bars across all years]						NA
	Development		Production		Installation			

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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-15 PROGRAMS</i>	PROJECT 676020: <i>F-15</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
OFP Continuous Development	1	2011	4	2017
F-15 C/D BLOS	1	2012	4	2012
Radar Enhancements	1	2012	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	12.496	13.253	13.683	-	13.683	14.037	14.565	15.011	15.378	Continuing	Continuing
674595: <i>F-16 HARM Targeting System</i>	12.496	13.253	13.683	-	13.683	14.037	14.565	15.011	15.378	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 element 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 and Block 40/42 aircraft with the ability to employ the AN/ASQ-213 Pod. With the introduction of HTS Revision 7 (HTS R7) in 2007, the AN/ASQ-213 Pod now has a precision geo-location capability to target Precision Guided Munitions (PGMs) to destroy fixed and mobile enemy air defense elements. Additionally, by relocating the AN/ASQ-213 HTS R7 Pod to the aircraft's left inlet hard point, the F-16 can simultaneously carry the HTS R7 Pod and an Advanced Targeting Pod (ATP). HTS R7 fielding is complete and represents 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 derived precision targeting data can be provided to all Joint Forces via Link-16. This effort continues preplanned product improvements (P3I) for the HTS and applies technologies similar to those demonstrated in the Advanced Tactical Targeting Technologies (AT3) program and HTS R7 development.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	12.937	13.253	13.803	-	13.803
Current President's Budget	12.496	13.253	13.683	-	13.683
Total Adjustments	-0.441	-	-0.120	-	-0.120
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.375	-			
• Other Adjustments	-0.066	-	-0.120	-	-0.120

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
<u>Change Summary Explanation</u> No Significant Changes				
<u>C. Accomplishments/Planned Programs (\$ in Millions)</u>		FY 2011	FY 2012	FY 2013
Title: P3I R7 Software Upgrade (SWUP)		10.198	9.490	10.895
Description: P3I R7 Software Upgrade (SWUP)				
FY 2011 Accomplishments: HTS R7.7 SWUP flight testing support and additional software releases for flight testing continued. Studies continued on risk reduction efforts for future P3I phase(s). HTS R7.7 SWUP flight testing continued to include completing all data baseline activities, initial formal developmental flight testing and all associated data analysis, and release of upgraded software for subsequent flight testing. Studies included candidate selection process activities and risk reduction efforts for follow-on upgrades. Mission support, i.e., program management for administrative and technical support activities continued. The major thrusts of this year were 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 future phase(s) was a continuation of the HTS P3I effort.				
FY 2012 Plans: HTS R7.7 SWUP flight testing support and additional software releases for flight testing continues, culminating in the release of R7.7 SWUP software. Studies continue on risk reduction efforts for future P3I phase(s). HTS R7.7 SWUP formal developmental flight testing and all associated data analysis and release of upgraded software will be completed. Risk reduction activities and candidate selection study efforts for follow-on upgrades continue. Also, final steps will be completed to potentially award the R7.8 SWUP development. The major pushes of this year will be releasing R7.7 SWUP software to the field, continued risk reduction candidate selection activities for follow-on P3I efforts, and planned award of the R7.8 SWUP development.				
FY 2013 Plans: HTS R7.8 SWUP development continues from risk reduction and program definition to software development and preparation for flight testing. Studies continue on risk reduction efforts for future P3I phase(s). Mission support, i.e., program management for administrative and technical support activities continue. The major thrusts of this year are R7.8 SWUP design and code activities and planning for subsequent flight testing.				
Title: Flight Test		1.838	2.969	1.900
Description: Flight Test				
FY 2011 Accomplishments: Government flight test operations continued to include test planning and execution activities for HTS R7.7 SWUP CT&E and DT&E efforts, scheduling support for all needed resources and required configurations for each flight test mission. Ground testing				

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>continued via anechoic chamber testing, as needed. The test organization continued to conduct each mission to include F-16 test aircraft operations, threat ranges and associated support, air re-fueling, and range control support. Post-mission flight test support for each mission also continued. Initial flight test planning for HTS R7.8 SWUP began.</p> <p>FY 2012 Plans: Government flight test operations continue to include test planning and execution activities for final HTS R7.7 SWUP DT&E efforts, scheduling support for all needed resources and required configurations for each flight test mission. Ground testing continues via anechoic chamber testing, as needed. The test organization continues to conduct each mission to include F-16 test aircraft operations, threat ranges and associated support, air re-fueling, and range control support. Post-mission flight test support for each mission also continues. Initial test planning for HTS R7.8 SWUP continues.</p> <p>FY 2013 Plans: Government flight test operations continue to include test planning, and risk mitigation plans to address scarcity of resources; i.e., aircraft and ranges. This funding also includes test data analysis support and baselining of requirements from actual test data results during HTS SWUP R7.7 flight tests.</p>			
<p>Title: Mission Planning</p> <p>Description: Joint Mission Planning System (JMPS) (Formerly Air Force Mission Support System (AFMSS))</p> <p>FY 2011 Accomplishments: Continued mission planning software upgrade effort to include correcting deficiencies, additional engineering software releases and preparations for formal fielding with HTS R7.7 SWUP.</p> <p>FY 2012 Plans: Continue mission planning software upgrade effort to include correcting deficiencies, additional engineering software releases and formal fielding in conjunction with HTS R7.7 SWUP software release.</p> <p>FY 2013 Plans: Continue mission planning in conjunction with HTS R7.8 software upgrade. This effort will begin planning this year to address deficiencies, additional engineering software releases and forward fielding.</p>	0.460	0.794	0.888
Accomplishments/Planned Programs Subtotals	12.496	13.253	13.683

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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D. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• No other investment funding: <i>N/A</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. 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.

F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY

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

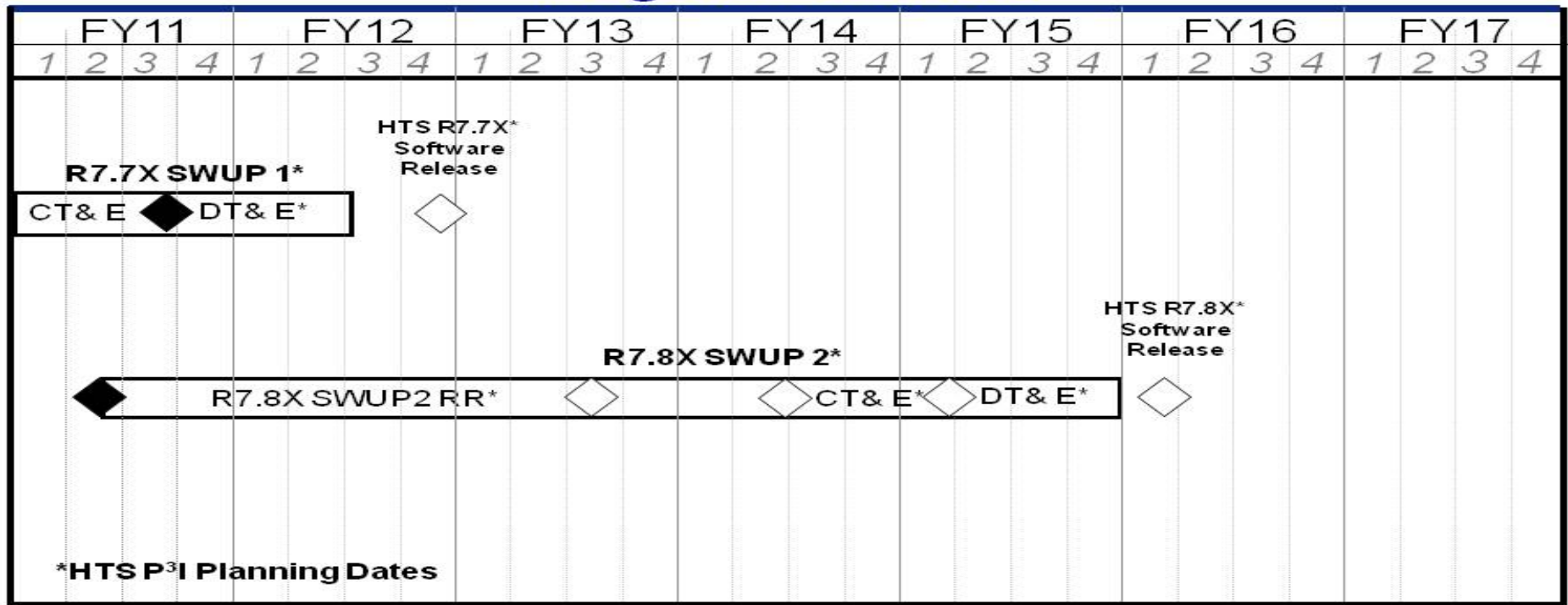
R-1 ITEM NOMENCLATURE

PE 0207136F: *Manned Destructive Suppression*

PROJECT

674595: *F-16 HARM Targeting System*

HTS Development Program Schedule



*HTS P³I Planning Dates

SWUP - Software Upgrade Program
 P³I - Preplanned Product Improvement

CT&E - Contractor Test & Evaluation
 RR - Risk Reduction

DT&E - Development Test & Evaluation

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
R7.7 SWUP Flight Test (DT&E)	1	2011	2	2012
HTS P3I Risk Reduction for Next Phase Contract	3	2011	3	2013
R7.8 SWUP Contract	3	2013	2	2016
R7.8SWUP Flight test (CT&E/DT&E)	3	2014	4	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	493.506	571.320	371.667	-	371.667	328.542	249.810	344.647	428.663	Continuing	Continuing
674785: <i>F-22</i>	493.506	571.320	371.667	-	371.667	328.542	249.810	344.647	428.663	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Totals include funding for PRCP Program Number, 265, F-22

The Cost to Complete and Total Cost for MDAP projects in this program element are documented in the R3. The Cost to Complete and Total Cost on the R2 are entered as "Continuing" and not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding.

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.

BA7- This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	576.330	718.432	689.201	-	689.201
Current President's Budget	493.506	571.320	371.667	-	371.667
Total Adjustments	-82.824	-147.112	-317.534	-	-317.534
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-147.000			
• Congressional Rescissions	-2.608	-0.112			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-15.216	-			
• Other Adjustments	-65.000	-	-317.534	-	-317.534

Change Summary Explanation

FY 2011: \$82.8M reduction due to -\$2.6M Congressional Rescission, -\$15.2M SBIR, and -\$65.0M Congressional Reductions

FY 2012: \$147.1M reduction due to -\$147.0M Congressional Reduction and -0.1M FFRDC

FY 2013: \$317.5M reduction due to \$187.9M Increment 3.2B full funding realignments/adjustments, -\$140.1M realignment of Increment 3.2B to new PE 0605213F, \$9.8M Congressional Add for Line-in-the-Sky (LIS) Auto Ground Collision Avoidance System (AGCAS), and \$0.7M for inflation adjustments

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Software Support	49.037	68.683	59.843
Description: Operational Flight Plan (OFP) testing in the Raptor Integration Lab (RAIL) and the Avionics Integration Lab (AIL), Developmental and Operational flight test, Pilot Training Systems (PTS) software upgrades, Synthetic Aperature Radar (SAR) mapping capability development for the PTS, Trainer/Integrated Maintenance Information System (IMIS) Software Enhancements			
FY 2011 Accomplishments: In FY 2011: Flight test on the Update 3 software support OFPs are completed and fielded. FOT&E will be conducted on Update 3. Update 4 coding will be accomplished, and testing in the system integration laboratories will begin for two of the three Update 4 software configurations. Developmental flight testing will begin on the first of three software configurations. Pilot Training Systems (PTS) software upgrades, IMIS to continue Ada to C++ conversion focusing on Integrated Maintenance Data Systems (IMDS) interface error correction and Maintenance Data Collection.			
FY 2012 Plans:			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>In FY 2012: Update 4 software support OFPs are completed. Flight testing of all the Update 4 software products will be completed and fielded. Pilot Training Systems (PTS) Software upgrades. Synthetic Aperature Radar (SAR) mapping capability development for the PTS. IMIS to continue focus on ADA to C++ conversion focusing on three additional major areas.</p> <p>FY 2013 Plans: In FY 2013: Update 4 software support OFPs are completed. Flight testing of all the Update 4 software products will be completed and fielded. Pilot Training Systems (PTS) Software upgrades. Synthetic Aperature Radar (SAR) mapping capability development for the PTS. IMIS to continue focus on ADA to C++ conversion focusing on three additional major areas.</p>				
<p>Title: System Engineering/Program Management Support</p> <p>Description: Provide for F-22 program-wide planning and execution.</p> <p>FY 2011 Accomplishments: In FY 2011: Provides for F-22 program wide planning and execution comprised of, but not limited to the following: Requirements Identification, Schedule Analysis & Integration, Cost Estimating Data, and Systems Engineering Process Management.</p> <p>FY 2012 Plans: In FY 2012: Same as prior year.</p> <p>FY 2013 Plans: In FY 2013: Same as prior year.</p>		15.000	15.600	14.500
<p>Title: Mission Support</p> <p>Description: Continue mission support of the Program Office; travel, computer costs, misc contracts, etc.</p> <p>FY 2011 Accomplishments: In FY 2011: Funds provide management and oversight activities in direct support of F-22 Increment Development, RAMMP, Aircraft Structural Integrity Program (ASIP), Flight Test Support, 3.2A Should Cost analysis, and 3.2B Milestone B documentation.</p> <p>FY 2012 Plans: In FY 2012: Funds provide management and oversight activities in direct support of F-22 Increment Development, RAMMP, Aircraft Structural Integrity Program (ASIP), Flight Test Support, 3.2B Should Cost analysis, and 3.2B Milestone B documentation.</p> <p>FY 2013 Plans: In FY 2013: Same as prior year. Increment 3.2B activities under separate PE 65213F.</p>		17.261	21.795	10.787
<p>Title: Reliability and Maintainability Maturation Program (RAMMP)</p>		10.000	14.000	10.754

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Description: Continue development of RAMMP to improve MTBM and aircraft availability.</p> <p>FY 2011 Accomplishments: (U) In FY 2011: Provides for development of multiple efforts to improve Mean Time Between Maintenance (MTBM), Maintainability, and reduce F-22 Weapon System Life Cycle Costs.</p> <p>FY 2012 Plans: (U) In FY 2012: Same as prior year.</p> <p>FY 2013 Plans: (U) In FY 2013: Same as prior year.</p>				
<p>Title: Increment 3.1</p> <p>Description: The F-22 Increment 3.1 Modernization Program consists of the software and hardware modifications necessary to provide Enhanced Global Strike (GS) capabilities on the Lot 4B and beyond F-22 aircraft and training systems. Increment 3.1 is currently implementing the design products to deliver the enhanced capabilities to support retrofit on operational F-22 aircraft and their support elements.</p> <p>FY 2011 Accomplishments: In FY 2011: Complete Increment 3.1 developmental flight test. Increment 3.1 operational flight test through completion.</p> <p>FY 2012 Plans: In FY 2012: No planned activities in 2012</p> <p>FY 2013 Plans: In FY 2013: No planned activities in 2013</p>		10.067	-	-
<p>Title: Increment 3.2A</p> <p>Description: The F-22 Increment 3.2A Modernization Program consists of the software development necessary to provide Increment 3.2A capabilities including improvements to Electronic Protection, Combat Identification and Link-16 Receive.</p> <p>FY 2011 Accomplishments: In FY 2011: Requirements Development will be completed and will culminate in a System Design Review. Detailed design of the capabilities will begin and a Preliminary Design Review will be conducted. Preliminary work to prepare lab and test facilities for Development, Integration, and Test will also begin.</p> <p>FY 2012 Plans:</p>		92.594	85.075	80.360

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>In FY 2012: The detailed design phase will continue and will culminate in a Critical Design Review. Preliminary work will continue to prepare lab and test facilities for Development, Integration, and Test. All software coding, integration and testing will begin.</p> <p>FY 2013 Plans: In FY 2013: Work will continue to prepare lab and test facilities for Development, Integration, and Test. All software coding, integration and testing will continue. Developmental Test will be conducted.</p>				
<p>Title: Increment 3.2B</p> <p>Description: The F-22 Increment 3.2B Modernization Program consists of the software development necessary to provide Increment 3.2B capabilities including Intra-Flight Data Link Improvements, Electronic Protection, AIM-9X and AIM-120D integration with Common Weapon Engagement Zone, Geolocate 2.0 and Stores Management System Common Split Bus. The Enhanced Stores Management System (ESMS) program is a hardware development and risk reduction program required to integrate any new weapons on the F-22 beyond Increment 3.1.</p> <p>FY 2011 Accomplishments: In FY 2011: ESMS program will continue sub-system integration and complete it in the Avionics Integration Lab (AIL). Flight test of the ESMS sub-system will also be performed and scheduled to be completed as well. Requirements Development will be completed and will culminate in a System Design Review. Detailed design of the capabilities will begin. Preliminary work to prepare lab and test facilities for Development, Integration, and Test will also begin. Efforts leading up to MDD will be accomplished. A significant amount of hardware is being purchased to support Increment 3.2B candidate testing and development.</p> <p>FY 2012 Plans: In FY 2012: MDD will be accomplished. Work to prepare lab and test facilities for Development, Integration and Test continues.</p> <p>Increment 3.2B will continue Design efforts; this effort will require all detailed design phase work necessary to start product development and to plan for the remaining phase efforts required to incorporate Increment 3.2 capabilities into the F-22 weapon system as described in the Increment 3.2 Operational Capability Description Document.</p> <p>FY 2013 Plans: In FY 2013: Increment 3.2B FY13 activities under separate Project Element 0605213F.</p>		112.919	113.900	-
<p>Title: Combined Test Force (CTF)</p> <p>Description: The F-22 Combined Test Force (CTF), located at Edwards Air Force Base, conducts full-up weapons system testing to assess the synergistic effect of the F-22 combined characteristics of stealth, speed, maneuverability, and integrated avionics in mission accomplishment. The CTF uses operationally significant ground and flight test scenarios, when practical, to identify</p>		68.808	80.000	65.729

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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system performance deficiencies early before they are more difficult and costly to resolve. Starting in FY13, CTF efforts directly associated with Increment 3.2B development are located in the 3.2B program documentation, Project Element 65213F.

FY 2011 Accomplishments:

In FY 2011: The significant programs undergoing flight test at AFFTC include: The closeout of Increment 3.1, Update 3, AIM-9X Risk reduction, SDB Risk Reduction, ESMS/TA-74, Cold stick tests, Arresting Gear, Main Oil Pump, Signature Management Plan, 6 gallon test, Bio-fuel Certification, and the Travel Pod. Smaller projects planned were IR Countermeasure Door, Auxiliary Power Unit Exhaust Door Temperature, Augmentor/Ignitor, Air Cycle machine Reliability Improvements; Loads Regression Testing; #5 carbon seal redesign; Structural Health Monitoring Device Durability; and Engine Software version #17.

FY 2012 Plans:

In FY 2012: The significant programs undergoing flight test at AFFTC include: Update 3.6 and update 4 software testing; AIM-9X Risk reduction and AIM-9X SEEK EAGLE testing, arresting gear, External Fuel Tank testing, 6 gallon testing, Bio-fuel Certification, and ECS OBOGS investigations. Small projects currently-planned also include: NUCIF, MOP, dragging brake issue, Weapon Bay Door Redesign, cracking/missile fin rub; Flight Control Problem, and 5th Generation Common Architecture.

FY 2013 Plans:

In FY 2013: The significant programs undergoing flight test at AFFTC include: major software improvements associated with Increment 3.2A; Update 5 testing. Other small program requirements are expected to require testing such as supersonic tanks; AIM-9 employment with tanks; and Auto Ground Collision Avoidance software.

<i>Title:</i> Laboratory Test & Operations (LTO)	58.291	79.300	73.802
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Description: Lab Test & Operations is a continuous activity that plans and conducts development, integration, test, & verification (IT&V) of F-22 OFPs with F-22 hardware. Starting in FY14 (there is no 3.2B LTO money in FY13), LT&O efforts directly associated with Increment 3.2B development are located in the 3.2B program documentation, Project Element 0605213F. LT&O provides "ready state" maintenance, staffing, and operation of 20 development labs including 5 unique major System Integration Laboratories (SILs): the Agile Integration Lab (AIL); the Raptor Integration Lab; the Air Combat Simulation (ACS) Lab; the Vehicle Management System (VMS) Vehicle Integration Facility (VIF); and the Vehicle System Simulator (VSS). Through the ACS, LT&O provides the combat air forces with advanced mission-level test and training capability through a fully representative simulation.

FY 2011 Accomplishments:

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>In FY 2011: Maintain lab “ready state” availability in support of F-22 programs. Update critical systems as required to support new aircraft configurations and capabilities. Accomplish OFP verification and risk reduction. Support pilot training in support of Air Combat Command exercises and war gaming; Air Force Operational Test & Evaluation Center test planning; and test event rehearsals. Support periodic Air Warfare Center operational mission data updates.</p> <p>FY 2012 Plans: In FY 2012: Maintain lab “ready state” availability in support of F-22 programs. Update critical systems as required to support new aircraft configurations and capabilities. Accomplish OFP verification and risk reduction. Support pilot training in support of Air Combat Command exercises and war gaming; Air Force Operational Test & Evaluation Center test planning; and test event rehearsals. Support periodic Air Warfare Center operational mission data updates.</p> <p>FY 2013 Plans: In FY 2013: Same as prior year.</p>				
<p>Title: VAX Migration</p> <p>Description: The F-22 VAX Migration program develops, integrates, tests, and deploys computer infrastructure and software tools to replace existing VAX-based resources used to develop, field, and sustain F-22 capabilities. The current VAX architecture is obsolete, resulting in increased program risk, and delays in development due to reliance upon increasingly unreliable and unsupportable infrastructure.</p> <p>FY 2011 Accomplishments: In FY 2011: The majority of the activities include labor required to translate existing VAX based software development tools and procedures to new platforms. Where required this includes rewriting existing code to provide equivalent results on target platforms. Each system requires complete certification testing validation. Consequently this activity also includes contractor testing and support for government certification and accreditation of migrated systems; and updating of required contractor software and hardware development process to reflect resulting architectures.</p> <p>FY 2012 Plans: In FY 2012: Continue development and delivery of the Network User Control Interface (NUCIF) card allowing for non-VAX computers to interface with F-22 test aircraft and development labs; continue site-by-site replacement of VAX systems through deployment of PC-based systems, compilers and software support tools including Dimensions, Cradle, Quicksilver, Deployment of instrumentation tools, simulation tools and user unique tools.</p> <p>FY 2013 Plans: In FY 2013: Same as prior year.</p>		31.850	28.000	10.500
Title: F-22 Small Project Roll-up		10.924	17.374	8.925

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Description: Continue F-22 modernization development and support activities</p> <p>FY 2011 Accomplishments: Provides for F-22 modernization activities including, but not limited to: LO Signature Mgmt, EN/Threat Modeling Support, DT Weapons Assets, F-22 Secure Software Dev Networks, PT Dynamic SAR, Support Equipment Development, Urgent Response, and OGC/GFE.</p> <p>FY 2012 Plans: In FY 2012: Same as prior year.</p> <p>FY 2013 Plans: In FY 2013: Same as prior year.</p>				
<p>Title: Crypto Modernization</p> <p>Description: Crypto Modernization provides for development to support crypto-graphic updates. Two crypto-graphic projects are currently in work: the KOV-20 Field Upgrade (field upgrade only) and the KOV-20 Off-Ramp.</p> <p>FY 2011 Accomplishments: FY 2011: Crypto Modernization activities: KOV-20 Field Upgrade to retrofit the test jets with the upgraded KOV-20 units. KOV-20 Off-Ramp requirements definition and tech package development will be accomplished.</p> <p>FY 2012 Plans: FY 2012: Crypto Modernization activities: KOV-20 Field Upgrade to begin fleet retrofit with upgraded KOV-20 units. KOV-20 Off-Ramp will conduct requirements analysis and generation phase will be accomplished and the design phase will begin.</p> <p>FY 2013 Plans: In FY 2013: KOV-20 Field Upgrade to continue fleet retrofit with upgraded KOV-20 units. KOV-20 Off-Ramp will continue the design phase and transition into coding and testing.</p>		1.105	0.813	15.905
<p>Title: Advanced Technology Development</p> <p>Description: Technology Maturation and risk reduction of Classified F-22 related development efforts</p> <p>FY 2011 Accomplishments:</p>		15.650	25.756	10.762

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>In FY 2011: Technology Maturation and risk reduction of Classified F-22 related development efforts. This effort includes studies and analyses of a variety of Special Projects for integration onto the F-22 and to perform proof of concept demonstration on select projects.</p> <p>FY 2012 Plans: In FY 2012: Technology Maturation and risk reduction of Classified F-22 related development efforts. Study and analysis of a variety of Special Projects for integration onto our platform continues. Perform proof of concept demonstration on select projects. Detailed integration efforts begin on successfully demonstrated projects.</p> <p>FY 2013 Plans: In FY 2013: Same as prior year.</p>				
<p>Title: Line In-The-Sky Auto Ground Collision Avoidance System (AGCAS)</p> <p>Description: (U) The LIS AGCAS will be designed and integrated on the F-22 to prevent the aircraft from unintentionally descending below ground level.</p> <p>FY 2011 Accomplishments: In FY 2011: No planned effort in FY 2011.</p> <p>FY 2012 Plans: FY 2012: Requirements development for AGCAS will be accomplished. In addition, design work will begin to develop design solutions for Block 20, 30, and 35.</p> <p>FY 2013 Plans: In FY 2013: Same as FY12</p>		-	2.890	9.800
<p>Title: Open System Architecture</p> <p>Description: Conduct studies and analysis to reduce the risk of integrating Open Architecture (OA) hardware and fusion architecture onboard the F-22. The goal of this effort is to ultimately reduce the F-22 costs and timeline (development, test, and fielding) with more cost-effective solutions. Impact if not funded: If not funded F-22 program will be delayed developing open architecture, resulting in higher modernization costs and increase time capability can be delivered to the war fighter.</p> <p>FY 2011 Accomplishments: In FY 2011: No planned activity in FY 2011</p> <p>FY 2012 Plans:</p>		-	10.000	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
In FY 2012: Study and analysis of the Open System Architecture integration onto F22.			
<i>FY 2013 Plans:</i> In FY 2013: No planned effort in FY13			
<i>Title:</i> Laboratory Obsolescence <i>Description:</i> Provides for identification and replacement of critical laboratory assets that have reached the end of their useful life and require replacement. Several components in the F-22 labs have exceeded their useful life, or have become so difficult to support that they require replacement. Currently identified items that require replacement include the: Stand-Alone Multi-Engine Real Time Simulator (SMRTS); Operational Flight Program (OFP) Build System; Raptor Integration Lab (RaIL) Communications, Navigation and Identification (CNI) Stimulator; Air Vehicle Systems (AVS) Prime Mission Equipment (PME); Integrated Vehicle System Controller (IVSC) Engineering Test Stand (ETS); Honeywell Environmental Control System (ECS) Lab; BAE Electronic Warfare (EW) Alpha Computers; RaIL Silicon Graphics, Inc. (SGI) Computer Replacement; IL FTE; Crash Survivable Memory Unit (CSMU) Specialized Test Equipment (STE). Replacement of these systems will be spread between FY12 and FY14 based upon criticality and availability for replacement (opportunity to replace without undue delay to the program), and available funding. The obsolescence priority list is maintained current based upon historic and current failure rates, lead-time to replace, position on F-22 program critical paths, and identification of new candidates. <i>FY 2011 Accomplishments:</i> In FY 2011: No planned activity in FY11. <i>FY 2012 Plans:</i> In FY 2012: Replace a subset of the equipment listed. Replace at least the four highest priority systems (currently SMRTS, OFP Build System, RaIL CNI, AVS PME). Actual priority may change prior to implementation. While every effort is made to identify those systems most at risk, new entries may enter at the top of the list due to numerous external factors. Increased level of activity in all above areas, compared to FY11, to support added FY12 development efforts. In addition, lab consolidation of the RAIL at Hill AFB will be accomplished. <i>FY 2013 Plans:</i> In FY 2013: No planned effort in FY13.	-	8.134	-
Accomplishments/Planned Programs Subtotals	493.506	571.320	371.667

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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D. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207138F*: <i>F-22A Squadrons, OPAF</i>	639.582	385.646	332.349	0.000	332.349	480.070	422.485	425.911	475.770	Continuing	Continuing
• PE 0207219F**: <i>Advanced Tactical Fighter, OPAF</i>	159.033	105.335	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0207138F, <i>F-22A Squadrons: Other Procurement, OPAF</i>	1.444	1.699	0.669	0.000	0.669	1.440	1.090	0.959	1.000	Continuing	Continuing
• PE 0207138F: <i>MILCON</i>	13.586	16.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0207445F: <i>Tactical Data Link, RDT&E</i>	23.438	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0207163F, <i>AMRAAM***: AIM-120D, RDT&E</i>	5.900	10.810	18.990	0.000	18.990	23.830	23.940	5.820	0.000	0.000	15.110

E. 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 to initiate requirements analysis, the design phase and the development, integration and verification phase of a specific incremental development effort.

F. 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force **DATE:** February 2012

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>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Support	SS/CPIF	Lockheed Martin:Fort Worth, TX	232.941	68.683	Dec 2011	59.843	Dec 2012	-		59.843	Continuing	Continuing	0.000
System Engineering / Program Management	SS/CPIF	Lockheed Martin:Fort Worth, TX	176.533	15.600	Dec 2011	14.500	Dec 2012	-		14.500	Continuing	Continuing	0.000
RAMMP	SS/CPFF	Lockheed Martin:Fort Worth, TX	110.071	14.000	Jan 2012	10.754	Jan 2013	-		10.754	Continuing	Continuing	0.000
Increment 3.1	SS/CPIF	Lockheed Martin:Fort Worth, TX	639.985	-		-		-		-	0.000	639.985	0.000
Increment 3.2A	SS/CPIF	Lockheed Martin:Fort Worth, TX	171.646	85.075	Dec 2011	80.360	Nov 2012	-		80.360	34.217	371.298	0.000
Increment 3.2B	SS/CPIF	Lockheed Martin:Fort Worth, TX	292.256	113.900	Dec 2011	-		-		-	0.000	406.156	0.000
VAX Migration	SS/CPIF	Lockheed Martin:Fort Worth, TX	144.368	28.000	Dec 2011	10.500	Dec 2012	-		10.500	29.623	212.491	0.000
F-22 Small Projects	SS/Various	Lockheed Martin:Fort Worth, TX	494.452	17.374	Dec 2011	8.925	Oct 2012	-		8.925	Continuing	Continuing	0.000
Crypto-Modernization	SS/CPIF	Lockheed Martin:Fort Worth, TX	3.355	0.813	Dec 2011	15.905	Nov 2012	-		15.905	30.532	50.605	0.000
Advanced Technology Development	Various	Various:Various,	18.950	25.756	Jan 2012	10.762	Sep 2013	-		10.762	Continuing	Continuing	0.000
Auto Ground Collision Avoidance System (AGCAS)	SS/CPIF	Lockheed Martin:Fort Worth, TX	-	2.890	Sep 2012	9.800	Oct 2012	-		9.800	5.240	17.930	0.000
Open System Architecture	SS/CPIF	Lockheed Martin:Fort Worth, TX	-	10.000	Dec 2011	-	Dec 2012	-		-	Continuing	Continuing	0.000
Subtotal			2,284.557	382.091		221.349		-		221.349			0.000

Remarks
FY13-17 Increment 3.2B costs and estimated contract award dates are summarized in separate documentation PE/BPAC 0605213F/654785. All increment 3.2B efforts and funding prior to FY13 continues to be shown in PE/BPAC 0207138F/674785.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force **DATE:** February 2012

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>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Combined Test Force	Various	Various:Various,	615.513	80.000	Dec 2011	65.729	Nov 2012	-		65.729	Continuing	Continuing	0.000
Laboratory Test & Operations (LTO)	SS/Various	Lockheed Martin:Ft Worth, TX	466.612	79.300	Dec 2011	73.802	Nov 2012	-		73.802	Continuing	Continuing	0.000
Laboratory Obsolescence	SS/Various	Lockheed Martin:Ft Worth, TX	-	8.134	Jan 2012	-		-		-	Continuing	Continuing	0.000
Subtotal			1,082.125	167.434		139.531		-		139.531			0.000

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Support	C/Various	Various:Various,	111.693	21.795	Oct 2011	10.787	Oct 2012	-		10.787	Continuing	Continuing	0.000
Subtotal			111.693	21.795		10.787		-		10.787			0.000

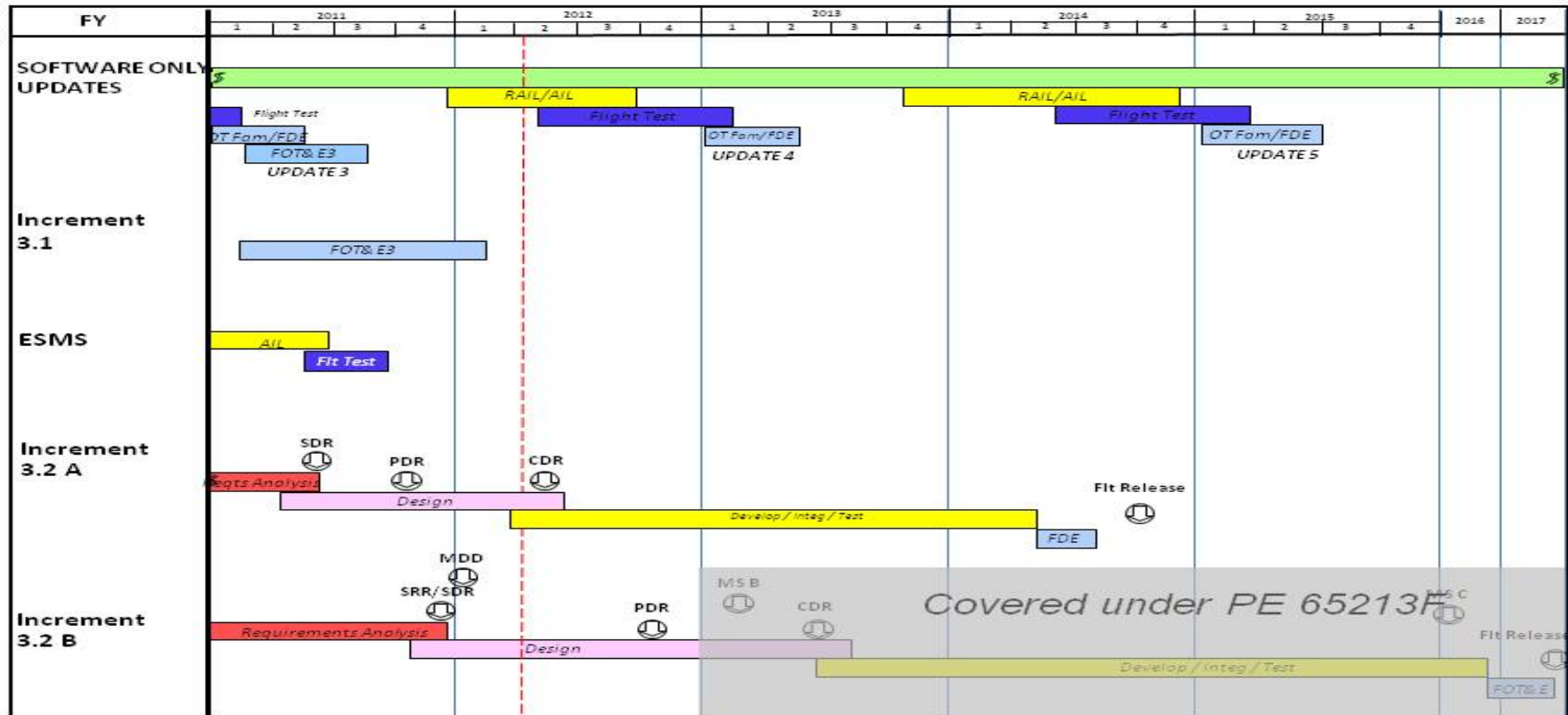
			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			3,478.375	571.320		371.667		-		371.667			0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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

Baseline F-22 Program Schedule Summary



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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

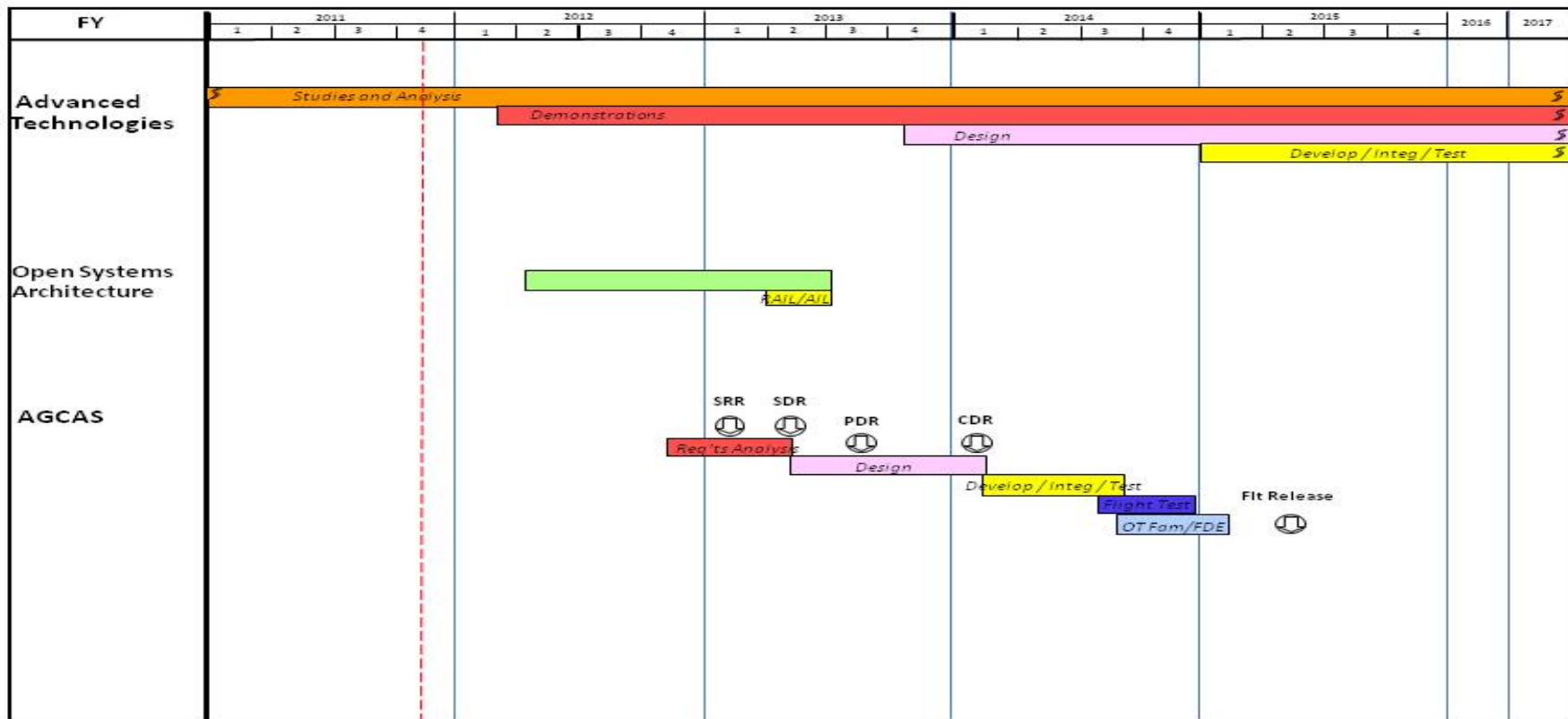
DATE: February 2012

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*

Baseline F-22 Program Schedule Summary Cont.



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Increment 3.1 Development, Integration, & Test - Actual Start: 4Q 2007	1	2011	1	2012
ESMS Development, Integration, & Test – Actual Start: 4Q 2008	1	2011	3	2011
Increment 3.2B Material Development Decision (MDD)	1	2012	1	2012
Increment 3.2A System Design Review (SDR)	2	2011	2	2011
Increment 3.2B System Requirements Review (SRR)	4	2011	4	2011
Increment 3.2B System Design Review (SDR)	4	2011	4	2011
Increment 3.2A Preliminary Design Review (PDR)	4	2011	4	2011
Increment 3.2B Preliminary Design Review (PDR)	4	2012	4	2012
Increment 3.2A Critical Design Review (CDR)	2	2012	2	2012
Initiate 3.2A Development, Integration, & Test	1	2012	1	2012
Advanced Technology Development Studies & Analysis	1	2011	4	2017
Advanced Technology Development Demonstrations	1	2011	4	2017
Advanced Technology Development Design	4	2012	4	2017
Open Systems Architecture	2	2012	3	2013
AGCAS Requirements Analysis	4	2012	2	2013
AGCAS System Requirements Review (SRR)	1	2013	1	2013
AGCAS System Design Review (SDR)	2	2013	2	2013
Initiate AGCAS Design	2	2013	2	2013
AGCAS Preliminary Design Review (PDR)	3	2013	3	2013
AGCAS Critical Design Review (CDR)	1	2014	1	2014
AGCAS Development, Integration, & Test	1	2014	2	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	9.967	8.117	-	8.117	50.084	104.866	132.174	229.912	Continuing	Continuing
675346: <i>F-35</i>	-	-	8.117	-	8.117	50.084	104.866	132.174	229.912	Continuing	Continuing
676011: <i>JSF DUAL CAPABLE AIRCRAFT</i>	-	9.967	-	-	-	-	-	-	-	Continuing	Continuing

Note

This funding is included in funding for PRCP Program Number, 198, 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, other International Partner nations, and Foreign Military Sales customers are also participants in the JSF program. Follow-on Development will continue the evolutionary approach of System Development and Demonstration (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) will provide the framework and basis for defining, managing and acquiring the envisioned F-35 enhancements.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	217.561	47.841	62.583	-	62.583
Current President's Budget	-	9.967	8.117	-	8.117
Total Adjustments	-217.561	-37.874	-54.466	-	-54.466
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-37.874			
• Congressional Rescissions	-57.724	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-159.837	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-54.466	-	-54.466

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	PE 0207142F: <i>Joint Strike Fighter Squadrons</i>

Change Summary Explanation

FY2011 adjustments: Of the -\$217.561M (\$159.837M was realigned to 0604800F; \$57.724M Congressional mark for Block 4 development)

FY2012 adjustments: Congressional reductions of -\$37.874M due to Block 4 development ahead of need.

FY2013 adjustments: Transfer of 17.800M to PE 0604800F BPAC 653832 "JSF Deployability and Suitability Enhancement". \$36.666M was early to need and removed.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675346: <i>F-35</i>	-	-	8.117	-	8.117	50.084	104.866	132.174	229.912	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 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 partner countries are participants in the JSF Follow-on Development program. Follow-on Development will continue the evolutionary approach of System Development and Demonstration (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.

BA7- This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Air Vehicle Follow-on Development	-	-	8.117	-	8.117
Description: Includes disciplined systems engineering, requirements decomposition, and life cycle cost estimation of high priority, gap-driven Block 4 candidates to inform investment optimization decisions; technical development activities on suitability candidates that address system limitations identified during Operational Assessments of F-35; maturing validated Block 4 Follow on Development (FoD) capabilities to the appropriate Technical Readiness Levels (TRL) to reduce integration risk for inclusion into the EMD program planned to begin in FY15.					
FY 2013 Base Plans: Initiate disciplined systems engineering, requirements decomposition, and life cycle cost estimation of high priority, gap-driven Block 4 candidates to inform investment optimization decisions. Begin technical development activities on suitability candidates that address system limitations identified during Operational Assessments of F-35. Mature validated Block 4 FoD capabilities to the appropriate Technical Readiness Levels					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
(TRL) to reduce integration risk for inclusion into the Engineering & Manufacturing Development (EMD) program planned to begin in FY15.					
Accomplishments/Planned Programs Subtotals	-	-	8.117	-	8.117

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• RDT&E; PE 0604800F: <i>Joint Strike Fighter EMD</i>	931.599	1,387.926	1,210.306	0.000	1,210.306	1,019.035	635.732	387.694	155.591	0.000	2,974.060
• RDT&E; PE 0604800N: <i>Joint Strike Fighter EMD</i>	615.706	631.836	724.392	0.000	724.392	702.100	584.341	458.302	349.869	0.000	2,360.449
• RDT&E; PE 0604800M: <i>Joint Strike Fighter EMD</i>	602.142	651.786	737.149	0.000	737.149	693.484	574.746	448.498	340.123	0.000	2,318.870
• RDT&E; PE 0604800N/3194: <i>Joint Strike Fighter EMD</i>	38.492	26.713	19.534	0.000	19.534	0.000	0.000	0.000	0.000	0.000	38.492
• International R&D: <i>Int'l Partner (SDD/FOD)</i>	200.912	152.438	144.173	0.000	144.173	2.811	0.000	0.000	0.000	0.000	203.723
• APAF; PE 0207142F: <i>Joint Strike Fighter - CTOL</i>	4,297.566	3,518.592	3,417.702	0.000	3,417.702	3,357.676	4,547.095	6,026.187	5,949.391	175,271.376	18,228.524
• APN; PE 0204146N: <i>Joint Strike Fighter - CV</i>	1,852.890	1,557.162	1,072.812	0.000	1,072.812	1,273.910	1,432.190	1,724.077	2,429.677	33,679.470	6,283.067
• APN; PE 0204146M: <i>Joint Strike Fighter - STOVL</i>	838.204	1,259.162	1,510.936	0.000	1,510.936	1,521.174	1,562.016	1,953.170	2,576.560	35,163.740	5,514.564
• International Procurement: <i>JSF International Procurement</i>	726.936	1,223.348	3,054.443	0.000	3,054.443	5,362.214	7,449.007	8,361.881	8,094.783	0.000	21,900.038
• OPN/4265: <i>JSF Other Procurement</i>	5.381	5.665	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	21.489
• OPN/ 4267: <i>JSF Logistics Information System (ALIS)</i>	0.000	0.000	3.826	0.000	3.826	4.869	5.592	5.647	5.744	0.000	16.108
• APAF; PE 0207142F/Initial Spares: <i>Joint Strike Fighter Spares</i>	261.924	149.556	181.833	0.000	181.833	197.737	265.692	274.415	264.251	8,438.247	999.768

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force										DATE: February 2012	
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)

Line Item	FY 2011	FY 2012	FY 2013	FY 2013	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Cost To	
			Base	OCO	Total					Complete	Total Cost
• APN; PE 0204146N/Initial Spares: <i>Joint Strike Fighter Spares</i>	73.923	29.902	41.466	0.000	41.466	114.749	116.392	106.869	144.044	2,708.330	411.933
• APN; PE 0204146M/Initial Spares: <i>Joint Strike Fighter Spares</i>	147.539	23.430	99.006	0.000	99.006	97.805	107.292	186.345	175.615	2,961.390	538.981
• MILCON; PE 0207142F: <i>JSF Military Construction</i>	121.292	24.250	13.530	0.000	13.530	72.000	69.050	65.000	66.170	0.000	327.342
• MILCON; PE 0212576N: <i>JSF Military Construction</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• APAF; PE 0207142F/ Modifications: <i>JSF Modifications</i>	4.610	0.000	147.995	0.000	147.995	157.777	245.462	223.683	252.141	1,027.058	631.532
• OPAF; PE 0207142F: <i>Joint Strike Fighter</i>	0.000	0.000	0.600	0.000	0.600	2.200	2.943	2.471	2.345	0.000	7.614

D. Acquisition Strategy

Follow-on Development (FoD) 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) will provide the framework and basis for defining, managing, and acquiring the envisioned F-35 enhancements, such as Dual Capable Aircraft (DCA). The plan for each follow-on increment will include all development, integration, and verification testing of those capabilities. Additionally, the non-recurring efforts for cut-in of retrofit and production and sustainment will be included. Retrofit decisions will be based on an analysis of the benefit versus the cost of upgrading the existing F-35 fleet to a common configuration. Retrofit execution will be in accordance with stakeholders' direction.

This follow-on development effort will be procured via a cost type contract. It is anticipated that fee provisions will be used to target and motivate contractor performance. Similar to SDD, BOAs and ID/IQ contracts may be used for trade studies, analyses, and planning 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

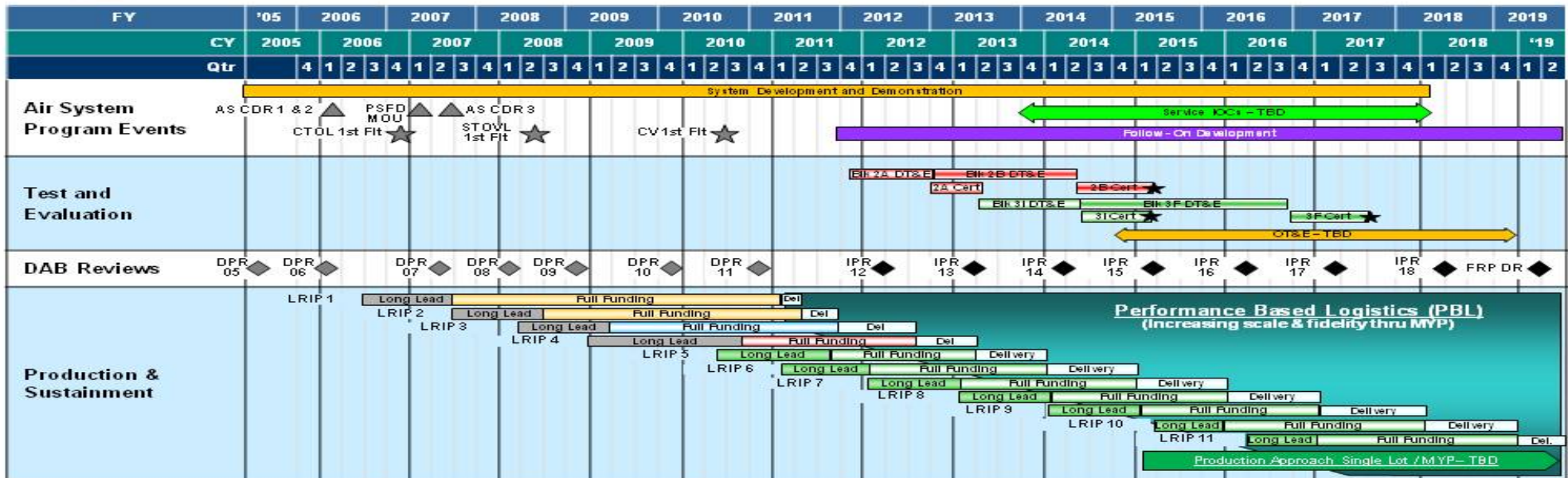
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0207142F: Joint Strike Fighter Squadrons

PROJECT
 675346: F-35



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Interim Program Review (IPR) FY12	2	2012	2	2012
Follow-On Development Contract Award	2	2012	2	2012
Follow-On Development	2	2012	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force								DATE: February 2012			
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 676011: <i>JSF DUAL CAPABLE AIRCRAFT</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
676011: <i>JSF DUAL CAPABLE AIRCRAFT</i>	-	9.967	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Project 676011 funding removed in FY13 and out pending determination of reprogramming requirements for follow-on development and weapons.

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. The Joint Contract Specification requirements call for the F-35A (CTOL) Variant Air Vehicle to have the capabilities and provisions for Dual Capable Aircraft (DCA) operations. DCA refers to the capability to carry and deliver conventional or non-conventional weapons. DCA operation is internal carriage of two B-61s. In accordance with the Operational Requirements Document, DCA will be integrated in the first post-SDD block upgrade in time to meet Joint Strategic Capabilities Plan force structure requirements.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: DCA	-	9.967	-	-	-
Description: This effort provides for the assessment of Dual Capable Aircraft (DCA) weapon integration impacts on the Joint Strike Fighter (JSF) aircraft, early in the weapon design phase. It identifies and avoids potential technical and cost risks, as well as defining the integration and certification trade-space to field the DCA capability with the B61 weapon. This effort also includes required JSF Follow-on Development planning to ensure incorporation in the first post-System Development and Demonstration(SDD) F-35 Conventional Takeoff and Landing (CTOL) block upgrade.					
FY 2011 Accomplishments: Not Applicable					
FY 2012 Plans: Initiate efforts to incorporate dual-capability in to the first post SDD block upgrade.					
FY 2013 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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 676011: <i>JSF DUAL CAPABLE AIRCRAFT</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
N/A					
FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	-	9.967	-	-	-

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• RDT&E; PE 0604800F: <i>Joint Strike Fighter EMD</i>	931.599	1,387.926	1,210.306	0.000	1,210.306	1,019.035	635.732	387.694	155.591	0.000	2,974.060
• RDT&E; PE 0604800N: <i>Joint Strike Fighter EMD</i>	615.706	631.836	724.755	0.000	724.755	702.644	585.407	459.511	350.852	0.000	2,363.268
• RDT&E; PE 0604800M: <i>Joint Strike Fighter EMD</i>	602.142	651.786	737.399	0.000	737.399	693.861	575.495	449.346	340.813	0.000	2,320.844
• RDT&E; PE 0604800N/3194: <i>Joint Strike Fighter EMD</i>	38.492	26.713	19.544	0.000	19.544	0.000	0.000	0.000	0.000	0.000	38.492
• International R&D: <i>Int'l Partner (SDD/FOD)</i>	200.912	152.438	144.173	0.000	144.173	2.811	0.000	0.000	0.000	0.000	203.723
• APAF; PE 0207142F: <i>Joint Strike Fighter - CTOL</i>	4,297.566	3,518.592	3,417.702	0.000	3,417.702	3,357.676	4,547.095	6,026.187	5,949.391	175,271.376	18,228.524
• APN; PE 0204146N: <i>Joint Strike Fighter - CV</i>	1,852.890	1,557.162	1,072.812	0.000	1,072.812	1,273.910	1,432.190	1,724.077	2,429.677	33,679.470	6,283.067
• APN; PE 0204146M: <i>Joint Strike Fighter - STOVL</i>	838.204	1,259.162	1,510.936	0.000	1,510.936	1,521.174	1,562.016	1,953.170	2,576.560	35,163.740	5,874.564
• International Procurement: <i>JSF International Procurement</i>	726.936	1,223.348	3,054.443	0.000	3,054.443	5,362.214	7,449.007	8,361.881	8,094.783	0.000	21,900.038
• OPAF; PE 0207142F: <i>Joint Strike Fighter</i>	0.000	0.000	0.600	0.000	0.600	2.200	2.943	2.471	2.345	0.000	7.614
• OPN/4265: <i>JSF Other Procurement</i>	5.381	5.665	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.046
• OPN/4267: <i>JSF Logistics Information System (ALIS)</i>	0.000	0.000	3.826	0.000	3.826	4.869	5.592	5.647	5.744	43.524	16.108

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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 676011: <i>JSF DUAL CAPABLE AIRCRAFT</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF; PE 0207142F/Initial Spares: <i>Joint Strike Fighter Spares</i>	261.924	149.556	181.833	0.000	181.833	197.737	265.692	274.415	264.251	8,438.247	999.768
• APN; PE 0204146N/Initial Spares: <i>Joint Strike Fighter Spares</i>	73.923	29.902	41.466	0.000	41.466	114.749	116.392	106.869	144.044	2,708.330	411.933
• APN; PE 0204146M/Initial Spares: <i>Joint Strike Fighter Spares</i>	147.539	23.430	99.006	0.000	99.006	97.805	107.292	186.345	175.615	2,961.390	538.981
• Milcon; PE 0207142F: <i>JSF Military Construction</i>	121.292	24.250	13.530	0.000	13.530	72.000	69.050	65.000	66.170	0.000	505.673
• APAF; PE 0207142F/ Modifications: <i>JSF Modifications</i>	4.610	0.000	147.995	0.000	147.995	157.777	245.462	223.683	252.141	0.000	631.532

D. Acquisition Strategy

Follow-on Development (FoD) 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) will provide the framework and basis for defining, managing, and acquiring the envisioned F-35 enhancements, such as Dual Capable Aircraft (DCA). The plan for each follow-on increment will include all development, integration, and verification testing of those capabilities. Additionally, the non-recurring efforts for cut-in of retrofit and production and sustainment will be included. Retrofit decisions will be based on an analysis of the benefit versus the cost of upgrading the existing F-35 fleet to a common configuration. Retrofit execution will be in accordance with stakeholders' direction.

This follow-on development effort will be procured via a cost type contract. It is anticipated that fee provisions will be used to target and motivate the contractor performance. Similar to SDD, BOAs and ID/IQ contracts may be used for trade studies, analyses, and planning 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

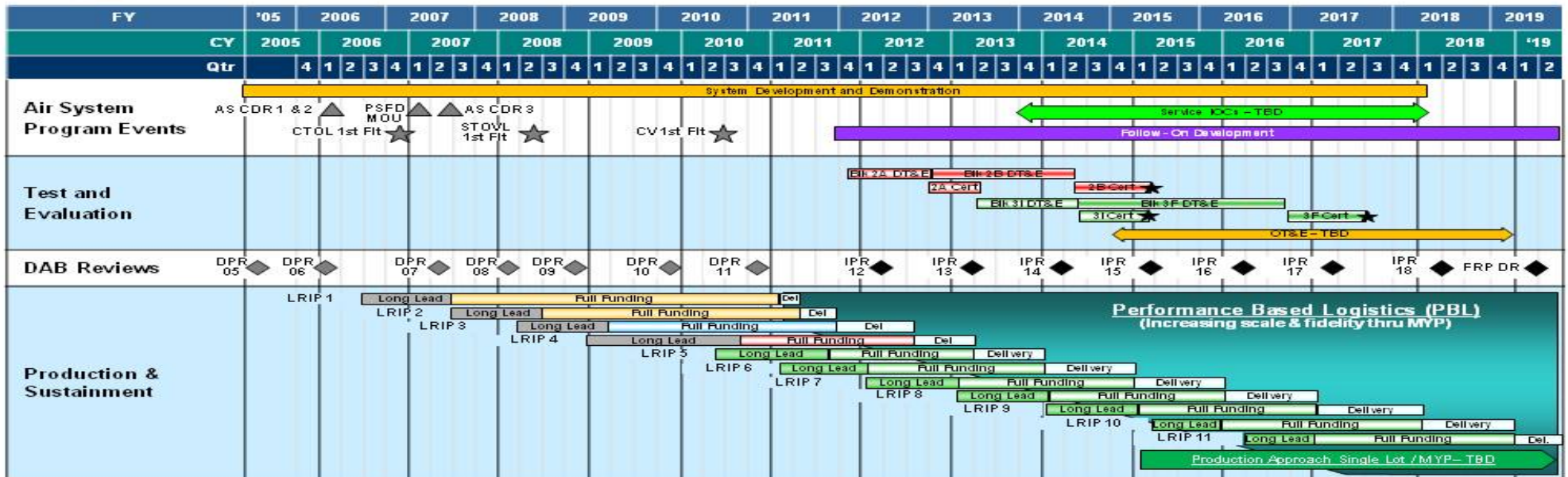
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0207142F: Joint Strike Fighter Squadrons

PROJECT
 676011: JSF DUAL CAPABLE AIRCRAFT



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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 676011: <i>JSF DUAL CAPABLE AIRCRAFT</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
DCA Contract award	2	2012	2	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	5.834	8.023	8.234	-	8.234	9.675	10.775	12.971	13.143	Continuing	Continuing
674132: <i>AIM-9 Product Improvement</i>	5.834	8.023	8.234	-	8.234	9.675	10.775	12.971	13.143	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.

This budget line item will fund the development, test and integration of software updates to the missile, insensitive munitions improvements and aircraft platform integration, to ensure these capabilities perform in accordance with established requirements.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	6.040	8.023	8.219	-	8.219
Current President's Budget	5.834	8.023	8.234	-	8.234
Total Adjustments	-0.206	-	0.015	-	0.015
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.175	-			
• Other Adjustments	-0.031	-	0.015	-	0.015

Change Summary Explanation

FY2011 adjustments are Congressional General Reductions of -\$0.031

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
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<p>Title: Product Development</p> <p>Description: Continuation of Primary Hardware Development/Pre-Planned Product Improvement efforts for the AIM-9X fuze. Includes Systems Engineering/Program management, as well as support required to ensure AIM-9X missile integration with threshold US Navy aircraft platforms. 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.</p>	3.247	4.490	6.200	-	6.200
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FY 2011 Accomplishments:
Continued refinement of v9.3 Software Algorithm and Code Development in support of the AIM-9X missile testing and integration effort with threshold aircraft platforms.

FY 2012 Plans:
Continued refinement of v9.3 Software Algorithm and Code Development in support of the AIM-9X missile testing and integration effort with threshold aircraft platforms, as well as study insensitive munitions alternatives and risk reduction methods.

FY 2013 Base Plans:
Finalization of v9.3 Software Algorithm and Code Development in support of the AIM-9X missile testing and integration effort with threshold aircraft platforms. Begin Software Algorithm and Code Development on the next version of missile software, as well as continue study on insensitive munitions alternatives and risk reduction methods. Continued support of Operational Test anomaly resolution.

FY 2013 OCO Plans:
N/A

<p>Title: Test and Evaluation</p> <p>Description: Test & Evaluation and associated Governmental/contractor support required to ensure the AIM-9X missile integration with threshold aircraft platforms.</p> <p>FY 2011 Accomplishments: Completed Operational Testing of missile software rehosting into the Pre-Planned Product Improvements that resolved obsolescence associated with the Computer Processor Unit on the Captive Air Training Missile. In support of MS-C, the program successfully completed an Operational Assessment of the performance</p>	2.587	3.533	2.034	-	2.034
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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
requirements defined in the Capability Production Document. Program is executing Developmental Test and Integration. FY 2012 Plans: Complete final phase of Operational Testing of missile software rehosting into new AIM-9X components. Complete Integrated (Development and Operational) Testing and begin Operational Testing of the follow on missile software (v9.3) for the AIM-9X missile integration. Begin Developmental Testing of next version of missile software. FY 2013 Base Plans: Complete Operational Testing of the follow on missile software (v9.3) for the AIM-9X missile integration. Continue Developmental Testing and begin Integrated (Development and Operational) Testing of next version of missile software. FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	5.834	8.023	8.234	-	8.234

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• PE 0207161F, Tactical AIM Missil...: <i>Missile Mods, USAF</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0207161F, Tactical AIM Mi (1)...: <i>Sidewinder (AIM-9X)</i>	64.166	88.769	88.020	0.000	88.020	82.729	131.786	85.401	86.706	1,887.298	3,003.001
• PE 0207161F, Tactical AIM Mi (2)...: <i>Replen Spares, USAF</i>	3.492	7.866	8.854	0.000	8.854	10.728	10.881	11.267	11.440	156.200	220.223
• PE 0207161F, Tactical AIM Mi (3)...: <i>Initial Spares, USAF</i>	1.402	1.659	1.651	0.000	1.651	1.650	1.743	1.803	1.831	94.949	106.688
• PE 0207161N, Tactical AIM Missil...: <i>Tactical AIM Missile, USN</i>	0.906	8.765	21.107	0.000	21.107	29.441	58.084	61.986	58.040	11.239	603.033
• PE 0207162N, Sidewinder, WPN: <i>Sidewinder, USN</i>	52.016	42.198	80.226	0.000	80.226	88.262	88.350	89.524	96.088	1,331.573	2,241.508

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force DATE: February 2012

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>
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E. Acquisition Strategy

The LRIP, Lot 4, Firm-Fixed-Price (FFP) contract was awarded in April 2004. Assistant Secretary of the Navy for (Research Development & Acquisitions) approved the Full-Rate Production (FRP) decision in May 2004. FRP 1, Lot 5 contract was awarded November 2004. FRP 2, Lot 6 through FRP 3 Lot 7 contracts were awarded November 2006. Rewards or penalties are provided depending on Raytheon Missile Systems performance relative to the Procurement Price Commitment Curve (PPCC) for Lot's 5 through 7 (FY2005 - FY2007). FRP 4 Lot 8 (FY2008) contract was re-negotiated outside of the PPCC, and was awarded in January 2008. The FRP 5 Lot 9 (FY2009) contract was awarded in June 2009, and incorporated the new electronics unit into the CATM resolving critical obsolescence issues, as well as, a low quantity of test articles to prove out the capability and producibility of the AIM-9X missile. The FRP 6 Lot 10 (FY2010) contract was awarded in June 2010 to procure Block I AUR missiles as well as additional tactical test articles.

Block II: Milestone C decision for Low Rate Initial Production (LRIP) was held on 24 June 2011, and the program entered into LRIP contracts for Block II in FY2011 and FY2012. The program will enter the final LRIP in FY2013, followed by Block II FRP in FY2014 and beyond.

F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force **DATE:** February 2012

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>
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Tactical AIM Missiles Block I & II	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestone - Block II			MS-C ▲																									
Systems Development Primary Hardware Development																												
T&E Milestones - Block II																												
Development Test			DT-B1																									
Operational Test			CATM OT-IIIIC ▼																									
			IT-B1																									
Production Milestones - Block II																												
Contract Awards				LRIP 1 ■	LRIP 2 ■						LRIP 3 ■				FRP 1 ■													
Production Deliveries																												
			Lot 9 Qty 157																									
					Lot 10 Qty 65																							
								LRIP 1 Qty 178																				
												LRIP 2 Qty 125																
															LRIP 3 Qty 164													
																		FRP 1 Qty 150										
																					FRP 2 Qty 248							
																												FRP 3 Qty 153

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Acquisition Milestone - Block II: Milestone C	3	2011	3	2011
T&E Milestones: Block II Development Test: v9.2 Operational Test CATM (OT-IIIIC)	1	2011	1	2011
T&E Milestones: Block II Development Test: v9.3 Development Test (DT-B1)	1	2011	2	2012
T&E Milestones: Block II Development Test: v9.3 Integrated Development/Operational Test (IT-B1)	1	2011	2	2012
T&E Milestones: Block II Development Test: v9.3 Operational Test (OT-C1)	3	2012	3	2013
T&E Milestones: Block II Development Test: v9.x Development Test (DT-D1)	3	2012	1	2015
T&E Milestones: Block II Development Test: v9.x Integrated Development/Operational Test (IT-D1)	4	2013	2	2016
Production: Block II Contract Award: Low Rate Initial Production (LRIP 1)	4	2011	4	2011
Production: Block II Contract Award: LRIP 2	1	2012	1	2012
Production: Block II Contract Award: LRIP 3	2	2013	2	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	60.834	77.830	87.041	-	87.041	88.849	80.901	41.251	35.888	Continuing	Continuing
673777: <i>AMRAAM</i>	60.834	77.830	87.041	-	87.041	88.849	80.901	41.251	35.888	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The Cost to Complete and Total Cost for MDAP projects in this program element are documented in the R3. The Cost to Complete and Total Cost on the R2 are entered as "Continuing" and not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding.

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 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 current and projected threats, incorporates high payoff technology development, performs risk reduction activities and investigates new variants and/or alternate missions which may use AMRAAM attributes. The AIM-120D (Phase 4) delivers improved performance via Global Positioning System (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 2009. In FY2010, a period of combined Developmental Test (DT)/Operational Test (OT) was initiated to ensure overall aircraft and missile weapons system maturity prior to the start of dedicated OT. Dedicated OT will start in FY2012. The program includes integration of the missile onto the F/A-18E/F, F-15C/D/E, F-16, F-22A, and F-18 C/D. To keep the existing inventory as effective as possible, the Air Force and Navy also develop, test, and field 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 because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	62.922	77.830	95.078	-	95.078
Current President's Budget	60.834	77.830	87.041	-	87.041
Total Adjustments	-2.088	-	-8.037	-	-8.037
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.767	-			
• Other Adjustments	-0.321	-	-8.037	-	-8.037

Change Summary Explanation

FY2011 adjustments Cong General Reductions -\$0.321 and SBIR -\$1.767

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: System Improvement Program (SIP)/Software Upgrade Program (SWUP)/Electronic Protection (EP)	34.100	46.357	52.926	-	52.926
Description: Provide software upgrades/system improvement/electronic protection (SWUP/SIP/EP)					
FY 2011 Accomplishments:					
1. AIM-120C SWUP- Effort continued work towards maturing the second Candidate Development Set to Preliminary Design Review (PDR) level of design maturity including alternative guidance algorithm (AGA). Selected mature candidates will be developed under alternate efforts.					
2. EP-Continued EP implementation phase for AIM-120C missiles. Specific tasks included the completion of the software design, completion of the Critical Design Review (CDR) and continued developmental hardware in the loop (HWIL) testing and captive flight testing, and continued Concept Refinement/Risk Reduction (CR/RR) activities further developing EP techniques for future upgrades.					
3. AIM-120D SIP – Continued candidate evaluation and selection and preliminary design activities, including lab and/or captive flight tests to provide data necessary to evaluate performance and feasibility of potential upgrades. Completed CR/RR prototyping and evaluation of selected hardware candidates. Conducted final down-select review including the warfighter and operational testers to define candidates that will be carried forward for future SIP implementation. Continued study of efficient/effective integration of other system					

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)

improvements, parts obsolescence issues, and cost reduction initiatives. Began resolution of AIM-120D issues identified during DT.

FY 2012 Plans:

1. AIM-120C SWUP-Effort will include completion of Set 2 Candidates to a PDR maturity level. Candidates will provide fidelity improvements to C-7 tactical software and simulation model upgrades to enhance the fidelity of missile performance predictions. New target models will also be developed under this effort. Preliminary designs for AGA candidate will be completed in FY12.
2. EP-Complete software development captive flight testing and Formal Qualification Testing (FQT) for both C3-C6 and C7 configurations. Release software for the live fire test program. Continue preparation activities for future EP upgrades, conduct PDR, and begin implementation effort to address advanced threats in AIM-120C7 missiles. In addition, start China Lake HWIL and Missile Room 3 upgrades to support the EP program.
3. AIM-120D SIP-Continue candidate evaluation and preliminary design activities, including lab and/or captive flight tests to provide data necessary to evaluate performance and feasibility of potential upgrades. Complete resolution of AIM-120D issues identified during DT and deliver AIM-120D software to OT. Award contract to implement the SIP 1 increment, conduct PDR and CDR. Software Trouble Reports (STRs)/Deficiency Reports (DRs) from OT and the field will be incorporated where possible in the software developed under this contract. Continue study of efficient/effective integration of other system improvements, parts obsolescence issues, and cost reduction initiatives.

FY 2013 Base Plans:

1. AIM-120C SWUP-Effort will include maturing new target models and simulation candidates.
2. EPIP – Complete live fire developmental test program for both C3-C6 and C7 configurations and release software for dedicated operational testing. Hold CDR for EPIP Advanced software tape 1 and continue implementation effort to address advanced threats in AIM-120C7 missiles. Complete China Lake HWIL upgrades.
3. AIM-120D SIP-Continue candidate evaluation and selection and preliminary design activities, including lab and/or captive flight tests to provide data necessary to evaluate performance and feasibility of potential upgrades. Deliver SIP 1 increment software to OT. Continue the implementation phase for the SIP 1 increment and begin the implementation phase of SIP 2 increment. Planned tasks include captive flight test missions, completion of software design, and completion of SIP 2 increment PDR and CDR.

FY 2013 OCO Plans:

FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
N/A					
<p>Title: Test and Evaluation</p> <p>Description: Continue test and evaluation; Provide support to DT/OT.</p> <p>FY 2011 Accomplishments: Continued AIM-120D DT/OT testing. Continued infrastructure investments to support AIM-120D OT, SIP, SWUP and EP activities. Completed EP Basic software development captive flight test (FT) program.</p> <p>FY 2012 Plans: Start dedicated AIM-120D OT. Accomplish OT Readiness Review (OTRR) and certify the missile ready for dedicated OT. Start dedicated OT captive carry and free FT on F/A-18E/F and F-15C/D, and continue infrastructure investments to support AIM-120D OT, SIP, SWUP and EP activities. Begin EP Basic live fire FT program. This will consist of integrated DT/OT captive missions, pre-flight missions, and missile launches. Begin EP Advanced captive flight test program.</p> <p>FY 2013 Base Plans: Complete AIM-120D dedicated OT, to include captive carry and free FT. Field AIM-120D on F/A-18 E/F and F-15 C/D. Complete EP Basic integrated DT/OT live fire FT program. This will consist of both captive missions and missile launches. Begin EP Basic Dedicated OT FT program. This will consist of between two to four live fire launches and multiple captive missions based on flight test launch aircraft availability. Continue EP Advanced captive FT program.</p> <p>FY 2013 OCO Plans: N/A</p>	11.495	17.755	10.587	-	10.587
<p>Title: Aircraft Integration</p> <p>Description: Aircraft Integration - Integrate Phase 4 on multiple aircraft platforms.</p> <p>FY 2011 Accomplishments: Aircraft Integration - Continued integration of Phase 4 on multiple aircraft platforms.</p> <p>FY 2012 Plans: Aircraft Integration - Continuing integration of Phase 4 on multiple aircraft platforms.</p> <p>FY 2013 Base Plans:</p>	15.239	13.718	23.528	-	23.528

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Aircraft Integration - Continuing integration of Phase 4 on multiple aircraft platforms.					
FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	60.834	77.830	87.041	-	87.041

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0207163F, AMRAAM, MPAF, BP20: <i>MPAF, BP20</i>	346.430	202.176	229.637	0.000	229.637	340.015	356.796	381.742	380.686	2,800.498	12,404.980
• PE 0207163F, AMRAAM, MPAF, BP25: <i>MPAF, BP25, Replan Spares</i>	0.817	0.804	0.805	0.000	0.805	0.809	0.811	0.842	0.856	6.005	0.000
• PE 0207163F, AMRAAM, MPAF, BP26: <i>MPAF, BP26, Initial Spares</i>	0.071	0.082	0.082	0.000	0.082	0.084	0.085	0.087	0.089	0.667	71.447
• PE 0207163F, AMRAAM, MPAF, BP22: <i>MPAF, BP22, Modifications</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.704

E. Acquisition Strategy

The AIM-120D completed an FCA in September 2009. The program entered the DT/OT phase of flight test in 2010. Three successful DT/OT shots were conducted but several anomalies were discovered during this period. These anomalies were attributed to software maturity with the missile and aircraft integration. Several of the anomalies have been mitigated. Further improvements are being flight-tested in early FY2012. The program plans to enter dedicated OT in the third quarter of FY2012.

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. Integration activities are supported via a series of contractual efforts managed via the host platform programs. For AMRAAM upgrades, contracts were 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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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F. 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.

APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

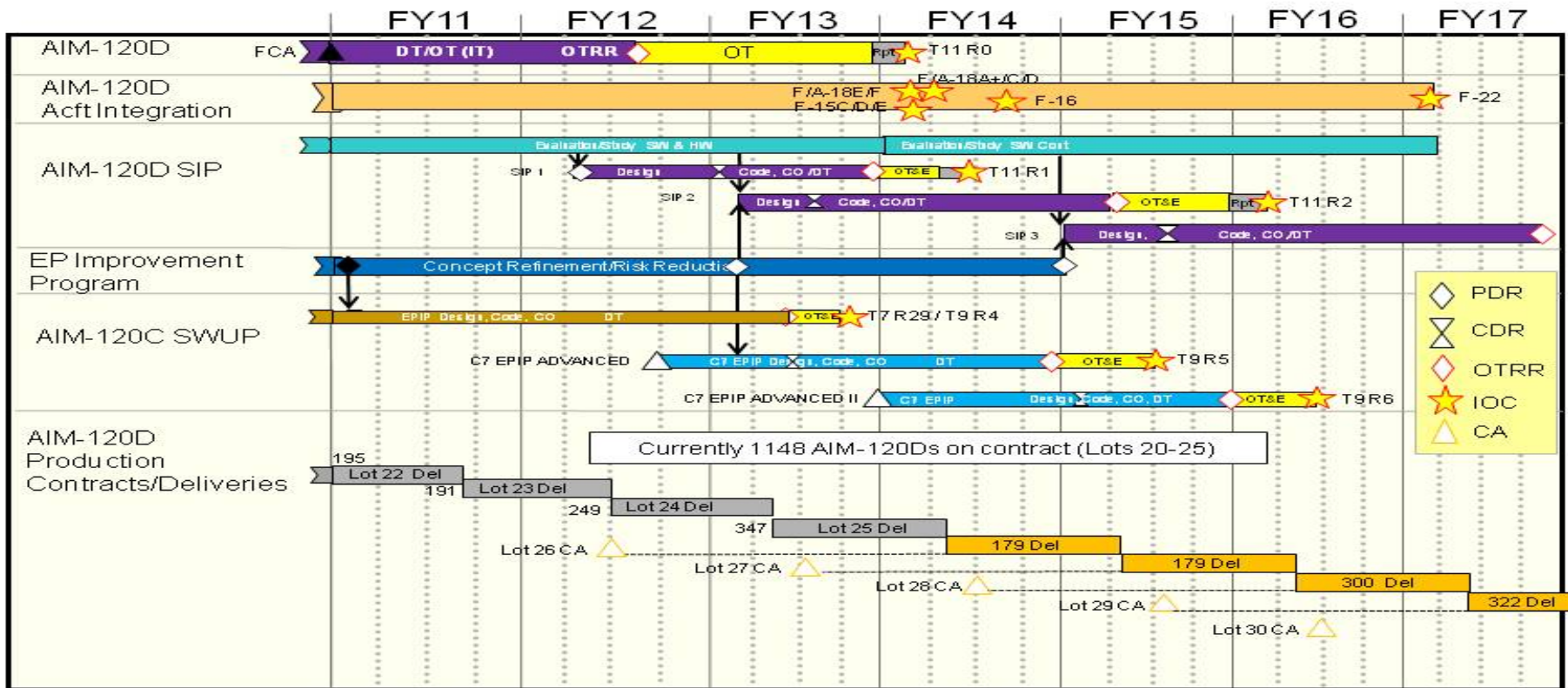
R-1 ITEM NOMENCLATURE
 PE 0207163F: Advanced Medium Range Air-to-Air Missile

PROJECT
 673777: AMRAAM



AMRAAM Program Schedule

As of: 14 Dec 2011



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
EPIP CDR	1	2011	1	2011
AIM-120D SIP Hardware CR/RR award	1	2011	1	2011
Lot 25 (FY11) contract award	4	2011	4	2011
AIM-120D OT	2	2012	4	2013
AIM-120D SIP Post-OT build contract award	2	2013	3	2014
AIM-120D SIP Post-OT build PDR	2	2013	2	2013
FCA for EPIP	2	2013	2	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	2.330	1.436	1.472	-	1.472	1.505	1.550	1.613	1.634	Continuing	Continuing
675226: <i>Joint Helmet Mounted Cueing System</i>	2.330	1.436	1.472	-	1.472	1.505	1.550	1.613	1.634	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 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 System (HOBS) weapons such as the AIM-9X.

JHMCS is a Post Milestone C, 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 depot activation.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	2.407	1.436	1.469	-	1.469
Current President's Budget	2.330	1.436	1.472	-	1.472
Total Adjustments	-0.077	-	0.003	-	0.003
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.065	-			
• Other Adjustments	-0.012	-	0.003	-	0.003

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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Change Summary Explanation

FY2011 Adjustments (Cong General Reductions -\$.012)

C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: Product Development</p> <p>Description: Continue Pre-Planned Product Improvement (P3I) efforts, software updates, Follow-On Test and Evaluation (FOT&E), and program management/support.</p> <p>FY 2011 Accomplishments: Continued deficiency resolution, reliability improvements, P3I activities, obsolescence upgrades, analysis/studies, alternate displays implementation, and software updates. Developed and qualified an improvement for the Lower Helmet Vehicle Interface (LHVI) to reduce connector pin damage, increased field availability, and reduced repair and spare costs. Continued incorporating night vision capabilities into JHMCS by testing and integrating the NVCD system. Continued mission support and program management to execute P3I and software development efforts.</p> <p>FY 2012 Plans: Continue deficiency resolution, reliability improvements, P3I activities, obsolescence upgrades, analysis/studies, some deficiency reporting, alternate displays implementation, and software updates. Continue incorporating night vision capabilities into JHMCS by testing and integrating the NVCD system. Continue to provide mission support and program management to execute studies, P3I, and software development efforts.</p> <p>FY 2013 Base Plans: Continue deficiency resolution, reliability improvements, P3I activities, obsolescence upgrades, analysis/studies, some deficiency reporting, alternate displays implementation, and software updates. Continue incorporating night vision capabilities into JHMCS by testing and integrating the NVCD system. Continue to provide mission support and program management to execute studies, P3I, and software development efforts.</p> <p>FY 2013 OCO Plans: N/A</p>	2.330	1.436	1.472	-	1.472
Accomplishments/Planned Programs Subtotals	2.330	1.436	1.472	-	1.472

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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D. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. 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 and F/A-18 aircraft. All other aircraft integration will be handled by the respective platform prime contractors. Follow-on contracts are Firm Fixed Price (FFP). Currently, a transition from Interim Contractor Support (ICS) to a WR-ALC Mission Support Division (MSD) funded support posture is still being worked. Transition plan signed but still requires final coordination from various organizations. Also, an organic depot is being developed.

F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>

Exh R-4, JHMCS Schedule

	FY11	FY12	FY13	FY14	FY15	FY16	FY17
<u>RDT&E</u>							
P3I		[Green bar spanning FY12 to FY17]					
R&M Upgrades	[Green bar spanning FY11]						
<p>JHMCS Schedule revised from earlier versions to only include RDT&E funded efforts. Previously listed Production and Sustainment efforts have been removed.</p>							

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
R&M Upgrades	1	2011	3	2011
P3I	2	2012	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	0.912	2.292	2.095	-	2.095	3.633	4.555	-	-	Continuing	Continuing
671325: <i>HH-60G</i>	0.912	-	-	-	-	-	-	-	-	Continuing	Continuing
676016: <i>Avionics Development and Integration</i>	-	2.292	2.095	-	2.095	3.633	4.555	-	-	Continuing	Continuing

Note

In FY12, funding for Project Number 676016, Avionics Development and Integration, was transferred from PE 0605229, Project Number 657001 in order to effectively execute this effort.

A. Mission Description and Budget Item Justification

The HH-60G currently supports the Air Force's core function of Personnel Recovery. The primary mission of the HH-60G is to conduct day / night / marginal weather Combat Search and Rescue (CSAR) in order to recover downed aircrew or other isolated personnel in hostile or permissive environments. Other mission areas include casualty evacuation (CASEVAC), medical evacuation (MEDEVAC), non-combatant evacuation operations, civil search and rescue, international aid, disaster humanitarian relief, and insertion/extraction of combat forces.

671325 - The Mode 5 modification program is an 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 is also updating its Global Positioning System.

676016 - The Air Force Rotary Wing Avionics Development and Integration effort will develop a fully integrated avionics upgrade that includes predictive terrain awareness. This program focuses on developing and integrating technologies that will increase the situational awareness of helicopter crews in a degraded visibility environment. This effort was initiated by the Defense Safety Oversight Council.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	0.944	2.292	2.091	-	2.091
Current President's Budget	0.912	2.292	2.095	-	2.095
Total Adjustments	-0.032	-	0.004	-	0.004
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.027	-			
• Other Adjustments	-0.005	-	0.004	-	0.004

Change Summary Explanation

FY11 Congressional General Reduction of 0.005M in Other Adjustment row.

FY13 slight funding increase to support program efforts.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
671325: <i>HH-60G</i>	0.912	-	-	-	-	-	-	-	-	Continuing	Continuing
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 program is an 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 (GPS) update. RDT&E funding will be used to design, integrate, and test a Mode 5/GPS capability.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Mode 5/GPS	0.912	-	-	-	-
Description: Develop, integrate, and test a Mode 5/GPS capability to meet up-to-date IFF requirements.					
FY 2011 Accomplishments: Develop, integrate, and test a Mode 5/GPS capability to meet up-to-date IFF requirements.					
FY 2012 Plans: N/A					
Accomplishments/Planned Programs Subtotals	0.912	-	-	-	-

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• PE 0207224F, Combat Rescue and R...: <i>Mode 5</i>	1.700	7.800	7.900	0.000	7.900	5.600	1.600	6.700	0.100	0.000	16.420

D. Acquisition Strategy

The RDT&E funding for this program will procure the NRE and Group A trial install kit. Options are included on the contract for the production kits. The Raytheon APX-119 IFF is being purchased through the DoD centralized catalog (iGATM), with funding documents being issued to Electronic Systems Center. The production installation will be in concert with current modifications as aircraft become available.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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>

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.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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 676016: <i>Avionics Development and Integration</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
676016: <i>Avionics Development and Integration</i>	-	2.292	2.095	-	2.095	3.633	4.555	-	-	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 Rotary Wing Avionics Development and Integration effort is a program to develop a fully integrated avionics upgrade that includes predictive terrain awareness. This program focuses on developing and integrating technologies that will increase the situational awareness of helicopter crews in a degraded visibility environment. This effort was initiated by the Defense Safety Oversight Council.

Funding for this effort was transferred in FY12 from PE 0605229, Project Number 657001 in order to effectively execute this effort for currently fielded HH-60G helicopters.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Avionics Development and Integration	-	2.292	2.095	-	2.095
Description: This program focuses on developing and integrating technologies that will increase the situational awareness of helicopter crews in a degraded visibility environment.					
FY 2011 Accomplishments: N/A					
FY 2012 Plans: Provide hot bench testing for initial integration efforts, engineering support, and program management.					
FY 2013 Base Plans: Provides integration contracting support, program management, engineering, simulation, software support, and initial flight test.					
FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	-	2.292	2.095	-	2.095

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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 676016: <i>Avionics Development and Integration</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDT&E, PE 0605229 Project 65...: <i>Avionics Development and Integration</i>	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

The Air Force is in the process of integrating the Three Dimensional Landing Zone (3D-LZ) technology into an air worthy payload. This payload will be integrated with existing forward looking infrared turrets to minimize additional equipment and weight on the aircraft. Once the payload is tested, the Air Force will finalize its strategy for fleet implementation.

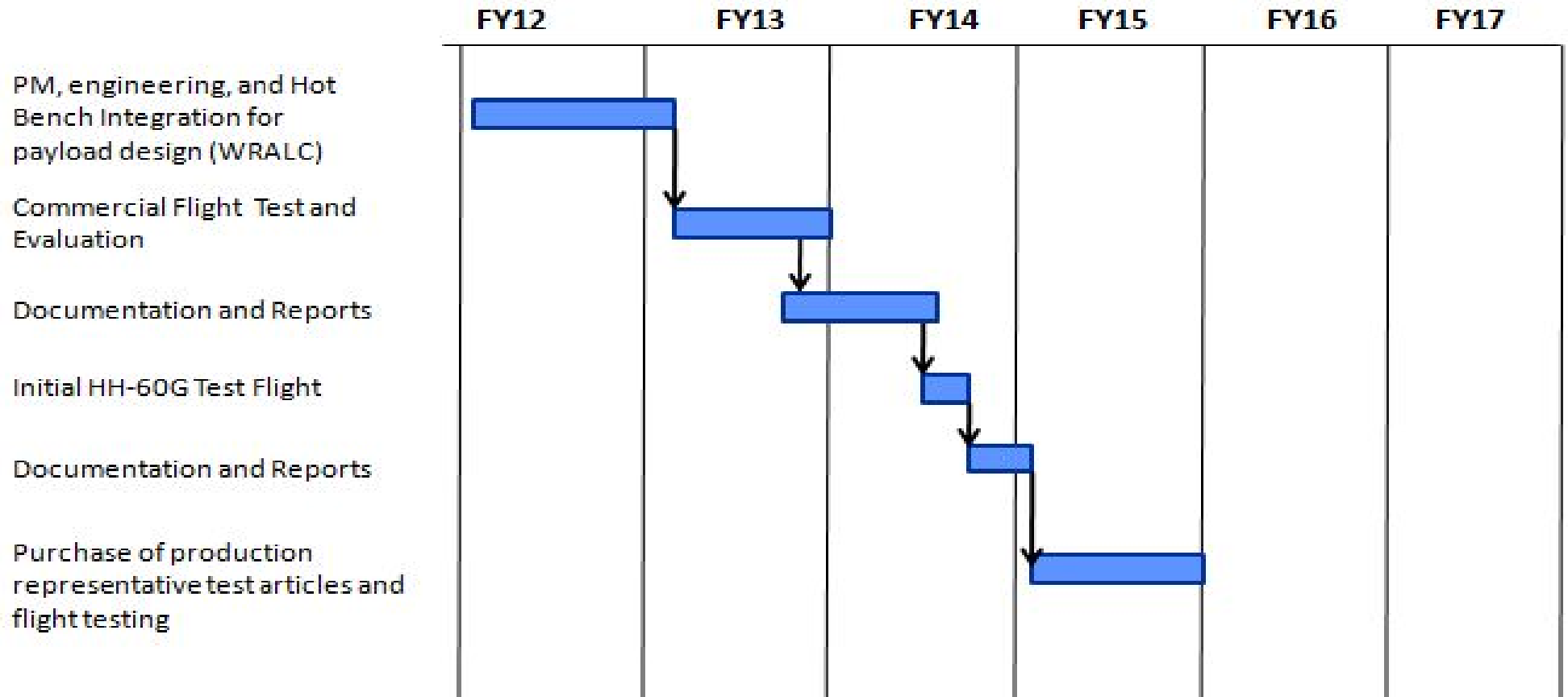
E. Performance Metrics

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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 676016: <i>Avionics Development and Integration</i>

Avionics Development and Integration



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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 676016: <i>Avionics Development and Integration</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Program Management, Engineering and Hot Bench Integration for Payload Design	1	2012	1	2013
Commercial Flight Test and Evaluation	1	2013	4	2013
Documentation and Reports	4	2013	3	2014
Initial HH-60G Flight Test	3	2014	4	2014
Documentation and Reporting	4	2014	1	2015
Purchase Production Representative Test Articles for flight test	1	2015	4	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	2.821	0.927	1.119	-	1.119	0.919	0.672	0.659	0.651	Continuing	Continuing
675352: <i>Guardian Angel RDT&E</i>	2.821	0.927	1.119	-	1.119	0.919	0.672	0.659	0.651	Continuing	Continuing
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 FY13 funds will be used to develop items within the FoS to include but not limited to: CSAR SONAR, Maritime Recovery, Technical Recovery kits, Guardian Angel Operations Kit.

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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	2.921	0.927	-	-	-
Current President's Budget	2.821	0.927	1.119	-	1.119
Total Adjustments	-0.100	-	1.119	-	1.119
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.100	-	1.119	-	1.119

C. Accomplishments/Planned Programs (\$ in Millions)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Title: GA FoS	2.821	0.927	1.119	-	1.119
Description: Standardize, modernize, and develop additional capability for the weapons system used by Combat Rescue Officers and Pararescuemen.					
FY 2011 Accomplishments: Studies, analysis, program office support, implementation of an acquisition strategy, prototype acquisition, and preparation of other documents as needed to modernize the Guardian Angel Weapons System.					
FY 2012 Plans: Continue execution of previous year's acquisition activities. Develop strategies for increased capability. Engineering change proposals as needed.					
FY 2013 Base Plans: Continue execution of previous year's acquisition activities. Develop strategies for increased capability. Engineering change proposals as needed					
FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	2.821	0.927	1.119	-	1.119

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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D. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207227, OPAF, Pararescue (Gu...: <i>Guardian Angel</i>)	3.597	12.859	23.435	0.000	23.435	25.024	24.782	24.178	21.734	135.348	135.348

E. 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.

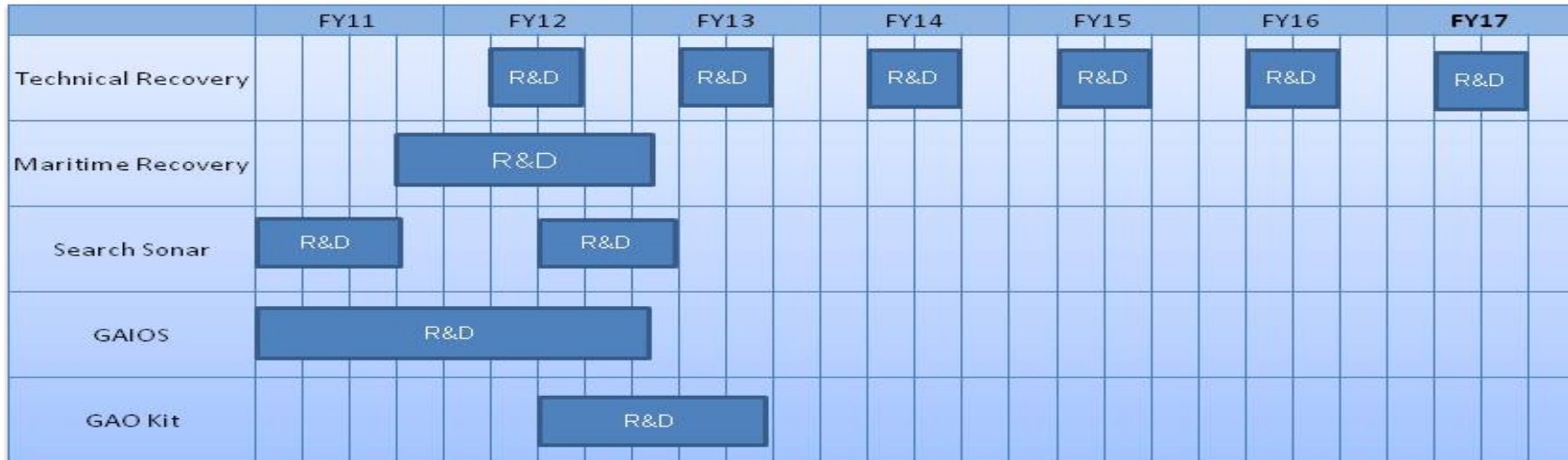
F. Performance Metrics

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>

**Guardian Angel Weapon System Schedule
As of Aug 11**



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force **DATE:** February 2012

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>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GA Family Of Systems	1	2011	4	2014
Test and Evaluation	1	2011	4	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	11.589	20.727	63.853	-	63.853	60.995	19.248	19.291	15.230	Continuing	Continuing
670001: <i>Air Force TENCAP</i>	11.589	20.727	63.853	-	63.853	60.995	19.248	19.291	15.230	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 (for example Battlefield Airborne Command Node (BACN) Intra-Flight Data Link System (IFDL) project). 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.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	11.648	20.727	11.901	-	11.901
Current President's Budget	11.589	20.727	63.853	-	63.853
Total Adjustments	-0.059	-	51.952	-	51.952
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.059	-	51.952	-	51.952

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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Change Summary Explanation

FY11: -\$0.059M reduction for CGRs.

FY13: +\$51.952M increase for support to USPACOM's BACN/IFDL and BACN Intra-Flight Subsystem - Multi-Domain Integration (BIS-MDI) efforts.

C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013
<p>Title: Exploitation Applications</p> <p>Description: Exploiting existing Space, National, and Global ISR, and NTISR for tactical applications by rapidly prototyping projects and demonstrating resulting capabilities and influencing the design and operation of future Space, National and global ISR, and NTISR systems for tactical users.</p> <p>FY 2011 Accomplishments: Rapidly prototyped projects, demonstrated resulting capabilities and influenced the design and operation of future Space, National and global ISR, and NTISR systems for tactical users.</p> <p>FY 2012 Plans: Rapidly prototyping projects, demonstrating resulting capabilities and influencing the design and operation of future Space, National and global ISR, and NTISR systems.</p> <p>FY 2013 Plans: Rapidly prototyping projects, demonstrating resulting capabilities and influencing the design and operation of future Space, National and global ISR, and NTISR systems for tactical users.</p>	10.844	10.953	11.118
<p>Title: BACN/IFDL</p> <p>Description: Support USPACOM's counter Digital Radio Frequency Memory (DRFM) tactics development efforts.</p> <p>FY 2012 Plans: Provide resources to USPACOM's counter DRFM tactics development efforts with one Battlefield Airborne Communications Node – BACN Intra-Flight Data Link Subsystem (BACN-BIS) equipped aircraft using existing BACN equipment</p> <p>FY 2013 Plans: Provide resources to USPACOM's counter DRFM tactics development efforts with one BACN-BIS equipped aircraft using existing BACN equipment</p>	-	9.000	9.000
<p>Title: BIS-MDI</p> <p>Description: BACN Intra-Flight Data Link Subsystem – Multi-Domain Integration (BIS-MDI) is a USPACOM effort to provide a means to broadcast multi-source information in a Link 16 compatible format.</p>	-	-	42.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p><i>FY 2013 Plans:</i> Develop, procure, install, and integrate four BIS-MDI communication pods on F-15s. Cost of all ancillary equipment including antennas is included.</p>			
<p><i>Title:</i> Program Support</p> <p><i>Description:</i> Provide program support and other government support to the AFTENCAP program.</p> <p><i>FY 2011 Accomplishments:</i> Provided program support and other government support to the AFTENCAP program.</p> <p><i>FY 2012 Plans:</i> Provide program support and other government support to the AFTENCAP program.</p> <p><i>FY 2013 Plans:</i> Provide program support and other government support to the AFTENCAP program.</p>	0.745	0.774	0.735
<p><i>Title:</i> BIS-MDI Program Support</p> <p><i>Description:</i> Provide program support and other government support for BIS-MDI.</p> <p><i>FY 2013 Plans:</i> Provide management services specifically for the BIS-MDI effort.</p>	-	-	1.000
Accomplishments/Planned Programs Subtotals	11.589	20.727	63.853

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Not applicable: <i>N/A</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. 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 Air Force TENCAP contracts established with vendors responding to annual Broad Agency Announcements issued by SIDC. The

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	PE 0207247F: <i>Air Force TENCAP</i>

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 Air Force TENCAP.

The Air Force is pursuing a spiral approach to the BIS-MDI segment to rapidly respond to PACOM capability requirements. Spiral Acquisition utilizes a disciplined systems engineering approach along with a “build-test-build-test-deliver” which focuses on mitigating cost and schedule risk through a lower risk incremental delivery of mature technologies.

Contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible. Program consists of multiple small projects.

F. Performance Metrics

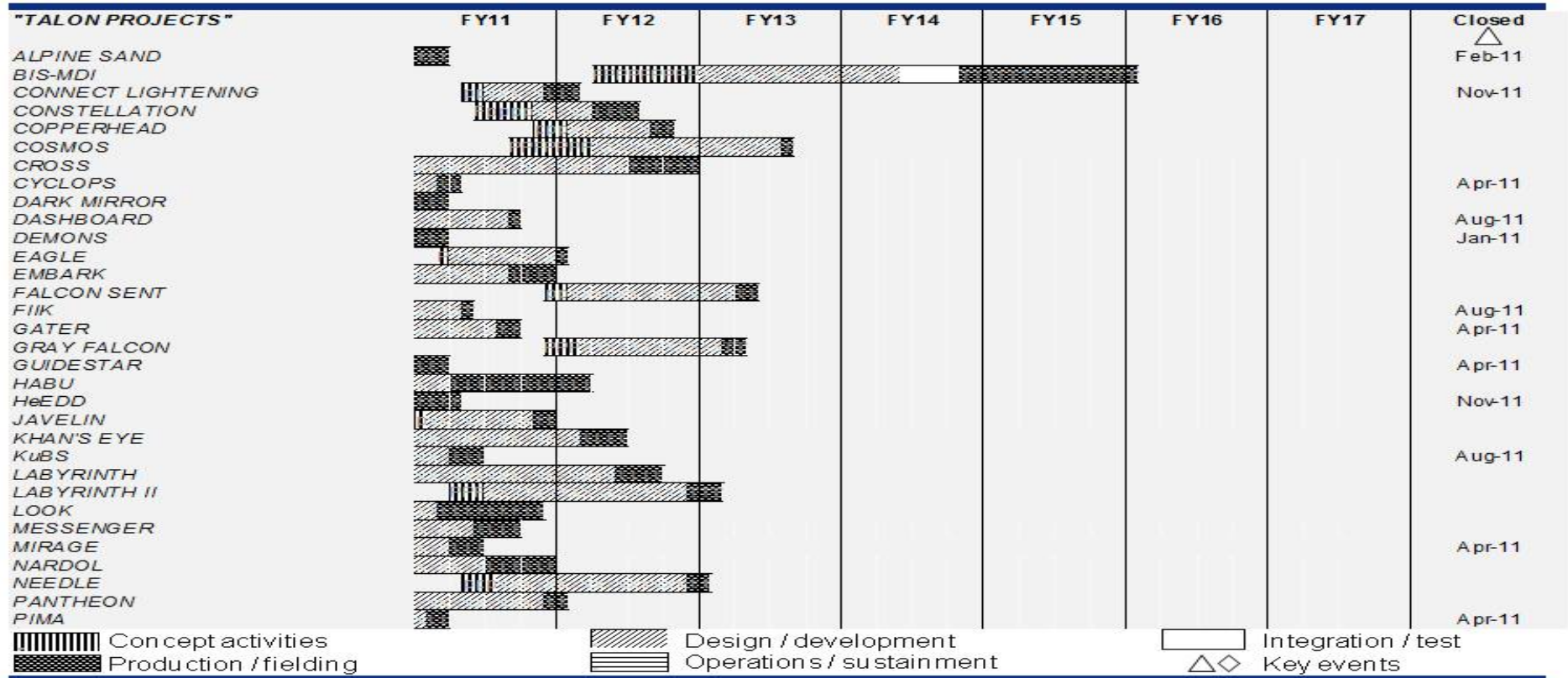
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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

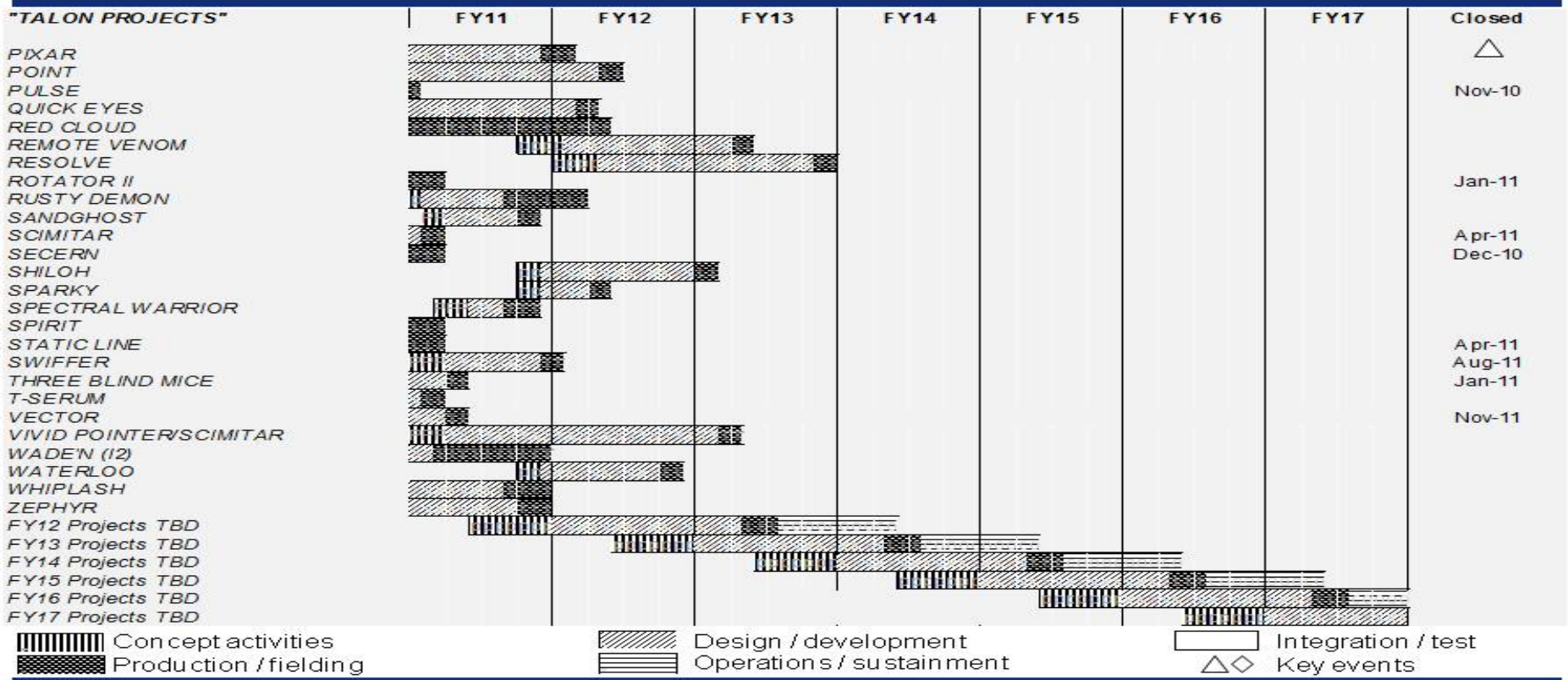


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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207247F: Air Force TENCAP	PROJECT 670001: Air Force TENCAP



Air Force TENCAP Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
FY 2012 project concepts identified and approved	3	2011	4	2012
FY 2012 project contractor proposals requested/reviewed	3	2011	1	2012
FY 2012 projects approved for implementation	1	2012	1	2012
FY 2012 projects contracted	1	2012	3	2012
FY 2013 project concepts identified and approved	3	2012	4	2012
FY 2013 project contractor proposals requested/reviewed	3	2012	1	2013
FY 2013 projects approved for implementation	1	2013	1	2013
FY 2013 projects contracted	1	2013	3	2013
FY 2014 project concepts identified and approved	3	2013	4	2013
FY 2014 project contractor proposals requested/reviewed	3	2013	1	2014
FY 2014 projects approved for implementation	1	2014	1	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	2.915	3.128	1.063	-	1.063	1.075	1.115	1.180	1.177	Continuing	Continuing
675347: <i>Advanced Targeting Pod</i>	2.915	3.128	1.063	-	1.063	1.075	1.115	1.180	1.177	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 capabilities which are either above the capabilities of the industrial base or that require accelerated development timelines in order to meet operational requirements. It also includes technical analysis, studies and assessments necessary to support the development and integration of future capabilities. 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.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	3.017	3.128	3.335	-	3.335
Current President's Budget	2.915	3.128	1.063	-	1.063
Total Adjustments	-0.102	-	-2.272	-	-2.272
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.087	-			
• Other Adjustments	-0.015	-	-2.272	-	-2.272

Change Summary Explanation

FY11 adjustments are Congressional General Reductions -\$0.015 and SBIR for -.087

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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FY13 adjustments: -\$2.272M reduction for higher Air Force Priorities.

C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Requirements	2.915	3.128	1.063	-	1.063
Description: Technology improvements, requirements definition (studies, analysis and assessments).					
FY 2011 Accomplishments: Technology improvements, requirements definition (studies, analysis and assessments).					
FY 2012 Plans: Technology improvements, requirements definition, studies, analysis and assessments.					
FY 2013 Base Plans: Technology improvements, requirements definition, studies, analysis and assessments.					
Accomplishments/Planned Programs Subtotals					
	2.915	3.128	1.063	-	1.063

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF, PE 0207249F, Precision Att...: N/A	296.812	69.335	37.771	55.000	92.771	35.681	20.529	20.179	21.039	Continuing	Continuing

E. Acquisition Strategy

Funds will primarily be executed for studies, analysis and definition for the purpose of identifying improved capability and maintenance mods requirements. Contracting strategy is dependent on market research results. Prior efforts have been accomplished by the prime contractors as well as industry partners.

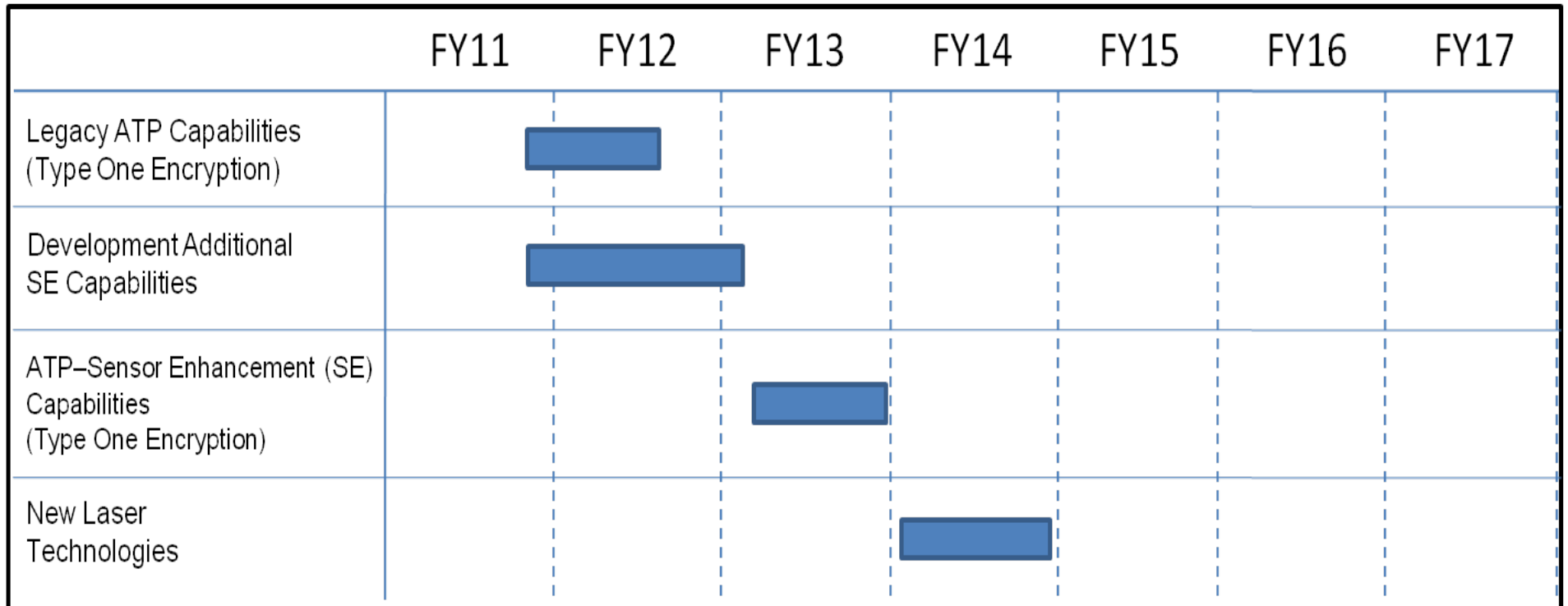
F. Performance Metrics

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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 Improvement Roadmap



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Legacy ATP Encryption Study	4	2011	3	2012
ATP-SE Capability Improvement Studies	4	2011	1	2013
ATP-SE Encryption Study	2	2013	4	2013
Laser Technology Study	1	2014	4	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	19.949	18.509	12.094	-	12.094	12.222	12.559	13.047	12.989	Continuing	Continuing
674804: <i>Compass Call</i>	19.949	18.509	12.094	-	12.094	12.222	12.559	13.047	12.989	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 AFPD 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), Integrated Modern Communication Receiver, 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 FY13 is required to support RDT&E efforts for 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. 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.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	20.652	18.509	12.042	-	12.042
Current President's Budget	19.949	18.509	12.094	-	12.094
Total Adjustments	-0.703	-	0.052	-	0.052
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.598	-			
• Other Adjustments	-0.105	-	0.052	-	0.052

Change Summary Explanation

FY11: adjustment (CGR -0.105) shown in Other Adjustments Row.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Baseline Upgrade Development	19.949	18.509	12.094	-	12.094
Description: Support Baseline 2 development, integration and test, plus SPEAR Generation 3 for Baseline 2, and Baseline 3 non-recurring engineering (NRE) leading into development.					
FY 2011 Accomplishments: Baseline 2: Continued the development, integration, test and delivery of SPEAR classified techniques for new targets. CCOS 4.2/4.3: Continued development of Electronic Attack Waveforms against Advanced Commercial and Military Communications and Radar targets. SPEAR Generation 3: Progressed design for Baseline 2 through Critical Design Review (CDR).					
FY 2012 Plans: Support Baseline 2 development, integration, and test of SPEAR classified techniques and electronic attack infrastructure, Network Centric Operations and Reachback Connectivity Capability, Digital Signal Acquisition and Analysis Subsystem and Digital Exciter Subsystem. Initiate Baseline 3 development of Modern Communications Receiver technologies, Human to Machine Interface, Commercial Band Phased Array New Target Development,					

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Advanced Commercial and Military Communications, Counter Radar and Counter Satellite Navigation Techniques, and Target Development. <i>FY 2013 Base Plans:</i> Will continue Baseline 2 integration, and test of SPEAR classified techniques and electronic attack infrastructure, Network Centric Operations and Reachback Connectivity Capability, Digital Signal Acquisition and Analysis Subsystem and Digital Exciter Subsystem. Continue Baseline 3 development of Modern communications receiver technologies, Human Machine Interface, Commercial Band Phased Array New Target Development, Advanced Commercial and Military Communications, Counter Radar and Counter Satellite Navigation Techniques, and Target Development.					
Accomplishments/Planned Programs Subtotals	19.949	18.509	12.094	-	12.094

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF, PE 0207253F, COMPASS CALL: <i>CC Procurement</i>	164.458	364.331	78.687	0.000	78.687	73.413	71.901	74.154	75.513	Continuing	Continuing
• O&M, PE 0207253F, COMPASS CALL: <i>CC O&M</i>	185.596	165.923	117.100	31.146	148.246	124.487	133.049	132.578	137.493	Continuing	Continuing

E. Acquisition Strategy
EC-130H COMPASS CALL capability is maintained with incremental upgrades per the baseline acquisition strategy plus any quick reaction capabilities (QRC) developments 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 procured supplies and services 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.

F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

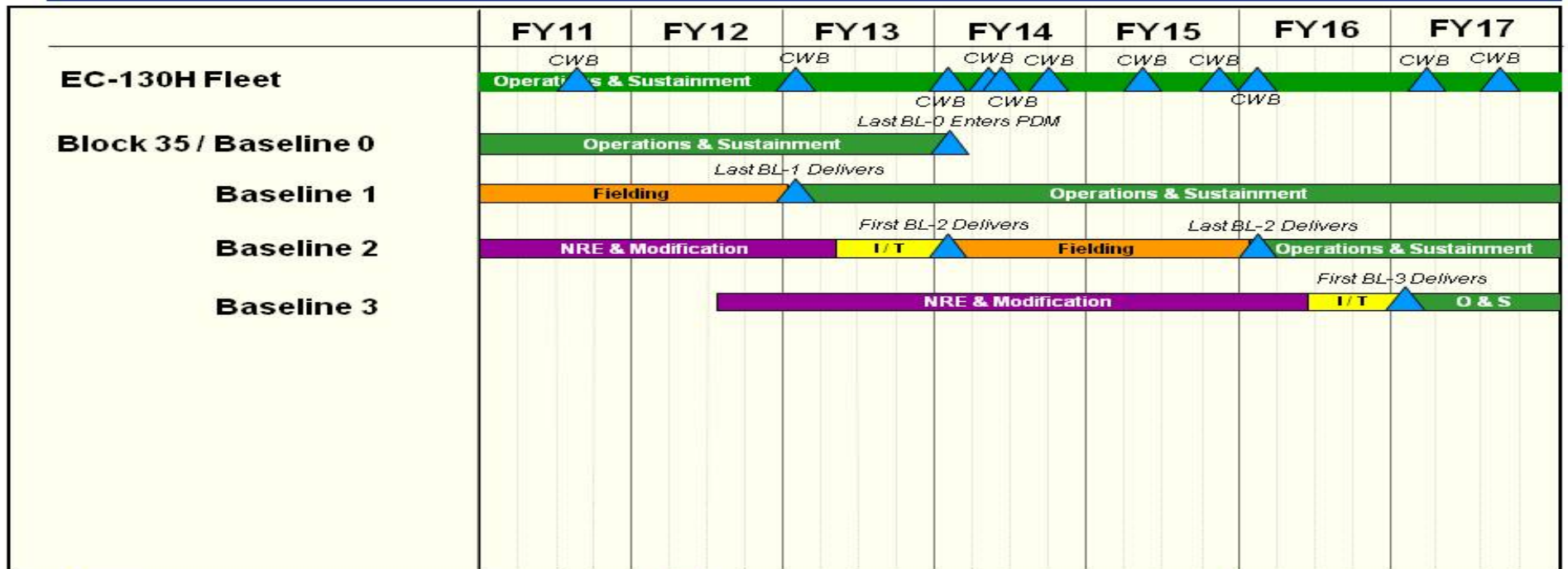
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0207253F: Compass Call

PROJECT
 674804: Compass Call



EC-130H COMPASS CALL FY13 PB Schedule



Integration & Testing
 Design & Development
 Operations & Sustainment
 Key events
 Production & Fielding
 Note: CWB = Center Wing Box

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Baseline 2 Development, Integration and Test	1	2011	1	2014
Baseline 3 Development, Integration and Test	1	2013	1	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	115.290	172.967	187.984	-	187.984	114.369	193.431	190.403	192.616	Continuing	Continuing
671012: <i>Aircraft Engine Component Improvement Program</i>	115.290	141.093	156.236	-	156.236	82.837	161.881	157.976	159.761	Continuing	Continuing
675365: <i>F-35</i>	-	31.874	31.748	-	31.748	31.532	31.550	32.427	32.855	Continuing	Continuing

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 this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	147.396	182.967	180.546	-	180.546
Current President's Budget	115.290	172.967	187.984	-	187.984
Total Adjustments	-32.106	-10.000	7.438	-	7.438
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-4.721	-			
• Other Adjustments	-27.385	-10.000	7.438	-	7.438

Change Summary Explanation

FY 2011 adjustments are Congressional General Reduction -\$0.615, Cong Directed Reductions -\$26.770 and Small Business Innovative Research (SBIR) Reduction -\$4.721)

FY 2012 - Reduction -\$10.000M due to Congressional Mark in FY12PB.

FY 2013 - Increase +\$7.438M addresses additional Engine CIP R&M tasks.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
671012: <i>Aircraft Engine Component Improvement Program</i>	115.290	141.093	156.236	-	156.236	82.837	161.881	157.976	159.761	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 this budget activity includes development efforts to upgrade systems that have been fielded or have received for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Aircraft Engine Component Improvement Program	115.290	141.093	156.236	-	156.236
Description: Aircraft Engine Component Improvement Program (CIP) provides critical sustaining engineering support for approximately 22,500 engines (including FMS) to maintain flight safety (highest priority), to address parts obsolescence, 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.					
FY 2011 Accomplishments: Funding enables Engine CIP to execute 200+ tasks across 13+ engine types. Majority of the budget addresses engine issues associated with the A-10, B-1, B-2, C-130, F-15, F-16, and F-22, aircraft. Engine CIP work effort addresses safety of flight, engine component redesign, repair/rework procedures, engine maturation					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
and life limit/mission analysis. In addition to engine maturation, ground and flight engine testing is used to validate redesigned parts and new repair procedures. Engine CIP maintains engine flight safety (highest priority), addresses obsolescence deficiencies, improves system operational readiness (OR) and reliability and maintainability (R&M), reduces engine life cycle costs (LCC) and sustains engines throughout their service life.					
<i>FY 2012 Plans:</i> Funding enables Engine CIP to execute 200+ tasks across 13+ engine types. Majority of the budget addresses engine issues associated with the A-10, B-1, B-2, C-130, F-15, F-16, and F-22 aircraft. Engine CIP work effort addresses safety of flight, engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. In addition to engine maturation, ground and flight engine testing is used to validate redesigned parts and new repair procedures. Engine CIP maintains engine flight safety, addresses obsolescence deficiencies, improves system operational readiness (OR) and reliability & maintainability (R&M), reduces engine life cycle costs (LCC), and sustains engines throughout their service life.					
<i>FY 2013 Base Plans:</i> Funding enables Engine CIP to execute 200+ tasks across 13+ engine types. Majority of the budget addresses engine issues associated with the A-10, B-1, B-2, C-130, F-15, F-16, and F-22 aircraft. Engine CIP work effort addresses safety of flight, engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. In addition to engine maturation, ground and flight engine testing is used to validate redesigned parts and new repair procedures. Engine CIP maintains engine flight safety, addresses obsolescence deficiencies, improves system operational readiness (OR) and reliability & maintainability (R&M), reduces engine life cycle costs (LCC), and sustains engines throughout their service life.					
<i>FY 2013 OCO Plans:</i> N/A					
Accomplishments/Planned Programs Subtotals	115.290	141.093	156.236	-	156.236

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 1: <i>Other APPN's</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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 0207268F: <i>Aircraft Engine Component Improvement Program (CIP)</i>	671012: <i>Aircraft Engine Component Improvement Program</i>

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 candidates.

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>

Not applicable. Engine CIP is a continuing sustaining engineering support program that annually funds 200+ separate tasks.

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force **DATE:** February 2012

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>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Engine CIP activities	1	2011	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>F-35</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675365: <i>F-35</i>	-	31.874	31.748	-	31.748	31.532	31.550	32.427	32.855	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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 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 system's 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 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 this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Aircraft Engine Component Improvement Program (F135)	-	31.874	31.748	-	31.748
Description: The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical sustaining engineering support for F-35 propulsion systems 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.					
FY 2011 Accomplishments: Not Applicable					
FY 2012 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>F-35</i>
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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Initial priority will be to procure representative test engines and begin planning for engine maturation testing. JSF CIP will advance engine maturity 2X hours ahead of the fleet to identify any major safety or reliability issues before they can affect the field. In addition accelerated maturation testing, several reliability degraders will also be addressed, including sensors, seals, disk life, and other component deficiencies. Funding 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.					
<i>FY 2013 Base Plans:</i> Funding enables JSF Engine CIP to execute approximately 30 tasks supporting initial flying operations on F135. Engine CIP work effort addresses safety of flight, engine component redesign, repair/rework procedures, accelerated maturation testing and life limit/mission analysis. In addition, ground and flight engine testing will be used to validate redesigned parts and new repair procedures. Funding will enable JSF CIP to maintain/improve engine flight safety, address parts obsolescence, improve system operational readiness and reliability & maintainability, reduce engine life cycle cost, and sustain engines throughout their service life.					
Accomplishments/Planned Programs Subtotals	-	31.874	31.748	-	31.748

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE: 0205633N, OTHER APPN: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Contracts within this Program Element are projected to be awarded sole source to engine manufacturer. F-35 Engine CIP tasks are generally assigned to the original engine manufacturer based on available funding and prioritization of candidates.

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>F-35</i>

Not applicable. F-35 Engine CIP is a continuing sustaining engineering support program that will fund the procurement of two F135 test engines and approximately 10 tasks in FY2012 and approximately 30 tasks annually beginning in FY2013.

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force **DATE:** February 2012

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>F-35</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
F-35 Engine CIP Tasks	2	2012	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>ISR Innovations</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	115.300	50.000	-	-	-	-	-	-	-	Continuing	Continuing
675373: <i>ISR Innovations Program</i>	115.300	50.000	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The BLOS C2 initiative was designed to support a CENTCOM Capability Gap and CONPLAN to satisfy a NAVCENT force protection threat. AF A2Q offered the BLOS C2 architecture as the first instantiation of its RAIN architecture. AF A3/5 coordinated with USD AT&L. Twelve month in-theater delivery.

The BLOS C2 architecture leverages existing air and ground platforms with software modified CDL radios to include ROVER. As a result of the software modification (NET-T), this family of CDL radios will establish a battlefield Internet like capability with Type I and AES encryption.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	115.300	50.000	-	-	-
Total Adjustments	115.300	50.000	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	50.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	115.300	-			

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

Project: 675373: *ISR Innovations Program*
Congressional Add: *BLOS C2*

Congressional Add Subtotals for Project: 675373

	FY 2011	FY 2012
	115.300	50.000
	115.300	50.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>ISR Innovations</i>
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Congressional Add Details (\$ in Millions, and Includes General Reductions)	FY 2011	FY 2012
Congressional Add Totals for all Projects	115.300	50.000

Change Summary Explanation

FY11 Congressional Add of \$115M in Other Adjustment row.

C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012
Congressional Add: BLOS C2	115.300	50.000
<p>FY 2011 Accomplishments: The BLOS C2 initiative was designed to support a CENTCOM Capability Gap and CONPLAN to satisfy a NAVCENT force protection threat. AF A2Q offered the BLOS C2 architecture as the first instantiation of its RAIN architecture. AF A3/5 coordinated with USD AT&L. Twelve month in-theater delivery.</p> <p>The BLOS C2 architecture leverages existing air and ground platforms with software modified CDL radios to include ROVER. As a result of the software modification (NET-T), this family of CDL radios will establish a battlefield Internet like capability with Type I and AES encryption.</p> <p>FY 2012 Plans: Continuation of BLOS C2</p>		
Congressional Adds Subtotals	115.300	50.000

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Continuing</u>
• none: <i>none</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. Acquisition Strategy

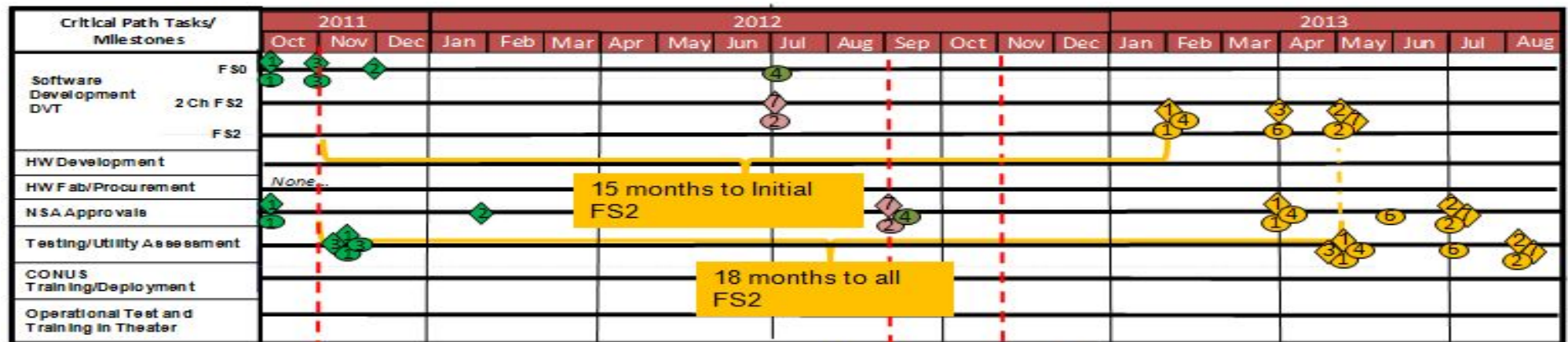
N/A

F. 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.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207277F: ISR Innovations	PROJECT 675373: ISR Innovations Program

BLOS C2 Implementation Plan by CDL Radio



BLOS C2 Start

OT Ready

BLOS C2 Operational

- Green Diamond: FS0 On Contract
- Green Diamond: FS0 Requires Funding
- Yellow Diamond: FS2
- Pink Diamond: FS2 Light

Key	Hub Radio	Spoke Radio
1	VORTEX	ROVER5
2	Mini-CDL/Mini-TCDL	Mini-CDL
3	CMDL	ROVER5i
4		ROVER6
5		C2 ROVER
6		Net ROVER
7	MR-TCDL	

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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>ISR Innovations</i>	PROJECT 675373: <i>ISR Innovations Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Software Development DVT	1	2012	4	2013
Hardware Development	1	2012	4	2013
Hardware Fabrication/Procurement	1	2012	4	2013
NSA Approvals	1	2012	4	2013
Testing/Utility Assessment	1	2012	4	2013
CONUS Training/Deployment	1	2012	4	2013
Operational Test and Training in Theater	1	2012	4	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	19.324	5.796	7.950	-	7.950	8.776	16.234	13.227	4.425	Continuing	Continuing
674515: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>	-	-	3.935	-	3.935	4.132	4.083	4.135	4.205	Continuing	Continuing
675356: <i>JASSM Extended Range (JASSM-ER)</i>	19.324	5.796	4.015	-	4.015	4.644	12.151	9.092	0.220	Continuing	Continuing

Note

Totals include funding for PRCP Program Number, 555, JASSM

The Cost to Complete and Total Cost for MDAP projects in this program element are documented in the R3. The Cost to Complete and Total Cost on the R2 are entered as "Continuing" and not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding.

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 two (2) variants 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), and F-35. Aircraft integration for JASSM-ER is the B-1B. Objective aircraft is the B-52H, F16C/D (Block 50/52), B-2, F-16C/D (Block25-42), F-15E, and F-35. 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, JASSM baseline and JASSM-Extended Range (JASSM-ER) - both with improved reliability, separate milestone decision points and separate projects within a single program element.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year. The JASSM program is evaluating Diminishing Manufacturing Sources Material Shortages (DMSMS) and several obsolescence issues.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
3600: <i>Research, Development, Test & Evaluation, Air Force</i>	PE 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>
BA 7: <i>Operational Systems Development</i>	

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	20.000	5.796	3.935	-	3.935
Current President's Budget	19.324	5.796	7.950	-	7.950
Total Adjustments	-0.676	-	4.015	-	4.015
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.574	-			
• Other Adjustments	-0.102	-	4.015	-	4.015

Change Summary Explanation

FY11 Congressional General Reduction of 0.102M in Other Adjustment row.

FY13 funding increase of 4.015M for the development of JASSM and JASSM-ER Common Telemetry Instrumentation Kit (C-TIK). TIK is installed in flight test missiles to monitor the condition of the missile during the test flight. The current TIK needs to be installed in JASSM-ER during the production process and does not allow the Air Force to randomly select test missiles.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
674515: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>	-	-	3.935	-	3.935	4.132	4.083	4.135	4.205	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

This is not an FY13 New Start. Efforts previously accomplished in BPAC 5356.

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), and F-35. 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. This project also develops improvements to the JASSM and JASSM-ER fuze, including the development of the Electronic Safe and Arm Fuze (ESAF). JASSM was designated ACAT 1D in Jun 2007 due to a Nunn-McCurdy unit cost breach. The JASSM restructured program was certified by DAE to Congress on 1 May 2008.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: ESAF	-	-	2.115	-	2.115
Description: Electronic Safe and Armed Fuze (ESAF) to replace current fuze. Reliability enhancements support baseline JASSM and JASSM-ER programs.					
FY 2011 Accomplishments: N/A					
FY 2012 Plans: N/A					
FY 2013 Base Plans: Electronic Safe and Arm Fuze (ESAF) development					
FY 2013 OCO Plans: N/A					
Title: Development, DMSMS, and Obsolescence issues	-	-	1.000	-	1.000

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
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<p>Description: Efforts focusing on other Development, Diminishing Manufacturing Sources Material Shortages (DMSMS), and Obsolescence issues.</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans: N/A</p> <p>FY 2013 Base Plans: Efforts focusing on other Development, Diminishing Manufacturing Sources Material Shortages (DMSMS), and Obsolescence issues. Such as, but not limited to the JASSM Anti-Jam GPS Receiver- SAASM (JAGR-S), Mechanical Control Unit (MCU), Power and Engine Control Unit (PECU) which are the top issues, others are being evaluated.</p> <p>FY 2013 OCO Plans: N/A</p>					
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<p>Title: Test Support</p> <p>Description: Government Test Support and Other Development. Includes flight test equipment, targets, 46th Test Wing and Range support, and other ground/flight test support.</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans: N/A</p> <p>FY 2013 Base Plans: Government Test Support and Other Development. Includes flight test equipment, targets, 46th Test Wing and Range support, and other ground/flight test support.</p> <p>FY 2013 OCO Plans: N/A</p>	-	-	0.620	-	0.620
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<p>Title: PMA</p>	-	-	0.200	-	0.200
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Description: Program Management Administration (PMA. Program office/mission support. Provide oversight of JASSM development/upgrade activities.</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans: N/A</p> <p>FY 2013 Base Plans: Continue program office/mission support. Provide oversight of JASSM development/upgrade activities. Also supports JASSM-ER development during LRIP.</p> <p>FY 2013 OCO Plans: N/A</p>					
Accomplishments/Planned Programs Subtotals	-	-	3.935	-	3.935

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0207325F, JASSM Missile Procu...: <i>JASSM Baseline Missile</i>	165.914	167.243	155.156	0.000	155.156	143.195	142.442	120.327	118.340	594.407	2,553.370

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force **DATE:** February 2012

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>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
-Follow on Development, Reliability, Component Upgrades, Data Link, and Electronic Safe and Arm Fuze (ESAF) development	C/CPFF	Lockheed Martin:Orlando, FL	708.223	-		2.615	Mar 2013	-		2.615	8.441	719.279	719.279
-Efforts focusing on other Development, Diminishing Manufacturing Sources Material Shortages (DMSMS), and Obsolescence issues.	C/CPAF	Lockheed Martin:Orlando, FL	-	-		0.500	Jul 2013	-		0.500	0.000	0.500	0.500
Subtotal			708.223	-		3.115		-		3.115	8.441	719.779	719.779

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration (PMA). Continue program office/ mission support. Provide	C/Various	PMA:Eglin AFB, FL	61.839	-		0.200	Mar 2013	-		0.200	0.500	62.539	62.539
Subtotal			61.839	-		0.200		-		0.200	0.500	62.539	62.539

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
46 TW test support, flight test	SS/CPIF	Lockheed Martin:Orlando, FL	156.309	-		0.620	Mar 2013	-		0.620	7.614	164.543	164.543
Subtotal			156.309	-		0.620		-		0.620	7.614	164.543	164.543

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

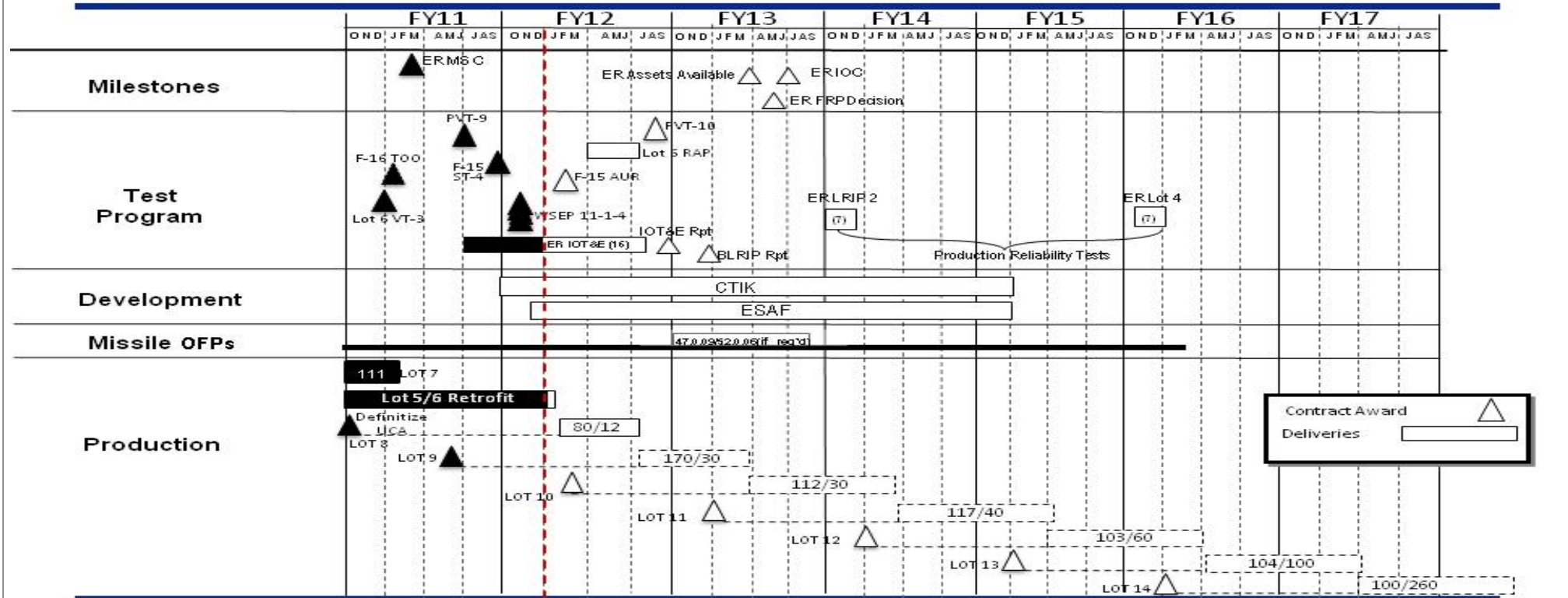
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0207325F: Joint Air-to-Surface Standoff
 Missile (JASSM)

PROJECT
 674515: Joint Air-to-Surface Standoff Missile
 (JASSM)



JASSM Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Development of Electronic Safe and Arm Fuze (ESAF)	1	2012	1	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675356: <i>JASSM Extended Range (JASSM-ER)</i>	19.324	5.796	4.015	-	4.015	4.644	12.151	9.092	0.220	Continuing	Continuing
Quantity of RDT&E Articles	12	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

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, and F-35. JASSM-ER provides the capability to attack a variety of high value fixed 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) Rev B dated February 28, 2007, which was updated under JASSM-ER development Phase II System Development and Demonstration in FY07. 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. This project also develops a Common Telemetry Instrumentation Kit (C-TIK) which will be used during flight testing and will be common to JASSM and JASSM-ER. Improvements to the JASSM and JASSM-ER fuze, including the development of the Electronic Safe and Arm Fuze (ESAF) is accomplished in this project.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: C-TIK	-	2.500	2.515	-	2.515
Description: Common Telemetry Instrumentation Kit (C-TIK) replaces current TIK used during flight testing and will be common to JASSM and JASSM-ER.					
FY 2011 Accomplishments: N/A					
FY 2012 Plans: Supports development and fielding of common test Instrumentation Kit (C-TIK) for JASSM and JASSM-ER.					
FY 2013 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force				DATE: February 2012	
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 Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Supports development and fielding of common test Instrumentation Kit (C-TIK) for both JASSM Baseline and JASSM-ER. FY 2013 OCO Plans: N/A					
Title: Other Development Description: Other Development/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. To include, but not limited to Electronic Safe and Arm Fuze (ESAF). FY 2011 Accomplishments: Other Development/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. To include, but not limited to Electronic Safe and Arm Fuze (ESAF). FY 2012 Plans: Other Development/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. To include, but not limited to Electronic Safe and Arm Fuze (ESAF). FY 2013 Base Plans: Other Development/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. To include, but not limited to Electronic Safe and Arm Fuze (ESAF). FY 2013 OCO Plans: N/A	2.816	1.196	0.500	-	0.500
Title: OT Assets Description: JASSM-ER Operational Test (OT) Assets Procurement. Purchases missiles to complete Initial Operational Test and Evaluation (IOT&E) required for full-rate production decision. Other development, parts upgrade, and Software updates FY 2011 Accomplishments:	15.844	0.100	0.100	-	0.100

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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 Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Incrementally funds procurement of OT missiles, including Test Instrumentation Kits, 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.</p> <p>FY 2012 Plans: Other development, parts upgrade, and Software updates.</p> <p>FY 2013 Base Plans: Other development, parts upgrade, and Software updates</p> <p>FY 2013 OCO Plans: N/A</p>					
<p>Title: Test Support</p> <p>Description: Government Test Support and Other Development. Includes flight test equipment, targets, 46th Test Wing and Range support, and other ground/flight test support.</p> <p>FY 2011 Accomplishments: Continues to fund OT flight test equipment, targets, 46th Test Wing and Range support, and other ground/flight test support.</p> <p>FY 2012 Plans: Funding for flight test equipment, targets, 46th Test Wing and Range support, and other ground/flight test support dealing with DMSMS and obsolescence issues.</p> <p>FY 2013 Base Plans: Funding for flight test equipment, targets, 46th Test Wing and Range support, and other ground/flight test support dealing with DMSMS and obsolescence issues.</p> <p>FY 2013 OCO Plans: N/A</p>	0.524	1.700	0.900	-	0.900
<p>Title: Program Management Administration (PMA)</p> <p>Description: Continue program office/mission support. Provide oversight of JASSM development/upgrade activities.</p> <p>FY 2011 Accomplishments:</p>	0.140	0.300	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Provide oversight of JASSM development/upgrade activities. Also supports JASSM-ER development during LRIP. FY 2012 Plans: Provide oversight of JASSM development/upgrade activities. Also supports JASSM-ER development during LRIP. FY 2013 Base Plans: N/A FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	19.324	5.796	4.015	-	4.015

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0207325F, JASSM Missile Procu...: <i>JASSM-ER Missile</i>	2.317	68.950	85.243	0.000	85.243	125.956	176.703	329.445	325.813	2,308.140	3,476.154

D. Acquisition Strategy
JASSM-ER is the extended range version of the JASSM baseline missile currently in full rate production. The initial JASSM-ER development contract, awarded in 2004, was Cost-Plus-Award-Fee. No additional funds were obligated to JASSM-ER efforts during the 2007 Nunn-McCurdy deliberations and development continued following the issuance of the 1 May 2008 Acquisition Decision Memorandum (ADM) that directed JASSM-ER to complete development. In 2008, the program office awarded a Cost-Plus-Incentive-Fee (CPIF) contract with performance incentives to complete the development effort. In January 2010, the program office awarded the remaining 12 JASSM-ER operational test assets with the JASSM Lot 8 production contract. Milestone C was approved on 10 Jan 11 and the JASSM-ER program started Low Rate Initial Production (LRIP) with the Lot 9 contract award in 3QFY11.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force **DATE:** February 2012

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>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JASSM-ER Phase I	SS/CPFF	Lockheed Martin:Orlando, FL	9.600	-		-		-		-	0.000	9.600	9.600
JASSM-ER Phase II	SS/CPFF	Lockheed Martin:Orlando, FL	107.219	-		-		-		-	0.000	107.219	107.219
C-TIK	SS/FFP	Lockheed Martin:Orlando, FL	-	3.196	May 2012	2.515	Jan 2013	-		2.515	19.308	25.019	25.019
-Other Development: Test Missile Procurement (for IT and OT) and Test Support, parts upgrade, software updates, reliability improvements, efficiency upgrades, and obsolescence issues.	Various	Lockheed Martin:Orlando, FL	17.974	0.600	Jan 2012	0.600	Jan 2013	-		0.600	33.100	52.274	52.274
Subtotal			134.793	3.796		3.115		-		3.115	52.408	194.112	194.112

Remarks
Common Test Instrumentation Kits (C-TIK)

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Support: Program Management Administration (PMA)	Various	Corp. Bills:Eglin AFB, FL	1.063	0.300	Jan 2012	-		-		-	0.000	1.363	1.363
Subtotal			1.063	0.300		-		-		-	0.000	1.363	1.363

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force **DATE:** February 2012

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)
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
46 TW test support, flight test equipment, & targets	Various	46 TW:Eglin AFB, FL	4.116	1.700	Jan 2012	0.900	Jan 2013	-		0.900	18.699	25.415	25.415
JASSM-ER missile procurement for IOT&E	SS/CPIF	Lockheed Martin:Orlando, FL	53.495	-		-		-		-	0.000	53.495	53.495
Subtotal			57.611	1.700		0.900		-		0.900	18.699	78.910	78.910

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		193.467	5.796		4.015		-	4.015	71.107	274.385	274.385

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

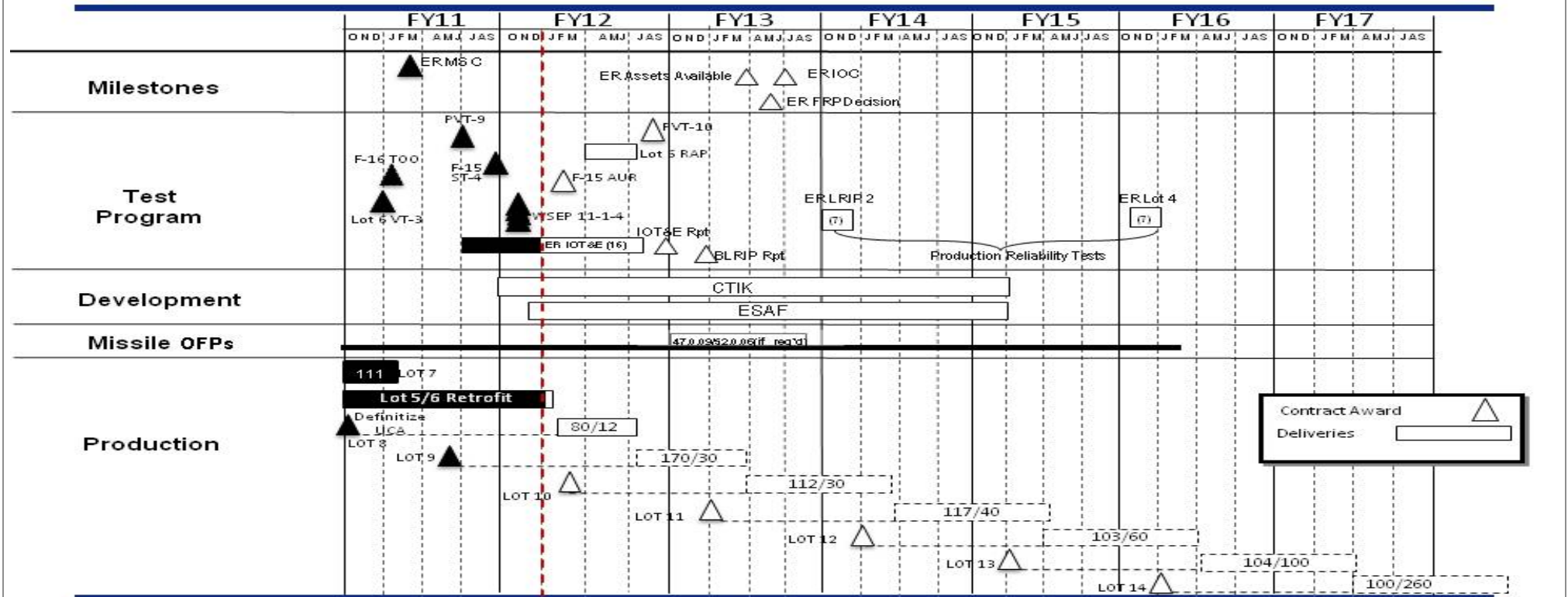
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0207325F: Joint Air-to-Surface Standoff
 Missile (JASSM)

PROJECT
 675356: JASSM Extended Range (JASSM-ER)



JASSM Schedule



Integrity - Service - Excellence

Contract Award ▲

Deliveries ▭

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Operational Test & Evaluation	3	2011	4	2012
Beyond LRIP Report	4	2012	4	2012
Milestone C	2	2011	2	2011
Start JASSM-ER Production (LRIP 1)	3	2011	3	2011
Common Test Instrumentation Kit (C-TIK)	1	2012	1	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	89.867	120.670	76.315	-	76.315	82.727	43.034	17.337	18.117	Continuing	Continuing
675117: <i>Integration Development</i>	69.863	97.663	50.674	-	50.674	66.461	25.909	-	-	Continuing	Continuing
675218: <i>Applications Development</i>	13.809	15.894	18.547	-	18.547	8.948	9.667	9.822	10.138	Continuing	Continuing
675220: <i>Unit Level</i>	6.195	7.113	7.094	-	7.094	7.318	7.458	7.515	7.979	Continuing	Continuing

Note

AOC 10.2 is PRCP Program Number (PNO) N42.

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. There are three funded projects within the AOC WS program element.

Integration Development supports the 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: air battle planning, management, and execution; operational level C2 of Integrated Air and Missile Defense (IAMD); as well as personnel recovery C2 in support of DoD, Coalition Partners, and other government agencies.

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 readily available to mission commanders and aircrews planning current flight operations.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
3600: <i>Research, Development, Test & Evaluation, Air Force</i>	PE 0207410F: <i>Air and Space Operations Center Weapon System (AOC WS)</i>
BA 7: <i>Operational Systems Development</i>	

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	93.102	121.880	89.529	-	89.529
Current President's Budget	89.867	120.670	76.315	-	76.315
Total Adjustments	-3.235	-1.210	-13.214	-	-13.214
• Congressional General Reductions	-	-1.210			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.610	-			
• Other Adjustments	-0.625	-	-13.214	-	-13.214

Change Summary Explanation

FY11 Congressional General Reductions of 0.625M in Other Adjustments row.

FY12 Congressional General Reduction (FFRDC, Sec. 8023) of 0.011M.

FY13: Program rephased in accordance with USD AT&L Acquisition Decision Memorandum signed June 2010, which directed the Air Force to competitively award a contract for pre-EMD risk reduction efforts, and AOC 10.2 Acquisition Strategy signed in December 2010, which describes the acquisition, business, technical, and sustainment strategy for the AOC 10.2 modernization program. FY13 funding reduced in Integration Development, due to AOC 10.2 contract delays caused by award protests.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675117: <i>Integration Development</i>	69.863	97.663	50.674	-	50.674	66.461	25.909	-	-	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 Operations Center Weapons 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 Support and Manpower Augmentation units. To keep the AOC current and interoperable with the COCOMs, cyber requirements, and fifth generation weapon system/weapons, the AOC WS program plans to evolve the AOC through the integration and test of progressively improving capabilities. Integrated Air and Missile Defense (IAMD) establishes critical IAMD improvements in the AOC WS to maximize the allocation, planning, and execution of IAMD. With the completion of the Weapon System Integrator (WSI) contract in September 2011, the AOC Program Office established an organic team to conduct upgrade, integration and fielding activities as a bridge to transition AOC WSI activities to the Modernization contractor. These activities (as performed by the WSI, Government Organic Team and/or the Modernization contractor) ensure a system of systems engineering perspective, and include weapon system standardization activities as defined by AOC WS requirements documents. AOC WS 10.2 pre-Engineering and Manufacturing Development (EMD) activities, including a Systems Requirements Review (SRR) and a delta-Preliminary Design Review (delta-PDR), commences immediately after Modernization contract award. In accordance with AOC 10.2 Milestone Decision Authority (MDA) direction, the 10.2 Modernization program will conduct prototyping and Limited Early Install (LEI) activities prior to Milestone B (MS-B) to reduce integration risk and improve user feedback in the acquisition process. AOC WS 10.2 EMD activities include the design (i.e., Critical Design Review), development, integration of 3rd party capabilities, testing (Contractor in-plant system testing, DT&E, OT&E, Operational Assessment, Test Readiness Review, etc.) of the AOC 10.2 baseline, as well as build-up and fielding of the Help Desk (HD), Formal Training Unit (FTU) and Combined Air Operations Center-eXperimental (CAOC-X) suites.

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

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems currently fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

AOC 10.2 is PRCP Program Number (PNO) N42.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force				DATE: February 2012		
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 Programs (\$ in Millions)						
Title: AOC 10.1						
Description: AOC 10.1 continues development of currently fielded system to improve capabilities provided to C/JFACC. Improves interoperability with sister services and C/JFC, provides virtualization of systems and improves tasking order processing/dissemination.						
FY 2011 Accomplishments: The AOC 10.1 baseline was supported by both the AOC WS WSI (through end of FY2011) and the AOC WS program office organic team to ensure a system of systems engineering perspective and included weapon system standardization activities as defined by the AOC WS requirements documents, as well as system integration/test and C&A activities. Efforts (fielding of Recurring Events [RE] 9 & 10 and testing of RE-11) consisted of updating and adding capabilities, including virtualization to be used in the transition to 10.2. With the completion of the WSI contract in September 2011, the AOC Program Office ramped-up this organic team to conduct upgrade, integration, fielding, and sustainment activities as a bridge in the transition of AOC WSI activities to the modernization contractor. Conducted prototyping activities in order to reduce integration risks. This prototyping was focused on refining and demonstrating several critical design concepts to ensure technical feasibility and operational employment.						
FY 2012 Plans: The AOC 10.1 baseline is supported by the AOC WS Program Office organic team (transitioned from the AOC WS Weapon System Integrator September 2011), to ensure a system of systems engineering perspective, and include weapon system standardization activities as defined by the AOC WS requirements documents, as well as system integration/test and Certification & Accreditation (C&A) activities. Efforts (completion of RE-09 and RE-10 fielding and completion of integration and testing of RE-11, and fielding of RE-11) consist of updating and adding capabilities, including virtualization to be used in the transition to 10.2.						
FY 2013 Base Plans: N/A						
FY 2013 OCO Plans: N/A						
Title: Integrated Air and Missile Defense (IAMD)						
		16.004	3.343	-	-	-
		-	17.762	-	-	-

PE 0207410F: *Air and Space Operations Center Weapon System*
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force			DATE: February 2012		
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 Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Description: C2 of IAMD improvements include dynamic planning/replanning and cross-Area of Responsibility (AOR) collaboration and coordination in the AOC WS to maximize the allocation, planning, and execution of IAMD.</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans: Establish critical C2 of IAMD improvements including dynamic planning/replanning and cross-AOR collaboration and coordination in the AOC WS to maximize the allocation, planning, and execution of IAMD. Additionally, includes but not limited to IAMD assessment of the Navy Maritime IAMD Planning System, Missile Defense Agency Command and Control Battle Management and Communications (C2BMC) or other systems that may be applicable to the improvement of IAMD within the AOC WS.</p> <p>FY 2013 Base Plans: N/A</p> <p>FY 2013 OCO Plans: N/A</p>					
<p>Title: AOC 10.2</p> <p>Description: AOC 10.2 WS infrastructure modernization and mission capability integration. Development of a robust, open, net-centric infrastructure with a services-oriented architecture.</p> <p>FY 2011 Accomplishments: Conducted full and open competition to select the AOC modernization contractor. Continued risk mitigation and prototype planning activities to support Milestone B decision in late FY12. Participated in joint service investments to demonstrate critical concepts to be adopted within the AOC modernization design.</p> <p>FY 2012 Plans: Perform pre-EMD contract activities in accordance with MDA direction, including a) System Requirement Review (SRR), b) contractor Integration and Test Lab (ITL) to support in-house risk reduction and prototyping, and c) design, prototyping, and Limited Early Install (LEI) activities to support risk reduction and operational feedback. Continue risk mitigation and prototype planning/execution activities to support Milestone B decision in FY13. These prototyping efforts focus on refining and demonstrating key AOC WS modernization design concepts to</p>	27.500	55.016	32.124	-	32.124

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
ensure their technical feasibility and operational employment. Participate in joint service investments to support the overall AOC modernization design. FY 2013 Base Plans: Will complete pre-EMD activities on the modernization contract to obtain MDA approved MS-B, including prototyping and LEI activities to support risk reduction and operational feedback. Will perform EMD contract activities (upon achievement of Milestone B), including the following: a) Critical Design Review, establishing the AOC 10.2 baseline, b) AOC 10.2 development and corresponding documentation, c) capability provider engagement, d) build-up and field the Help Desk (HD) and e) Integration and Test Lab (ITL) operation and management. Will continue risk mitigation and development/test execution activities to support upcoming Milestone C decision in FY15. Will participate in joint service investments to support the overall AOC modernization design and development. FY 2013 OCO Plans: N/A					
Title: Prototyping Description: Prototyping to support Modernization effort to reduce integration risk FY 2011 Accomplishments: Prototyping focused on refining and demonstrating several critical modernization design concepts to ensure their technical feasibility and operational employment. FY 2012 Plans: In support of the Modernization effort to reduce integration risk, multiple prototyping activities are still on-going. FY 2013 Base Plans: In support of the Modernization effort to reduce integration risk, multiple prototyping activities are still on-going. FY 2013 OCO Plans: N/A	6.897	2.700	0.500	-	0.500
Title: Training Description: Training FY 2011 Accomplishments:	4.362	3.559	2.900	-	2.900

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Training included, but not limited to: Type 1, Part Task Trainer, Distributed Mission Operations, Logistics Management Support and Conversion of Courseware to Computer Based Training.</p> <p>FY 2012 Plans: Training to include, but not limited to: Type 1, Part Task Trainer, Distributed Mission Operations, Logistics Management Support and Conversion of Courseware to Computer Based Training.</p> <p>N/A</p> <p>FY 2013 Base Plans: Training will include, but will not limited to: Type 1, Part Task Trainer, Distributed Mission Operations, Logistics Management Support and Conversion of Courseware to Computer Based Training.</p> <p>FY 2013 OCO Plans: N/A</p>					
<p>Title: Test and Evaluation</p> <p>Description: Test and Evaluation</p> <p>FY 2011 Accomplishments: Conducted Developmental Test and Evaluation (DT&E) and Operational Test and Evaluation (OT&E) on the AOC WS baseline through the Responsible Test Organization (RTO) and Operational Test Organization (OTO). Procured needed HW/SW for test articles. Provided operational testing through manpower and/or external operational feeds. Provided test training for operators and ensure Joint Interoperability Command (JITC) interoperability.</p> <p>FY 2012 Plans: Plan and implement comprehensive AOC WS modernization test strategy and corresponding documentation to support future contractor testing, DT&E, and OT&E on the AOC 10.2 baseline.</p> <p>FY 2013 Base Plans: Will implement and perform comprehensive modernization contractor testing (functional testing, security testing, etc.), DT&E, and OT&E on the AOC 10.2 baseline. Efforts will include test planning, conducting tests, documentation review and ensuring coordination with the Integrated Test Team (ITT), Responsible Test Organization (RTO) and the Operational Test Agency (OTA).</p> <p>FY 2013 OCO Plans:</p>	2.800	3.433	3.800	-	3.800

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force				DATE: February 2012	
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 Programs (\$ in Millions)					
N/A					
Title: Systems Engineering					
Description: Systems Engineering					
FY 2011 Accomplishments: Systems engineering activities, included: requirements analysis, C2 integration studies, system development support and performance evaluation.					
FY 2012 Plans: System engineering activities include requirements analyses, C2 integration and architecture studies, risk reduction assessments, review of technical documentation (frame architectures, system/subsystem design documents, etc.), prototyping activities and feedback assessments (to include LEI), system design/development, integration & test, performance evaluation (10.2 System Requirements Review, 10.2 Intermediate Design Review, etc.), and technical expertise to support MS B. This effort ensures collaboration between the new modernization contractor and multiple AF, DoD, and commercial providers to allow for successful integration and out-year sustainment.					
FY 2013 Base Plans: System engineering activities will include requirements analyses, C2 integration and architecture studies, risk reduction assessments, review of technical documentation, prototyping activities and feedback assessments (to include LEI), system development, integration & test (System Test and Evaluation, etc.), performance evaluation (10.2 Critical Design Review, etc.), buildup and fielding of the HD, and technical expertise to support MS C. This effort will ensure collaboration between the new modernization contractor and multiple AF, DoD, and commercial providers to allow for successful integration and out-year sustainment.					
FY 2013 OCO Plans: N/A					
Title: Program Management Support					
Description: Program Management Support					
FY 2011 Accomplishments:					
	4.600	4.200	4.000	-	4.000
	7.700	7.650	7.350	-	7.350

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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>
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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Program Support: Government contract oversight, technical expertise and program management office support associated with AOC WS activities. FY 2012 Plans: Program Support: Government contract oversight, technical expertise and program management office support associated with AOC WS activities. FY 2013 Base Plans: Program Support: Government contract oversight, technical expertise and program management office support associated with AOC WS activities. FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	69.863	97.663	50.674	-	50.674

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPAF, PE 0207410F, WSC 834530: <i>Air & Space Operations CTR-WPN SYS</i>	38.321	15.431	33.907	0.000	33.907	38.354	77.735	70.891	70.254	Continuing	Continuing

D. Acquisition Strategy

AOC modernization contract was competitively awarded on 25 Oct 2011, but was delayed due to contract protests. 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.

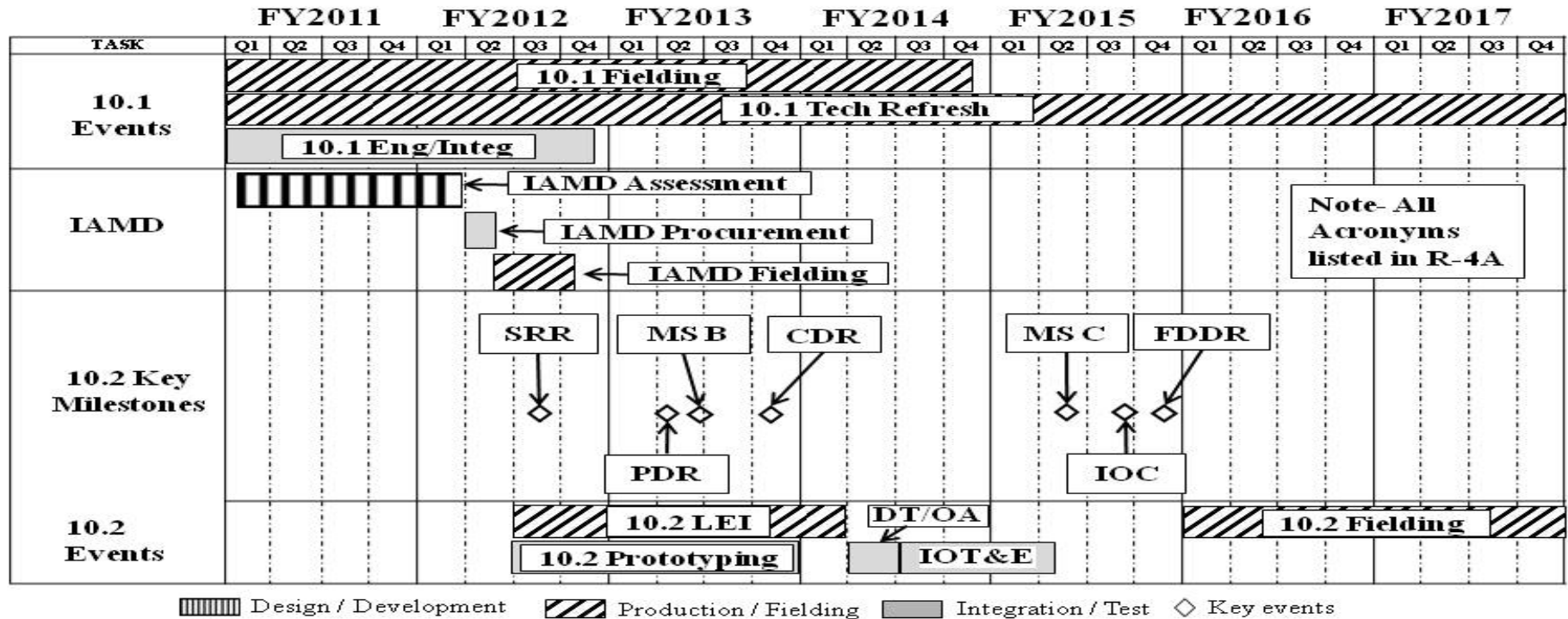
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0207410F: Air and Space Operations
 Center Weapon System (AOC WS)

PROJECT
 675117: Integration Development



AOC WS Integrated Master Schedule



Note- All Acronyms listed in R-4A

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force **DATE:** February 2012

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>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Increment 10.1 Fielding	1	2011	4	2014
Increment 10.1 Tech Refresh	1	2011	4	2017
Increment 10.1 Engineering/Integration	1	2011	4	2012
IAMD Assessment	1	2011	1	2012
IAMD Procurement	2	2012	2	2012
IAMD Fielding	2	2012	4	2012
Increment 10.2 Prototyping	3	2012	4	2013
Increment 10.2 Limited Early Installation	3	2012	1	2014
Increment 10.2 System Requirement Review (SRR)	3	2012	3	2012
Increment 10.2 Delta Preliminary Design Review (PDR)	2	2013	2	2013
Increment 10.2 Milestone B	2	2013	2	2013
Increment 10.2 Critical Design Review (CDR)	4	2013	4	2013
Increment 10.2 Developmental Test/Operational Assessment (DT/OA)	2	2014	3	2014
Increment 10.2 IOT&E Sites 1 and 2	3	2014	2	2015
Increment 10.2 Milestone C	2	2015	2	2015
Increment 10.2 Initial Operational Capability (IOC)	3	2015	3	2015
Increment 10.2 Full Deployment Decision Review (FDDR)	4	2015	4	2015
Increment 10.2 Fielding	1	2016	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675218: <i>Applications Development</i>	13.809	15.894	18.547	-	18.547	8.948	9.667	9.822	10.138	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, 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) that provides air, space and cyber support as presented to the Air Operations Center (AOC) and to other C2 systems. Applications Development activities include but are not limited to the following: 1) Command and Control Air Operations Suite (C2AOS) which develops, matures, fields, and maintains modular net-centric C2 applications for air battle planning, execution, and management functions; 2) Personnel Recovery Command and Control (PRC2) program which develops and delivers tools and services for planning and managing search and rescue efforts, and disseminating related information; and 3) Command and Control Information Services (C2IS) which creates web-enabled information services to expose air operations data 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; defense planning and execution; targeting; weaponing; personnel recovery tasks; other applications and services supporting C2 in the joint environment; 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 air, space, intelligence, surveillance, reconnaissance, and cyber technologies that will improve joint and coalition warfighter interoperability, including participation in NATO and Coalition interoperability exercises, demonstrations, trials, and activities; 5) transitioning existing C2 capabilities to a net-centric environment; and 6) improving operational level C2 of Integrated Air and Missile Defense (IAMD). Applications Development efforts include evaluation and maturation of future air, space, and cyber C2 concepts identified through research, risk reduction, prototyping, current operations, exercises, and demonstrations.

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

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems currently fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: NATO	0.587	0.300	0.300	-	0.300

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force			DATE: February 2012		
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 Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Description: NATO and International Cooperation Research and Development. Efforts to develop air, space, intelligence, surveillance, reconnaissance and cyber Information Exchange Requirements and capabilities between U.S. and NATO / Coalition systems to promote interoperability.</p> <p>FY 2011 Accomplishments: Developed technologies to improve joint and coalition warfighter capability.</p> <p>FY 2012 Plans: Development of technologies to improve joint and coalition warfighter capability.</p> <p>FY 2013 Base Plans: Will continue development of technologies that will improve joint and coalition warfighter capability.</p> <p>FY 2013 OCO Plans: N/A</p>					
<p>Title: C2IS</p> <p>Description: Command and Control Information Services (C2IS) creates web-enabled information services to expose air operations data in TBMCS applications and systems using standardized schemas.</p> <p>FY 2011 Accomplishments: Continued Risk Reduction Efforts (RREs) for Airspace, Air Mission, and Air Request which support the development and refinement of program acquisition strategy.</p> <p>FY 2012 Plans: Continuing development of Airspace prototype; working toward limited fielding in FY13. Competing contract for Air Mission Management capabilities to include but not limited to dynamic planning and replanning, planning for network enabled weapons, and integrated air and missile defense and counter air operations.</p> <p>FY 2013 Base Plans: Will award contract for Air Mission Management capabilities. Will compete and award follow-on contract for the full development of Airspace capability. Will continue with follow-on development and releases of Air Mission Management capabilities, to include but not limited to dynamic planning and replanning (Capability Package</p>	8.071	10.434	8.368	-	8.368

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force				DATE: February 2012	
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 Programs (\$ in Millions)					
-1), planning for network enabled weapons, and integrated air and missile defense (Capability Package -2) and counter air operations.					
FY 2013 OCO Plans: N/A					
Title: PRC2					
Description: Personnel Recovery Command and Control (PRC2) develops and delivers tools and services for planning and managing search and rescue efforts, and disseminating related information.					
FY 2011 Accomplishments: Began development of Personnel Recovery Mission Software (PRMS) version 2.2 which provides mission management capabilities, captures data regarding events, and automates collection of information for incident reports.					
FY 2012 Plans: Continuing development and testing of PRMS version 2.2 which provides mission management capabilities, captures data regarding events, and automates collection of information for incident reports. Planning for development of PRMS version 2.3 which will provide improved mission management capabilities.					
FY 2013 Base Plans: Will complete testing of, and support fielding decision for, PRMS version 2.2 which provides mission management capabilities, captures data regarding events, and automates collection of information for incident reports. Will begin development of PRMS version 2.3 which will provide improved mission management capabilities.					
FY 2013 OCO Plans: N/A					
Title: C2AOS					
Description: Command and Control Air Operations Suite (C2AOS) develops modular net-centric C2 applications for air battle planning, execution and management functions.					
FY 2011 Accomplishments:					
	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
	1.116	2.068	2.170	-	2.170
	4.035	3.092	7.709	-	7.709

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Air Force

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Continued Risk Reduction Efforts (RREs) for Airspace, Air Mission, and Air Request which support the development and refinement of program acquisition strategy. FY 2012 Plans: Continuing development of Airspace prototype; working toward limited fielding in FY13. Competing contract for Air Mission Management capabilities to include but not limited to dynamic planning and replanning, planning for network enabled weapons, and integrated air and missile defense and counter air operations. FY 2013 Base Plans: Will award contract for Air Mission Management capabilities. Will compete and award follow-on contract for the full development of Airspace capability. Will continue with follow-on development and releases of Air Mission Management capabilities, to include dynamic planning and replanning (Capability Package -1), planning for network enabled weapons, and integrated air and missile defense (Capability Package -2) and counter air operations. FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	13.809	15.894	18.547	-	18.547

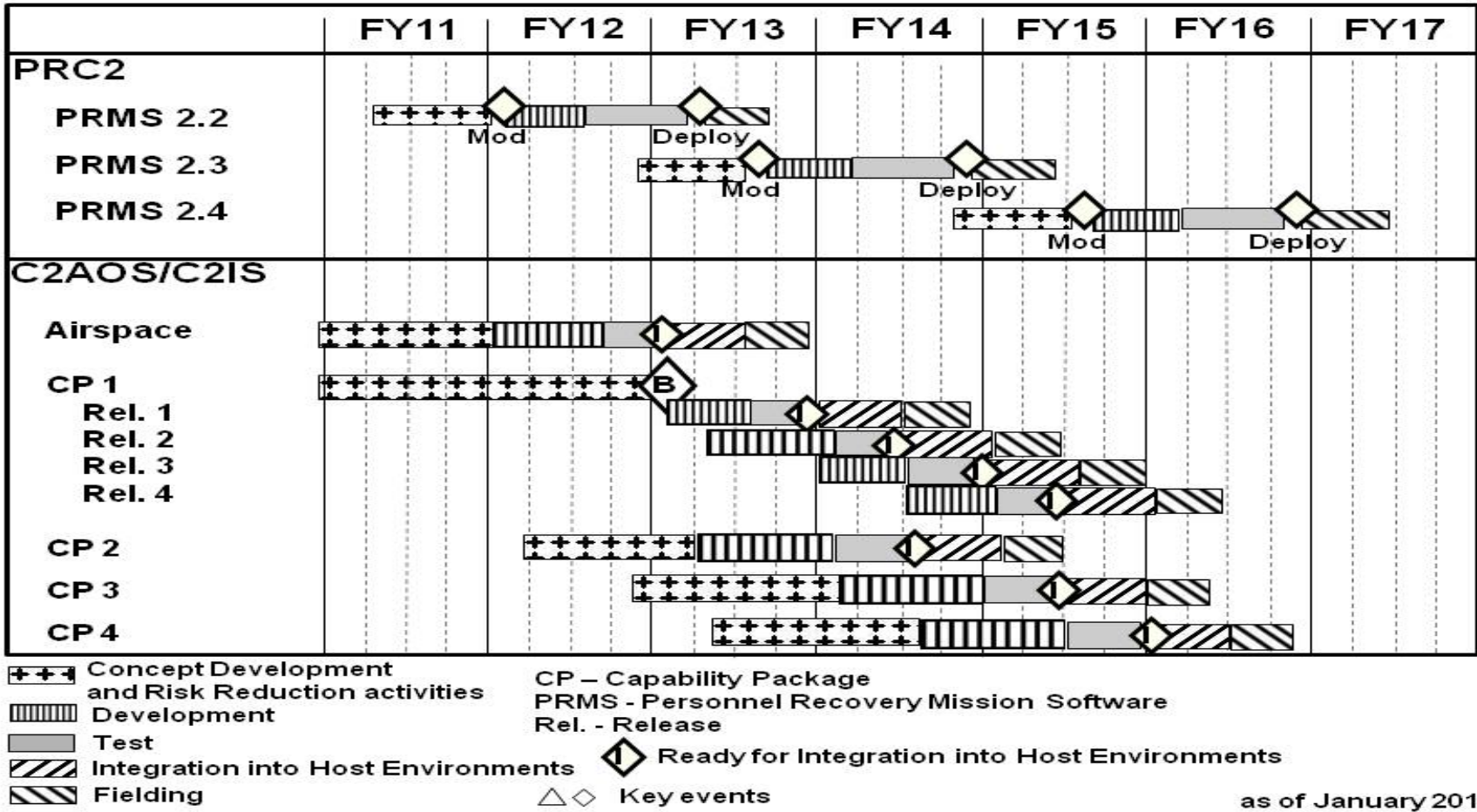
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPAF, PE 0207410F, WSC 834520: <i>Theater Battle Management C2 System</i>	1.118	1.113	1.206	0.000	1.206	1.240	1.261	1.270	1.279	Continuing	Continuing

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force **DATE:** February 2012

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>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
PRMS 2.2 Concept Development and Risk Reduction Activities	2	2011	4	2011
PRMS 2.2 Modification Decision	1	2012	1	2012
PRMS 2.2 Development	1	2012	3	2012
PRMS 2.2 Testing	3	2012	1	2013
PRMS 2.2 Deployment Decision	2	2013	2	2013
PRMS 2.2 Fielding	2	2013	3	2013
PRMS 2.3 Concept Development and Risk Reduction Activities	4	2012	3	2013
PRMS 2.3 Modification Decision	3	2013	3	2013
PRMS 2.3 Development	3	2013	1	2014
PRMS 2.3 Testing	1	2014	4	2014
PRMS 2.3 Deployment Decision	4	2014	4	2014
PRMS 2.3 Fielding	4	2014	2	2015
PRMS 2.4 Concept Development and Risk Reduction Activities	4	2014	3	2015
PRMS 2.4 Modification Decision	3	2015	3	2015
PRMS 2.4 Development	3	2015	1	2016
PRMS 2.4 Testing	1	2016	4	2016
PRMS 2.4 Deployment Decision	4	2016	4	2016
PRMS 2.4 Fielding	4	2016	2	2017
Airspace Concept Development and Risk Reduction Activities	1	2011	1	2012
Airspace Development	1	2012	3	2012
Airspace Testing	3	2012	1	2013
Airspace Ready for Integration into Host Environments	1	2013	1	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force **DATE:** February 2012

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>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Airspace Integration into Host Environments	1	2013	3	2013
Airspace Fielding	3	2013	4	2013
C2AOS and C2IS Concept Development and Risk Reduction Activities	1	2011	1	2013
C2AOS and C2IS Milestone B	1	2013	1	2013
Air Mission Capability Package (CP) 1 Release (Rel) 1 Development	1	2013	3	2013
Air Mission CP 1 Rel 1 Testing	3	2013	4	2013
Air Mission CP 1 Rel 1 Ready for Integration into Host Environments	4	2013	4	2013
Air Mission CP 1 Rel 1 Integration into Host Environments	1	2014	2	2014
Air Mission CP 1 Rel 1 Fielding	3	2014	4	2014
Air Mission CP 1 Rel 2 Development	2	2013	1	2014
Air Mission CP 1 Rel 2 Testing	1	2014	2	2014
Air Mission CP 1 Rel 2 Ready for Integration into Host Environments	2	2014	2	2014
Air Mission CP 1 Rel 2 Integration into Host Environments	3	2014	1	2015
Air Mission CP 1 Rel 2 Fielding	1	2015	2	2015
Air Mission CP 1 Rel 3 Development	1	2014	2	2014
Air Mission CP 1 Rel 3 Testing	3	2014	4	2014
Air Mission CP 1 Rel 3 Ready for Integration into Host Environments	4	2014	4	2014
Air Mission CP 1 Rel 3 Integration into Host Environments	1	2015	3	2015
Air Mission CP 1 Rel 3 Fielding	3	2015	4	2015
Air Mission CP 1 Rel 4 Development	3	2014	1	2015
Air Mission CP 1 Rel 4 Testing	1	2015	2	2015
Air Mission CP 1 Rel 4 Ready for Integration into Host Environments	2	2015	2	2015
Air Mission CP 1 Rel 4 Integration into Host Environments	3	2015	1	2016
Air Mission CP 1 Rel 4 Fielding	1	2016	2	2016
Air Mission CP 2 Concept Development and Risk Reduction Activities	1	2012	1	2013

PE 0207410F: *Air and Space Operations Center Weapon System*
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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force **DATE:** February 2012

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>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Air Mission CP 2 Development	2	2013	1	2014
Air Mission CP 2 Testing	1	2014	3	2014
Air Mission CP 2 Ready for Integration into Host Environments	3	2014	3	2014
Air Mission CP 2 Integration into Host Environments	3	2014	1	2015
Air Mission CP 2 Fielding	1	2015	2	2015
Air Mission CP 3 Concept Development and Risk Reduction Activities	4	2012	1	2014
Air Mission CP 3 Development	1	2014	1	2015
Air Mission CP 3 Testing	1	2015	2	2015
Air Mission CP 3 Ready for Integration into Host Environments	3	2015	3	2015
Air Mission CP 3 Integration into Host Environments	3	2015	4	2015
Air Mission CP 3 Fielding	1	2016	2	2016
Air Mission CP 4 Concept Development and Risk Reduction Activities	2	2013	3	2014
Air Mission CP 4 Development	3	2014	2	2015
Air Mission CP 4 Testing	3	2015	4	2015
Air Mission CP 4 Ready for Integration into Host Environments	1	2016	1	2016
Air Mission CP 4 Integration into Host Environments	1	2016	2	2016
Air Mission CP 4 Fielding	3	2016	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675220: <i>Unit Level</i>	6.195	7.113	7.094	-	7.094	7.318	7.458	7.515	7.979	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 / Unit Command and Control (UL/UC2) program develops, integrates, fields, and maintains an evolving sequence of increasing software capabilities that support the execution of the air battle plan and the air tasking order message received from the Air Operations Center (AOC). UL/UC2 operations software systems provide both the scheduling and mission preparation activities at the wing, group and squadron level, and the capabilities to report and track the success of each mission and influence decisions on future air battle planning. UL/UC2 intelligence capabilities ensure detailed threat, target and imagery information are made available to mission commanders and aircrews planning current flight operations. At many bases, UL/UC2 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, as well as future program planning.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems currently fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Software Development	3.731	4.466	4.320	-	4.320
Description: UL/UC2 operations and intelligence capabilities development/integration.					
FY 2011 Accomplishments: Tested UL/UC2 Ops Increment 1. Developed UL/UC2 Ops Increment 2 which provides new emergency response and incident management capabilities; new external interfaces to eliminate duplicate data entry; expanded situation awareness portlets; and improved tasking, management, and execution monitoring. Modernized the host hardware and operating system facilitates hosting the UL/UC2 in a regional virtual server environment.					
FY 2012 Plans: Completing development and starting testing of UL/UC2 Ops Increment 2. Planning UC2 Version 1.0 which provides migration of UL/UC2 into a service oriented infrastructure capable of meeting the Net-Ready key performance parameter; implements elements of the Installation Control Center (ICC) Enabling Concept,					

PE 0207410F: *Air and Space Operations Center Weapon System*
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force			DATE: February 2012		
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 Programs (\$ in Millions)					
combining unit level intelligence, operations and other functional areas into a single installation wide C2 capability; and continues to add external interfaces to eliminate duplicate data entry.					
FY 2013 Base Plans: Will complete testing of UL/UC2 Ops Increment 2. Will continue planning activities for UC2 Version 1.0 which will provide migration of UL/UC2 into a service oriented infrastructure capable of meeting the Net-Ready key performance parameter, will implement elements of the Installation Control Center (ICC) Enabling Concept, combining unit level intelligence, operations and other functional areas into a single installation wide C2 capability. Will write the UC2 Version 1.0 System Requirements Document and program office cost estimate.					
FY 2013 OCO Plans: N/A					
Title: Testing and Test Support					
Description: Testing and test support activities					
FY 2011 Accomplishments: Conducted testing and test support activities for UL/UC2 Ops Increments 1 and 2.					
FY 2012 Plans: Testing and test support activities for UL/UC2 Ops Increment 2.					
FY 2013 Base Plans: Will complete testing and test support activities for UL/UC2 Ops Increment 2.					
FY 2013 OCO Plans: N/A					
Title: System Engineering					
Description: System Engineering					
FY 2011 Accomplishments: Conducted system engineering and technical support, including requirements analysis, for UL/UC2 Ops Increments 2.					
FY 2012 Plans:					
	0.740	0.776	0.714	-	0.714
	0.640	0.710	0.885	-	0.885

PE 0207410F: *Air and Space Operations Center Weapon System*
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
System engineering and technical support, including requirements analysis, for UL/UC2 Ops Increment 2 and UC2 Version 1.0. FY 2013 Base Plans: Will perform system engineering and technical support, including requirements analysis, for UC2 Version 1.0. FY 2013 OCO Plans: N/A					
Title: Program Support and Travel Description: Program support and travel FY 2011 Accomplishments: Conducted program support and travel for UL/UC2 Ops efforts. FY 2012 Plans: Program support and travel for UL/UC2 Ops and UC2 efforts. FY 2013 Base Plans: Will perform program support and travel for UL/UC2 Ops and UC2 efforts. FY 2013 OCO Plans: N/A	1.084	1.161	1.175	-	1.175
Accomplishments/Planned Programs Subtotals	6.195	7.113	7.094	-	7.094

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• OPAF, PE 0207410F, WSC 834520: <i>Theater Battle Management C2 System</i>	4.753	4.031	3.878	0.000	3.878	3.874	3.894	4.023	4.217	Continuing	Continuing

D. Acquisition Strategy

Projects will be awarded following full and open competition and will use an evolutionary acquisition strategy based on incremental development.

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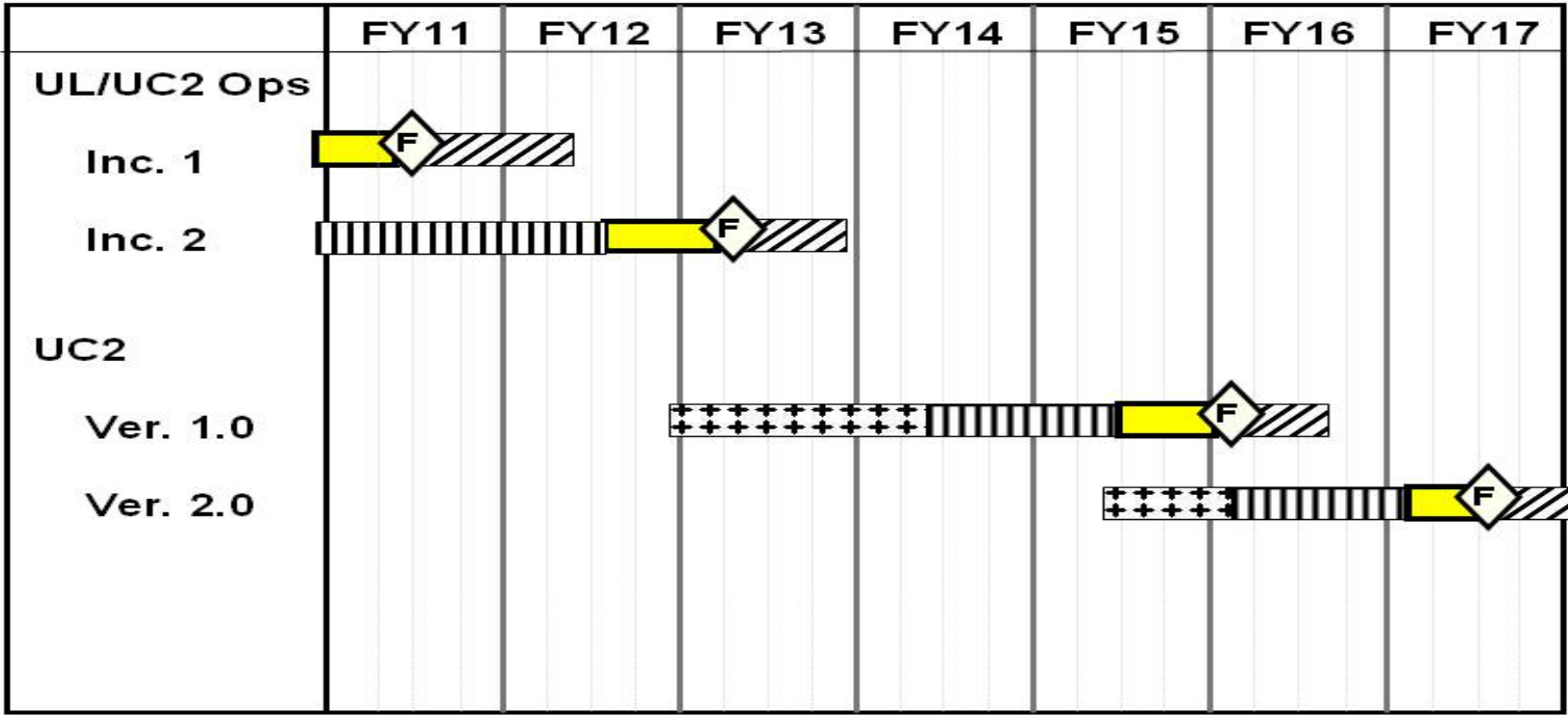
Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207410F: <i>Air and Space Operations</i> <i>Center Weapon System (AOC WS)</i>	PROJECT 675220: <i>Unit Level</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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>



- Planning**
- Development**
- Test**
- Fielding decision**
- Fielding**

- Inc. – Increment**
- UC2 – Unit Command and Control**
- UL - Unit Level**
- Ver. - Version**
- Keyevents**

as of January 2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
UL/UC2 Ops Increment 1 Testing	1	2011	2	2011
UL/UC2 Ops Increment 1 Fielding Decision	2	2011	2	2011
UL/UC2 Ops Increment 1 Fielding	2	2011	2	2012
UL/UC2 Ops Increment 2 Development	1	2011	3	2012
UL/UC2 Ops Increment 2 Testing	3	2012	1	2013
UL/UC2 Ops Increment 2 Fielding Decision	2	2013	2	2013
UL/UC2 Ops Increment 2 Fielding	2	2013	4	2013
UC2 Version 1.0 Planning	4	2012	2	2014
UC2 Version 1.0 Development	2	2014	2	2015
UC2 Version 1.0 Testing	3	2015	4	2015
UC2 Version 1.0 Fielding Decision	1	2016	1	2016
UC2 Version 1.0 Fielding	1	2016	3	2016
UC2 Version 2.0 Planning	2	2015	1	2016
UC2 Version 2.0 Development	1	2016	1	2017
UC2 Version 2.0 Testing	1	2017	2	2017
UC2 Version 2.0 Fielding Decision	3	2017	3	2017
UC2 Version 2.0 Fielding	3	2017	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>Modular Control System</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	52.120	3.387	8.653	-	8.653	7.029	0.562	0.578	0.586	Continuing	Continuing
67485L: <i>Theater Air Control System Imp (TACSI)</i>	9.363	3.387	8.653	-	8.653	7.029	0.562	0.578	0.586	Continuing	Continuing
675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>	42.757	-	-	-	-	-	-	-	-	Continuing	Continuing

Note
In FY 2012, Project 5294, Theater Control System Improvement-Radar (TACSI-R) efforts transferred to PE 0604283F, Battle Management Command & Control (BMC2) Sensor Development, Project 6002, Three Dimensional Expeditionary Long Range Radar in order to provide this pre-Major Defense Acquisition Program its own Program Element.

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 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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>Modular Control System</i>
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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.

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

This program is in Budget Activity 7, Operational System Development, these budget activities include development efforts to upgrade systems currently fielded or has approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	58.313	3.954	7.212	-	7.212
Current President's Budget	52.120	3.387	8.653	-	8.653
Total Adjustments	-6.193	-0.567	1.441	-	1.441
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.055	-			
• SBIR/STTR Transfer	-3.618	-			
• Other Adjustments	-1.520	-0.567	1.441	-	1.441

Change Summary Explanation

Funding change in FY13 is due to increase for C2 engine modification, increase for inflation rates-nonpay, nonfuel, and decrease due to termination of TPS-75 Mode 5 for Control and Reporting Center.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>Modular Control System</i>	PROJECT 67485L: <i>Theater Air Control System Imp (TACSI)</i>
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COST (\$ in Millions)	FY 2011		FY 2012		FY 2013		FY 2014		FY 2015		FY 2016		FY 2017		Cost To Complete	Total Cost
					Base	OCO	Total									
67485L: <i>Theater Air Control System Imp (TACSI)</i>	9.363	3.387	8.653	-	8.653	7.029	0.562	0.578	0.586	Continuing	Continuing					
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0	0	0	0			

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 NEW DAWN, 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. 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), and C2 Engine Upgrade are being developed for the CRC. Beginning in FY13, 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. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Continue upgrades to CRC	7.664	2.042	7.202	-	7.202
Description: Continue upgrades to CRC to include advanced planning, Modular Control System (MCS) upgrades, enhanced radio/radar/data link remoting, integrating upgrades into CRC; C2 Engine Upgrade; and AN/TPS-75 sensor replacement/upgrade.					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force			DATE: February 2012			
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>Modular Control System</i>	PROJECT 67485L: <i>Theater Air Control System Imp (TACSI)</i>				
B. Accomplishments/Planned Programs (\$ in Millions)						
		FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p><i>FY 2011 Accomplishments:</i> Performed development & delivery of software upgrades to RRSVS to include designs for the next increment of RRSVS & redesign of the remote control terminal and server software to operate on a Linux based operating system; performed development & delivery of AN/TYQ-23 V5 SLEP Prototype and redline drawing package.</p> <p><i>FY 2012 Plans:</i> Performing development & delivery of software upgrades to RRSVS to include, but not limited to, develop designs for next increment of RRSVS; and will begin initial development of C2 Engine Upgrade.</p> <p><i>FY 2013 Base Plans:</i> Will perform development & delivery of software upgrades to RRSVS to include, but not limited to, develop designs for next increment of RRSVS; and will begin initial development of C2 Engine Upgrade.</p> <p><i>FY 2013 OCO Plans:</i> N/A</p>						
<p><i>Title:</i> Test Planning</p> <p><i>Description:</i> Continue test and evaluation support</p>		0.944	0.485	0.900	-	0.900
<p><i>FY 2011 Accomplishments:</i> Performed test and evaluation, including prototype and feasibility testing of changes associated with new radios and transport technology upgrades for RRSVS; Performed test activities for AN/TYQ-23 V5 SLEP Prototype.</p> <p><i>FY 2012 Plans:</i> Performing test and evaluation to include, but not be limited to, testing changes of new radios and transport technology upgrades for RRSVS; test activities for radio interface with TYQ-23, and AN/TYQ-23 V5 SLEP.</p> <p><i>FY 2013 Base Plans:</i> Will perform test and evaluation to include, but not limited to, prototype and feasibility testing of changes associated with new radios and transport technology upgrades for RRSVS, and C2 Engine Upgrade.</p> <p><i>FY 2013 OCO Plans:</i> N/A</p>						
<p><i>Title:</i> Sys Eng/Tech Support</p> <p><i>Description:</i> Continue Systems Engineering/Technical Support</p>		0.672	0.790	0.504	-	0.504

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>Modular Control System</i>	PROJECT 67485L: <i>Theater Air Control System Imp (TACSI)</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p><i>FY 2011 Accomplishments:</i> Performed Systems Engineering/Technical Support.</p> <p><i>FY 2012 Plans:</i> Performing Systems Engineering/Technical Support.</p> <p><i>FY 2013 Base Plans:</i> Will perform Systems Engineering/Technical Support.</p> <p><i>FY 2013 OCO Plans:</i> N/A</p>					
<p><i>Title:</i> Program Management and Administration</p> <p><i>Description:</i> Continue Management Services</p> <p><i>FY 2011 Accomplishments:</i> Continued Management Services</p> <p><i>FY 2012 Plans:</i> Continuing Management Services</p> <p><i>FY 2013 Base Plans:</i> Will continue Management Services</p> <p><i>FY 2013 OCO Plans:</i> N/A</p>	0.083	0.070	0.047	-	0.047
Accomplishments/Planned Programs Subtotals	9.363	3.387	8.653	-	8.653

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0207412F: <i>Control and Reporting Center, (OPAF)</i>	20.118	22.740	23.483	0.000	23.483	30.585	33.390	17.375	10.466	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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>Modular Control System</i>	PROJECT 67485L: <i>Theater Air Control System Imp (TACSI)</i>

D. Acquisition Strategy

The CRC program is utilizing evolutionary development to modernize and further advance current and future battlespace awareness and tactical BMC2 capabilities. A variety of contract types will be utilized depending on type of effort. Contracting strategy will include but is not limited to open competition, sole source contracts, and interdepartmental purchase requests.

E. Performance Metrics

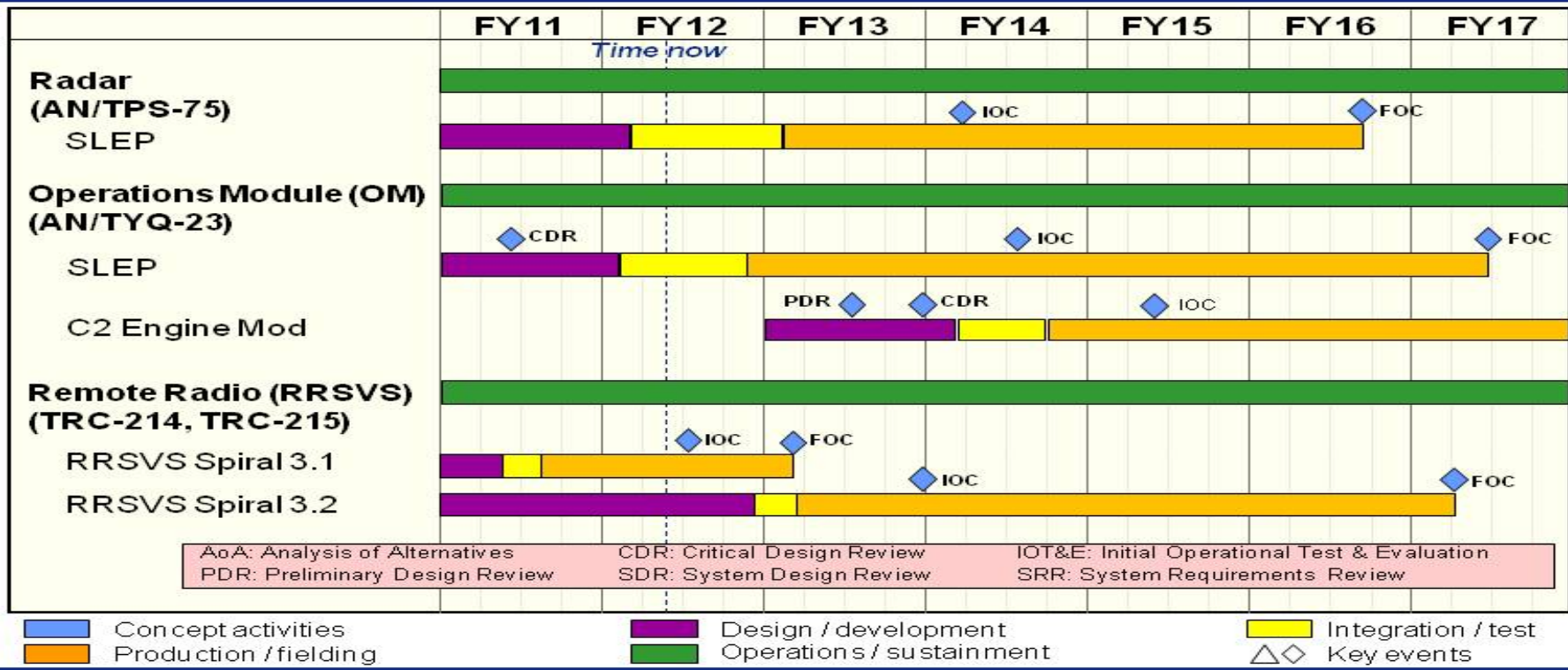
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207412F: Modular Control System	PROJECT 67485L: Theater Air Control System Imp (TACSI)



CRC Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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>Modular Control System</i>	PROJECT 67485L: <i>Theater Air Control System Imp (TACSI)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
TPS-75 SLEP Design/Development	1	2011	1	2012
TPS-75 SLEP Developmental/Operational Testing	1	2012	1	2013
TPS-75 SLEP Production/Fielding	1	2013	3	2016
Remote Radio Spiral 3.1 Design/Development/Test	1	2011	2	2011
Remote Radio Spiral 3.1 Updates Fielding	4	2011	4	2012
Remote Radio Spiral 3.2 Concept/Design/Development	1	2011	3	2012
Remote Radio Spiral 3.2 Developmental Testing	4	2012	4	2012
Remote Radio Spiral 3.2 Fielding	3	2013	4	2016
OM v(5) SLEP PDR	1	2011	1	2011
OM v(5) SLEP CDR	2	2011	2	2011
OM v(5) SLEP Developmental/Operational Testing	1	2012	2	2012
C2 Engine Upgrade Design/Development	2	2012	2	2014
C2 Engine Upgrade Developmental/Operational Testing	1	2014	1	2015
C2 Engine Upgrade Production/Fielding	1	2015	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>Modular Control System</i>	PROJECT 675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>	42.757	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2012, Project 5294, Theater Control System Improvement-Radar (TACSI-R) efforts transferred to PE 0604283F, Battle Management Command & Control (BMC2) Sensor Development, Project 6002, Three Dimensional Expeditionary Long Range Radar in order to provide this pre-Major Defense Acquisition Program its own Program Element.

A. Mission Description and Budget Item Justification

The Three-Dimensional Expeditionary Long-Range Radar (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.

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 Control and Reporting Center (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.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Technology Development (TD) and Program Definition and Risk Reduction (PDRR)	35.445	-	-	-	-
Description: Technology development (TD) phase and Program Definition and Risk Reduction (PDRR) efforts associated with delivering a new long-range, ground-based sensor.					
FY 2011 Accomplishments: Continued the Technology Development (TD) Phase and risk reduction efforts of 3DELRR. Activities included demonstration of Critical Technology Elements (CTEs) to Technology Readiness Level (TRL) 6, design options analyses, requirements refinement, identification and analyses of existing and emerging system threats,					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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>Modular Control System</i>	PROJECT 675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
(including cyber warfare). Results were captured in appropriate technical requirements, life-cycle cost estimate revision, test planning, and Milestone B documentation development. Planned for PDRR activities including, but not limited to, a full and open competition, design development, development of system functional modeling and simulation, and execution of the program protection plan. FY 2012 Plans: N/A FY 2013 Base Plans: N/A FY 2013 OCO Plans: N/A					
Title: Test and Evaluation Support Description: Continue Program Support (i.e., travel, supplies, equipment, miscellaneous) FY 2011 Accomplishments: Conducted test and evaluation to include, but not limited to, development of the test strategy and test-related documentation, planning of future developmental test and evaluation events, information assurance planning, and participation in technical and test-related working groups. FY 2012 Plans: N/A FY 2013 Base Plans: N/A FY 2013 OCO Plans: N/A	0.241	-	-	-	-
Title: Systems Engineering/Technical Support Description: Continue Systems Engineering/Technical Support FY 2011 Accomplishments: Continued Systems Engineering/Technical Support FY 2012 Plans:	6.576	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>Modular Control System</i>	PROJECT 675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
N/A					
FY 2013 Base Plans: N/A					
FY 2013 OCO Plans: N/A					
Title: Management Services Description: Program Management and Administration FY 2011 Accomplishments: Provided management and administrative services support. FY 2012 Plans: N/A FY 2013 Base Plans: N/A FY 2013 OCO Plans: N/A	0.495	-	-	-	-
Accomplishments/Planned Programs Subtotals	42.757	-	-	-	-

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• PE 0604283F: <i>Battle Management Command & Control</i>	11.939	30.362	114.417	0.000	114.417	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0207455F: <i>Three Dimensional Expeditionary Long Range Radar</i>	0.000	0.000	0.000	0.000	0.000	70.160	69.533	89.985	54.000	Continuing	Continuing
• WSC 833040: <i>Theater Air Control System Improvement</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	66.644	Continuing	Continuing

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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>Modular Control System</i>	PROJECT 675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>

D. Acquisition Strategy

PE 0604283F, Three-Dimensional Expeditionary Long-Range Radar (3DELRR), is providing full capability via full and open competition 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>Modular Control System</i>	PROJECT 675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>



3DELRR Schedule



Three-Dimensional Expeditionary Long-Range Radar (3DELRR)	FY11	FY12	FY13	FY14	FY15	FY16	FY17
		Note: Starting in FY12, 3DELRR moves to PE 0604283F, BPAC 646002					
Risk Reduction Activities							
System Development	<div style="border: 1px dashed black; width: 30px; height: 20px; margin: 5px;"></div> <p style="font-size: small; margin: 0;">TD Phase (Competitive Prototyping)</p>						
	<div style="color: blue; font-size: small; margin: 0;">◆ Cap Demo B</div>						

- | | | |
|--|--|---|
| Concept activities | Design / development | Integration / test |
| Production / fielding | Operations / sustainment | △◇ Key events |

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force **DATE:** February 2012

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>Modular Control System</i>	PROJECT 675294: <i>Theater Air Control System Improvement - Radar (TACSI-R)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
3DELRR On-going Risk Reduction	1	2011	4	2011
3DELRR On-going System Development	1	2011	4	2011
3DELRR TD Phase Capability Demo B	1	2011	1	2011

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	201.838	117.880	65.200	-	65.200	192.562	173.544	66.079	57.349	Continuing	Continuing
67411L: <i>Airborne Warning & Control System (AWACS)</i>	201.838	117.880	65.200	-	65.200	192.562	173.544	66.079	57.349	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

1. Totals include funding for Program Resources Collection Process (PRCP) Program Number, 277, AWACS Upgrade (for Block 40/45 Upgrade).

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.

This program element funds three areas in support of the AWACS program: 1. AWACS Modernization, 2. AWACS Infrastructure and Support Systems, and 3. Material Solutions Development and Analysis. Each of the three areas includes studies and analysis to support both current planning and execution, as well as future program planning.

1. AWACS Modernization (RDT&E, AF):

a. 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-system, Ethernet-based architecture. The upgrade will also update the ground support infrastructure including training systems.

b. 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 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. NGIFF developed and integrated a basic Mode 5 capability on Block 30/35 starting in FY09 and began developing a full Mode 5 on Block 40/45 in FY11. 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.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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c. 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 Global Positioning System (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, 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 became unsustainable beginning in 2010 is included in the DRAGON program. The Engineering and Manufacturing Development (EMD) phase of DRAGON is being executed cooperatively between the US and NATO.

d. The Flight Performance Software (FPS) program automates calculations currently performed manually by the pilot and flight engineer in accordance with the E-3B and C flight manual. Phase I, automates the Takeoff and Landing (TOLD) calculations; Phase II automates the high speed calculation. Automated calculations, using the original source data used to create the flight manual charts increases safety, improves on time departure/arrival, improves crew efficiency, and reduces tanker support.

2. AWACS Infrastructure and Support Systems (RDT&E, AF): 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.

a. Test System-3/AWACS Development Integration Test Support (ADITS): The E-3 AWACS Developmental Test and Evaluation (DT&E) aircraft, Test System 3 (TS-3, tail number 73-1674) is a government owned/contractor managed, maintained and operated system level DT&E asset. Together, TS-3 and ADITS provide test-ready assets to support AWACS modernization, with already imbedded test points to support sub-system and system level developmental testing, per Boeing's TS-3 design specifications. This level of DT&E testing supports both advanced and sustainment projects, which allow AWACS to participate in live-fly exercises (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 France, Saudi Arabia, United Kingdom, Japan, and NATO AEW&C efforts.

TS-3, one of the first AWACS production aircraft, is qualified to Boeing manufacturer design specifications, unlike fleet aircraft, which are qualified to technical orders. In FY12, the Air Force divested TS-3. Beginning in FY13, the ADITS activity will be covered in the Training, Support, and Infrastructure (TSI) effort.

b. 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, trainer/simulator integration and concurrency, as well as the Avionics Integration Laboratory (AIL). The E-3 Radar Systems Integration Lab/Software Development Facility (SIL/SDF) is maintained, operated, and supported by contract 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 requirements definition is necessary to ensure trainers and

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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simulators are kept current with the AWACS baseline. Associate contractor agreements are used to integrate the planning and execution between the prime integrator and training service providers. In FY13, TSI will continue the remaining ADITS activity which includes the Avionics Integration Laboratory.

3. Material Solutions Development & Analysis (RDT&E, AF): These efforts look toward the future by investigating enhanced capabilities and exploring new mission areas through C2ISR System Development, while advancing the capabilities of the current weapon system through Support The War Fighter (STWF).

a. 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 but also includes developing an E-3 Modernization & Sustainment Roadmap that projects user capability needs, as well as material solutions for the user needs. Examples of supporting activities include, but are not limited to:

(1) 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, C2 Constellation Concept of Operations (CONOPS), and Air Force CONOPS.

(2) Improving sensors and identifying new sensor technologies and netted sensor architectures to meet evolving threats; communications including development of communication roadmaps and assessing related technologies e.g.: all forms of Internet Protocol (IP) 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., JEFX and EC).

(3) 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.

(4) Exploring concepts, investigating emerging and developing technologies, 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.

b. 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: Designing, developing, and modernizing equipment and systems to ensure AWACS can respond to urgent wartime/contingency acquisition requirements (e.g. Urgent Operational Needs (UONs) and Wartime Urgent & Compelling Needs (WUCNs)). 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:

(1) 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.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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(2) Solve DMS logistics problems.

(3) Insert new technologies with the aim of reducing maintenance man-hours along with programmed depot maintenance (PDM) improvements to increase aircraft availability.

c. Electronic Protection (EP): In FY13 EP is a new effort. The E-3 interim radar upgrade will design and develop capability improvements to the AWACS radar that provide enhanced war fighter capability in a subset of modes identified under the Radar Modernization Program (RMP) study. The enhanced capability will be available to the airborne radar technician and to the AWACS operators.

Budget Justification: This program is in Budget Activity 7, Operational Systems Development, these budget activities include development efforts to upgrade systems currently fielded or has approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	239.755	135.961	150.120	-	150.120
Current President's Budget	201.838	117.880	65.200	-	65.200
Total Adjustments	-37.917	-18.081	-84.920	-	-84.920
• Congressional General Reductions	-	-0.781			
• Congressional Directed Reductions	-	-17.300			
• Congressional Rescissions	-19.700	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-6.571	-			
• Other Adjustments	-11.646	-	-84.920	-	-84.920

Change Summary Explanation

1. In FY11, Other Adjustments totaling \$11.646M include Congressional General Reductions (\$1.646M) and Congressional Directed Reductions (\$10M).
2. The decrease in the Current President's Budget from FY 2011 to FY 2012 is due to Block 40/45 EMD efforts ramping down
3. The decrease between the Previous President's Budget and the Current President's Budget in FY13 is primarily due to re-phasing funds due to slow expenditures in prior years (-\$76.8M); no longer converting an inventory aircraft to a test configuration (-\$25M); no longer beginning a Net Centric Capability program (-\$2.1M); beginning an Electronic Protection project (+\$18.7M), and a small inflation adjustment.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: AWACS Modernization	136.162	94.173	36.484	-	36.484

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Description: Focuses on development activities associated with modification efforts.</p> <p>FY 2011 Accomplishments: Block 40/45: Began Mission Crew Training Set (MCTS), initial Avionics Integration Support Facility (AISF) Upgrade and Mission Computing Maintenance Trainer (MCMT) development efforts. Finished Pre-Prod activities to synchronize with first aircraft install. Completed ground infrastructure and training plans. Continued development of DLI improvements for seamless transition from Block 30/35. Continued to administer DMS and COTS hardware tech refresh for future aircraft buys.</p> <p>NGIFF: Conducted Block 30/35 flight test and DT/OT. Reviewed requirements, interfaces, and manufacturing plans for UPX-40. Conducted Block 40/45 software functionality and system verification on Mission Computing. Completed Installation and Checkout of hardware equipment on Block 30/35 NGIFF. Began software system integration. Began Demonstrating software and hardware interfaces in Lab on Block 40/45 NGIFF.</p> <p>DRAGON: Continued Risk Reduction efforts with the assessment of the DRAGON design on all system-level legacy requirements and mitigating Explosive Atmosphere (EA) risks. Awarded EMD contract in July. Began development activities for System Requirements Review and Integrated Baseline Review.</p> <p>FY 2012 Plans: Block 40/45: Continue development of MCTS (to include beginning development of the Airborne Training Set (ATS) portion of the MCTS), initial AISF Upgrade, and MCMT. Continue development of DLI improvements for seamless transition from Block 30/35. Continue to administer DMS and COTS hardware tech refresh for future aircraft buys.</p> <p>NGIFF: Certify software functionality and complete system verification on mission computing for IFF on Block 40/45. Begin software system integration in lab environment. Review requirements, interfaces, and manufacturing plans. Conduct production design decision and begin manufacturing plans. Certify software functionality and complete system verification on Mission Computing. Ensure time compliance tech orders (TCTOs) are available.</p> <p>DRAGON: Complete System Requirements Review and Integrated Baseline Review. Complete government review of major subcontractor's Preliminary Design Reviews (PDR) and the prime contractor's own PDR. Complete a Post PDR Assessment Review with the Milestone Decision Authority.</p>					

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
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<p>FPS: Begin Phase II automation of High Speed TOLD calculations.</p> <p>FY 2013 Base Plans: Block 40/45: Will continue development of MCTS (to include the ATS) and MCMT. Will finish initial AISF Upgrade. Will continue development of DLI improvements for seamless transition from Block 30/35. Will continue to administer DMS and COTS hardware tech refresh for future aircraft buys.</p> <p>NGIFF: Will continue Block 30/35 deficiency resolution from DT/OT event. Will continue Block 40/45 EMD. Will complete and test software build 2.0. Will complete UPX-40 Box 40/45 Design Verification Test.</p> <p>DRAGON: Will continue DRAGON EMD. Will complete government review of major subcontractor's Critical Design Reviews (CDR) and the prime contractor's own CDR.</p> <p>FY 2013 OCO Plans: N/A</p>					
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<p>Title: AWACS Infrastructure and Systems Support</p> <p>Description: Focuses on system engineering to synchronize all 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 test aircraft development and support.</p> <p>FY 2011 Accomplishments: TSI: Supported DRAGON lab integration efforts. Continued to mature emerging technologies, net-centric operations and next generation C2/BM activities. Provided system lab support to Block 40/45, Next Generation IFF, NCC, and Japan and RSAF radar improvement integration and test. Supported AEW&C OSD mandated interoperability testing and mandatory E-3 Operational, Safety, Suitability and Effectiveness program. Provided radar system labs in support of U.S., and Foreign Military Sales radar improvement programs/sustainment efforts--major activities include Japan and RSAF Radar improvement activities.</p> <p>TS-3/ADITS: Began TS-3 Programmed Depot Maintenance. Supported the E-3 AWACS Developmental Test and Evaluation Avionics Integration Laboratory (AIL).</p> <p>FY 2012 Plans:</p>	44.414	13.387	5.300	-	5.300
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UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
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TSI: Support Network Enabled Enclave (NEE) lab integration efforts. Continue to mature emerging technologies, net-centric operations and next generation C2/BM activities. Provide system lab support to Block 40/45, Next Generation IFF, NCC, RMP, and Japan and RSAF radar improvement integration and test. Support AEW&C OSD mandated interoperability testing and E-3 Operational, Safety, Suitability and Effectiveness program. Provide radar system labs in support of U.S., and Foreign Military Sales radar improvement programs/ sustainment efforts--major activities include Japan and RSAF Radar improvement activities.					
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TS-3/ADITS: Divest TS-3. Continue support of the E-3 AWACS Developmental Test and Evaluation Avionics Integration Laboratory (AIL).					
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<p>FY 2013 Base Plans: TSI: Will support Network Enabled Enclave (NEE) lab integration efforts that continue to mature emerging technologies. Will provide system lab support to Block 40/45, Next Generation IFF, TNC, SADL, RMP, Japan and RSAF radar improvement integration and test. Will support AEW&C OSD mandated interoperability testing and support mandatory E-3 Operational, Safety, and Suitability and Effectiveness program. Will support the E-3 AWACS Developmental Test and Evaluation Avionics Integration Laboratory (AIL).</p>					
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<p>FY 2013 OCO Plans: N/A</p>					
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<p>Title: Material Solutions Development and Analysis</p>	21.262	10.320	23.416	-	23.416
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<p>Description: Focuses on emerging requirements by investigating enhanced capabilities and exploring new mission areas.</p>					
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<p>FY 2011 Accomplishments: C2ISR: Conducted engineering/integration study to determine required modifications and associated costs to upgrade the radar system with more robust signal processing prior to mission computing, and incorporating classified Electronic Protection measures. Executed key elements of advanced programs including: International Cooperative Research & Development (ICR&D), NCC Requirements Definition (JCIDS related), NCCT Flight Test and data-transfer over Iridium, and DSMI-contracted risk reduction tasks.</p>					
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STWF: Continued closing Link 16 gap between Block 30/35 and Block 40/45. Investigated impacts of crypto modification projects on the E-3. Continued to address emerging issues. Tested Flight Performance Software Phase I. Transitioned to Flight Performance Software Phase II. Addressed need for Situational Awareness Data					
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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Link (SADL) and BLOS Joint Range Extension Application Protocol-C (JREAP-C). Flight demonstration of SADL and BLOS JREAP-C capability. <i>FY 2012 Plans:</i> C2ISR: Conduct engineering / integration studies to determine required modifications and associated costs to upgrade and support Risk Reduction activities for program planning including but not limited to RMP/EP. Execute key program risk-reduction elements via NCC-NEE, International Cooperative Research & Development (ICR&D), Joint Track Management Capability (JTMC) and Cooperative Engagement Capability (CEC). STWF: Address required communication upgrades to ensure viability of AWACS Link 16 capabilities. Provide digital control of platform communication systems such as ARC-210s, SINCGARS, Have Quick and DAMA SATCOM. <i>FY 2013 Base Plans:</i> C2ISR: Will conduct engineering / integration studies to determine required modifications and associated costs to upgrade and support Risk Reduction activities for program planning. Will continue to execute International Cooperative Research & Development (ICR&D). EP: Will begin development of technology solutions to mitigate issues/concerns identified under the RMP study. <i>FY 2013 OCO Plans:</i> N/A					
Accomplishments/Planned Programs Subtotals	201.838	117.880	65.200	-	65.200

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF, PE 0207417F, AWACS: <i>E-3 Mods</i>	191.538	135.031	193.099	0.000	193.099	213.810	192.491	276.917	296.562	Continuing	Continuing
• APAF, PE 0207417F: <i>E-3 Initial Spares</i>	1.031	16.928	17.498	0.000	17.498	19.656	20.051	13.936	14.164	Continuing	Continuing

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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D. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF, PE 0809731F, Training Spt: <i>Maintenance Training Device</i> <i>Upgrades (E-3)</i>	2.468	0.000	0.000	0.000	0.000	0.100	0.614	0.698	0.705	Continuing	Continuing

E. Acquisition Strategy

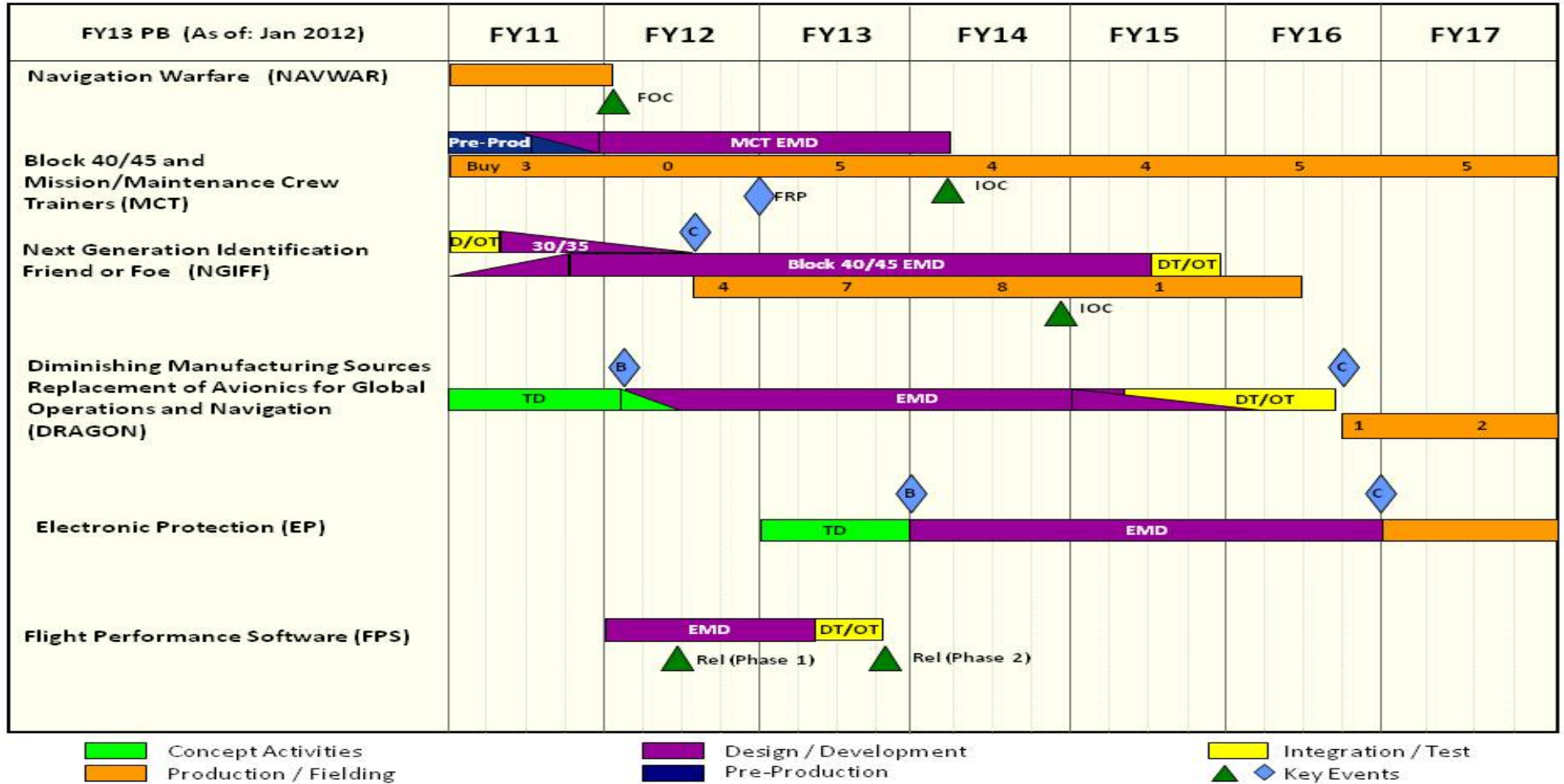
Most major programs (Block 40/45, DRAGON, TS-3 and lab support) will be sole source to the Boeing Corporation, Seattle, WA.

F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
NAVWAR FOC	1	2012	1	2012
40/45 MCT EMD	2	2011	1	2014
40/45 FRP Decision	4	2012	4	2012
40/45 IOC	1	2014	1	2014
NGIFF 30/35 DT/OT	1	2011	2	2011
NGIFF EMD (Deficiency resolution for UPX-40 software developed for Block 30/35)	1	2011	3	2012
NGIFF EMD (UPX-40 software and firmware development for Block 40/45)	1	2011	2	2015
NGIFF Milestone C	3	2012	3	2012
NGIFF 40/45 DT/OT	3	2015	4	2015
NGIFF IOC	4	2014	4	2014
DRAGON Technology Development	1	2011	2	2012
DRAGON Milestone B	1	2012	1	2012
DRAGON EMD	1	2012	1	2016
DRAGON DT/OT	2	2015	3	2016
DRAGON Milestone C	3	2016	3	2016
EP Technology Development	1	2013	4	2013
EP Milestone B	1	2014	1	2014
EP EMD	1	2014	4	2016
EP Milestone C	1	2017	1	2017
FPS Phase 1 Release	2	2012	2	2012
FPS Phase 2 EMD	1	2012	2	2013
FPS Phase 2 DT/OT	2	2013	3	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force			DATE: February 2012	
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>		

Events	Start		End	
	Quarter	Year	Quarter	Year
FPS Phase 2 Release	4	2013	4	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	8.309	5.767	-	5.767	4.445	4.084	4.377	3.863	Continuing	Continuing
675234: <i>TACP Support</i>	-	8.309	5.767	-	5.767	4.445	4.084	4.377	3.863	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 development necessary to provide a Distributed Mission Operations (DMO) capable, high-fidelity simulator for the Joint Terminal Attack Controller (JTAC), Combat Control Team (CCT) and Air Support Operations Center (ASOC). JTC TRS provides development to network aircrew full mission trainers and mission training centers, as well as develops and integrates the ASOCs and Joint Theater Air to Ground Simulation System (JTAGSS) trainer for Joint Fires. JTAGSS is a continuation of the ASOC simulation trainer initially funded in 2009 and complements the JTC TRS trainer by providing a total air-ground constructive simulation environment for integrated networked training and mission rehearsal capability that will develop JTAC/CCT and ASOC/SOF C2 battlestaff skills. The JTC TRS Project provides research and development to facilitate interoperability with joint and sister Service air-ground simulation using industry standards. JTAGSS will provide the ASOC, SOF, and TACP with the vertical and horizontal C2 communications and coordination training and mission rehearsal required for mission effectiveness. The system will include a secure network connection, a constructive simulation environment generator with sharable databases, computer work stations that have synthetic reflex agent applications for every ASOC/SOF crew position, and an instructor/operator station.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	8.309	5.786	-	5.786
Current President's Budget	-	8.309	5.767	-	5.767
Total Adjustments	-	-	-0.019	-	-0.019
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.019	-	-0.019

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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Change Summary Explanation

FY13 funding decrease is due to higher Department of Defense priorities.

C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: JTAC/CCT Trainer Development</p> <p>Description: Continue development of high-fidelity simulation system for JTAC/CCT Training</p> <p>FY 2012 Plans: Continue development of high-fidelity simulation system for JTAC/CCT training.</p> <p>FY 2013 Base Plans: Continue development of high-fidelity simulation for JTAC/CCT training</p> <p>FY 2013 OCO Plans: NA</p> <p>NA</p>	-	0.676	4.006	-	4.006
<p>Title: JTAC/CCT Test and Evaluation</p> <p>Description: Test and Evaluation of JTAC Trainer</p> <p>FY 2012 Plans: Test and Evaluation of JTAC Trainer</p> <p>FY 2013 Base Plans: Test and Evaluaton of JTAC Trainer</p> <p>FY 2013 OCO Plans: NA</p> <p>NA</p>	-	0.200	0.500	-	0.500
<p>Title: JTAGSS Trainer Development</p> <p>Description: Develops high fidelity simulation system for ASOC/SOF Command and Control System that supports JTAC training.</p> <p>FY 2012 Plans:</p>	-	6.683	1.061	-	1.061

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Begin development of JTAGSS simulator configuration. FY 2013 Base Plans: Continue development of JTAGSS simulator configuration. FY 2013 OCO Plans: NA NA					
Title: Program Office Support Description: Program Office Support FY 2012 Plans: Continue Program Office Support N/A FY 2013 Base Plans: Continue Program Office Support N/A FY 2013 OCO Plans: NA NA	-	0.750	0.200	-	0.200
Accomplishments/Planned Programs Subtotals	-	8.309	5.767	-	5.767

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• PE 0207418F, TAC Airborne Contro...: <i>Production</i>	1.462	0.000	5.772	0.000	5.772	3.575	3.234	2.479	2.585	Continuing	Continuing

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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D. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207418F, TAC Airborne Co (1)...: <i>Production</i>	0.000	0.000	0.000	0.000	0.000	3.613	4.873	4.629	0.000	Continuing	Continuing
• PE 0207418F, TAC Airborne Co (2)...: <i>Production</i>	0.000	0.000	2.320	0.000	2.320	1.118	1.148	1.173	1.188	Continuing	Continuing

E. Acquisition Strategy

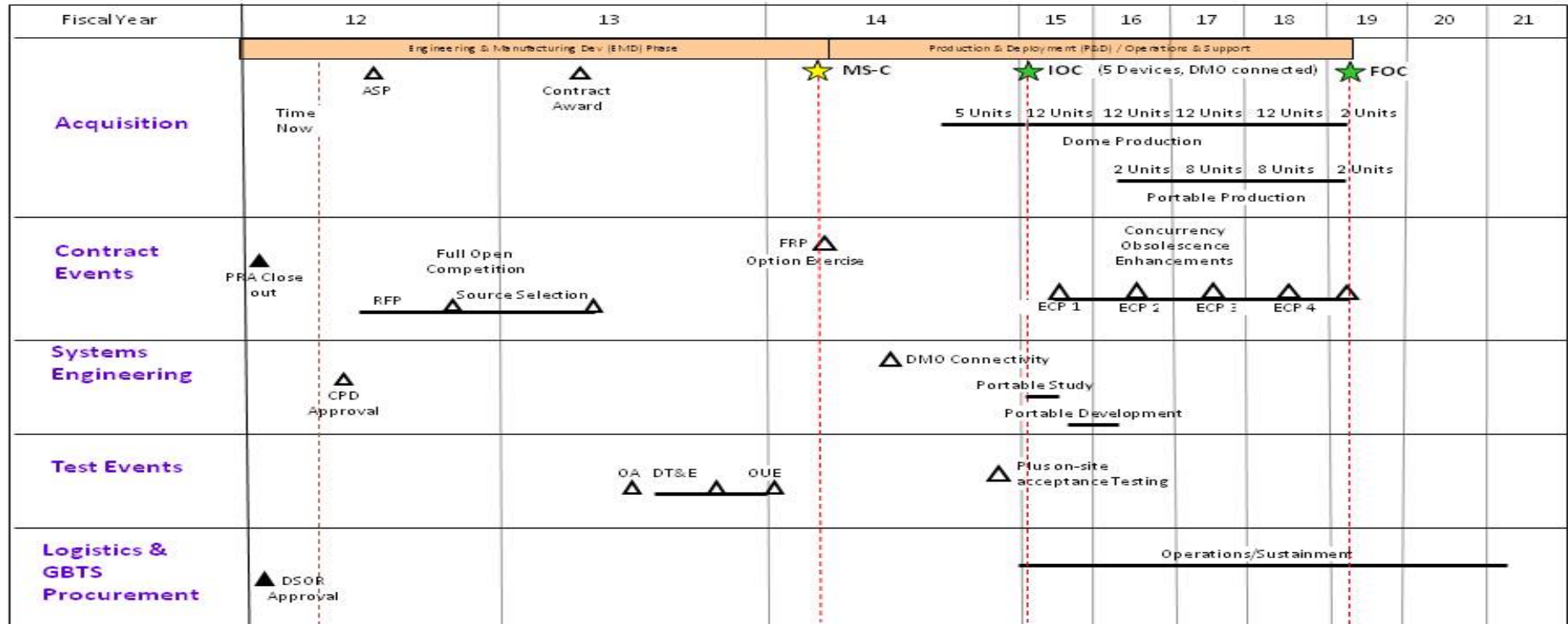
The acquisition strategy for production of the fixed configuration of the JTC TRS will be based on full and open competition with an evolutionary acquisition approach using incremental development. The portable version of the JTAC trainer is planned to be an option on the production contract for JTC TRS. The acquisition strategy for the JTAGSS trainer will be to field advance technology demonstration units to continue to perform proof of concept and technology validation of mission simulations for all ASOC crew positions including detailed communications planning, asset deconfliction, integration of joint fires, and other critical mission areas required for integrated TACP/ASOC C2 mission success. At the completion of the technology validation, a production contract will be competitively awarded to complete JTAGSS deployment and integration.

F. 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.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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

JTC TRS Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

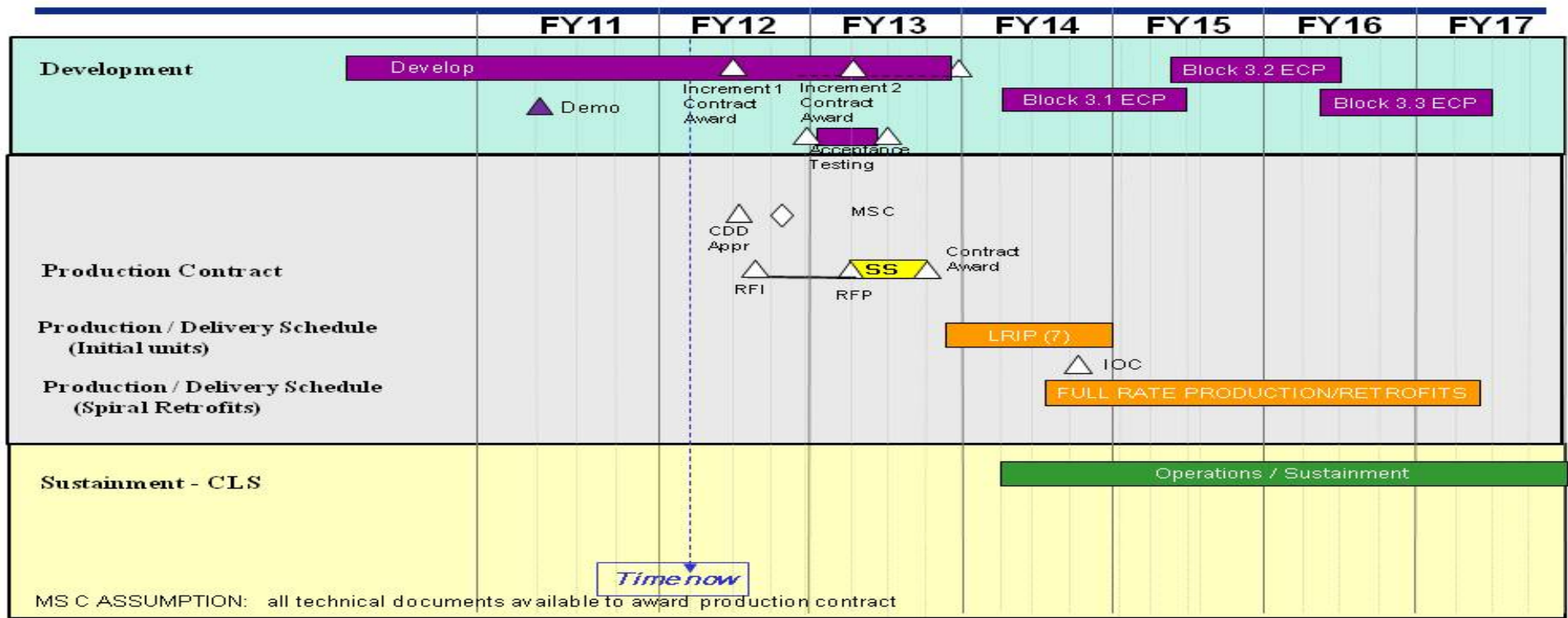
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0207418F: TAC AIRBORNE CONTROL SYSTEM

PROJECT
 675234: TACP Support



JTAGSS Schedule



MS C ASSUMPTION: all technical documents available to award production contract

- Concept activities
- Source Selection
- Production / fielding
- Design / development
- Operations / sustainment
- △ ◇ Key events

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
JTC TRS RFP Release	3	2012	2	2013
JTC TRS Contract Award	2	2013	2	2013
JTC TRS Development	2	2013	2	2016
JTC TRS Test and Evaluation	4	2013	1	2014
JTC TRS Production	1	2014	1	2017
JTAGSS Increment Contract Award	3	2012	3	2012
JTAGSS Development	3	2012	2	2013
JTAGSS Technology Demonstrations Units Deployed	2	2013	4	2013
JTAGSS Production	4	2013	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	52.480	43.964	-	-	-	-	-	-	-	Continuing	Continuing
674934: <i>Tactical Air Control Party (TACP)</i>	13.599	-	-	-	-	-	-	-	-	Continuing	Continuing
675189: <i>C2ISR JTRS Integration</i>	38.881	43.964	-	-	-	-	-	-	-	Continuing	Continuing

Note

In FY2012, Project 674934, Tactical Air Control Party, efforts transferred to PE 0207444F, Tactical Air Control Party, Project 676013, Equipment Modernization, in order to better identify and delineate efforts for Tactical Air Control Party Modernization.

In FY2013, Project number 675189, C2ISR JTRS Integration, was terminated.

"The Cost to Complete and Total Cost for MDAP projects in this program element are documented in the R3. The Cost to Complete and Total Cost on the R2 are entered as "Continuing" and not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding."

A. Mission Description and Budget Item Justification

Joint Tactical Radio System (JTRS) is the Department of Defense (DoD) family of interoperable, modular, software-defined radios that will form the foundation of radio frequency information transmission for Joint Vision 2020. 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 capable of communicating with one another. JTRS radios are intended to interoperate with existing radio systems and improve joint warfighting through a series of new, joint networking waveforms enabling communication via voice, data, and video over mobile, ad-hoc, internet protocol (IP) based networks. Each radio will operate as a node in the network to ensure secure wireless communication and networking services for airborne, mobile and fixed forces. These goals extend to U.S. allies, joint and coalition partners, and, in time, disaster response personnel. JTRS will make the Air Force more effective in Joint warfighting through a series of new, joint networking waveforms. These waveforms included the Mobile User Objective System (MUOS), which provides next generation SATCOM beyond-line-of-sight (BLOS) communications, as well as the Wideband Networking Waveform (WNW) and the Soldier Radio Waveform (SRW), which provide interoperability with Army ground forces from the brigade level down to the dismounted soldier. Together these waveforms enable Joint Close Air Support (JCAS), Combat Search and Rescue (CSAR), and other Joint missions. The JTRS program is built around an open Software Communications Architecture (SCA), allowing common software waveform applications to be implemented across the family of radios to provide joint-service, allied, and coalition interoperability. The Enterprise Business Model, incorporating a common set of shared open system standards, promotes competition and reduces procurement costs for the DoD.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE				
3600: <i>Research, Development, Test & Evaluation, Air Force</i>	PE 0207423F: <i>Advanced Communications Systems</i>				
BA 7: <i>Operational Systems Development</i>					

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	67.532	90.083	194.387	-	194.387
Current President's Budget	52.480	43.964	-	-	-
Total Adjustments	-15.052	-46.119	-194.387	-	-194.387
• Congressional General Reductions	-	-0.919			
• Congressional Directed Reductions	-	-45.200			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-14.027	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-1.025	-	-194.387	-	-194.387

Change Summary Explanation

FY11 Congressional General Reduction of 1.025M in Other Adjustment row.

FY12 Congressional General Reduction (FFRDC, Sec. 8023) of 0.919M.

FY12 Congressional Directed Reduction of 45.2M from FY12 Defense Appropriation Act.

In FY2013, Project number 675189, C2ISR JTRS Integration, was terminated.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
674934: <i>Tactical Air Control Party (TACP)</i>	13.599	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2012, PE 0207423F, Advanced Communications Systems, Project 674934, Tactical Air Control Party (TACP), efforts were transferred to PE 0207444F, Project 676013, Equipment Modernization, in order to better identify and delineate efforts for Tactical Air Control Party Modernization.

A. Mission Description and Budget Item Justification

The TACP-Modernization (TACP-M) program is developing 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 shortens 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, other joint fires assets, aerospace C2 aircraft/agencies, and Intelligence, Surveillance and Reconnaissance (ISR) platforms/agencies. The TACP-M program provides TACP, Air Support Operations Centers (ASOCs), and Tactical Operations Center (TOCs) 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. Streaming Video Receiver) 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 and collateral damage in civilian occupied areas. The TACP-M program supports the Overseas Contingency Operations (OCO) and significantly increased the mission effectiveness of the TACPs and ASOCs during Operation Enduring Freedom and Operation New Dawn. 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 TACP provides modernized, modular, re-locatable and man portable capabilities via streamlined acquisition using non-developmental, off-the-shelf (OTS) Manpack Radios (MPR) or Handheld Radios (HHR), laser targeting devices (LTDs) (including Laser Range Finder (LRFs), Joint Effects Targeting System (JETS) laser designators and imagers, tactical computers, and ancillary equipment combined with Close Air Support System (CASS) software for dismounted, ASOC, and TOC use.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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>

The TACP mounted segment upgrades TACP communications systems with Software Communication Architecture (SCA)-certified, available software programmable radios, legacy radios, and ancillary components. These systems provide reliable communications for CAS and other air support 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 air/ground platforms (e.g. JETS (Target Effects Coordination System [TECS]), Small Diameter Bomb II (SDBII), F-35, Mine Resistant Ambush Protected (MRAP) vehicle, Gateway Lite, and ASOC Gateway) and will provide interoperability data links such as Situational Awareness Data Link (SADL), Link-16 and other transformational communications capabilities.

The mounted capabilities used in overseas contingency operations also require new digital communications/network enabled capabilities integrated in armored vehicle platforms such as the High Mobility, Multi-Wheeled Vehicles (HMMWV), Stryker, and Mine Resistant Ambush Protected (MRAP). The Air Force has requested acceleration of a vehicle communications capability into TACP Stryker Light Armored Vehicles (LAV), and other tactical vehicles.

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 these budget activity includes development efforts to upgrade systems currently fielded or has approval for full rate production and anticipate production funding in current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Mobile Communications Capability</p> <p>Description: Mobile Communications Capability (MCC) - Design, develop, fabricate, integrate, test, provide associated documentation (e.g. technical manuals) in support of delivering a digital multiple-channel, mobile MCC to replace the aging analog GRC-206 communications pallet.</p> <p>FY 2011 Accomplishments: Developed and tested MCC in HMMWV in support of a long term replacement for the aging GRC-206 communications pallet and other TACP systems. Due to issues with personnel safety and survivability issues, the HMMWV portion of VCS was cancelled in FY11. The requirement for a vehicle communication system remains. Future year development is described in the PE 0207444F, Project 676013.</p> <p>FY 2012 Plans: TACP RDT&E efforts moved to PE 0207444F, Project 676013 effective FY2012.</p> <p>N/A</p>	0.587	-	-
<p>Title: Close Air Support System</p>	6.049	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012		
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 Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Description: Close Air Support System (CASS) Software - Upgrade TACP digital communications mission software to enable machine-to-machine (MTM) interfaces between TACPs and multiple systems (e.g. CAS aircraft, Command and Control (C2) nodes, etc). Develop new capabilities to satisfy ORD requirements to improve battlefield Situational Awareness, increase targeting accuracy, reduce the kill chain, and improve data flow/information exchange and reduce fratricide.</p> <p>FY 2011 Accomplishments: Continued to develop new MTM interfaces to Small Diameter Bomb II and Joint Strike Fighter (F35). Developed new interfaces with Joint Air Ground Integration Cell, C2 nodes, and aircraft across the USAF, Joint, and Coalition environment as well as new capabilities to satisfy ORD requirements. This effort included contractor support, engineering support, test and evaluation. This effort also supported 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>FY 2012 Plans: TACP RDT&E efforts have moved to PE 0207444F, Project 676013 effective FY2012.</p> <p>N/A</p>				
<p>Title: Joint Effects Targeting System</p> <p>Description: Joint Effects 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 systems. JETS consists of two sub-systems: the Target Location and Designation System (TLDS) that provides target acquisition, high-accuracy target location, and laser designation; and the Target Effects Coordination System (TECS) that provides connectivity to the digital C4I systems and aircraft. JETS will be incrementally developed where TLDS is Increment 1 and TECS is Increment 2.</p> <p>FY 2011 Accomplishments: AF funds continued development of a prototype TLDS system through the JETS program office. The primary TLDS capability requirements provided a reduction in hardware weight from similar systems, provided a highly accurate target location capability. This effort included contractor support, engineering support, and test and evaluation.</p> <p>FY 2012 Plans: TACP RDT&E efforts have moved to PE 0207444F, Project 676013 effective FY2012.</p> <p>N/A</p>		6.963	-	-
Accomplishments/Planned Programs Subtotals		13.599	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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>

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

Line Item	FY 2011	FY 2012	FY 2013	FY 2013	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Cost To		
			Base	OCO	Total					Complete	Total Cost	
• OPAF, PE 0207423F, Advanced Comm...: N/A	107.233	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

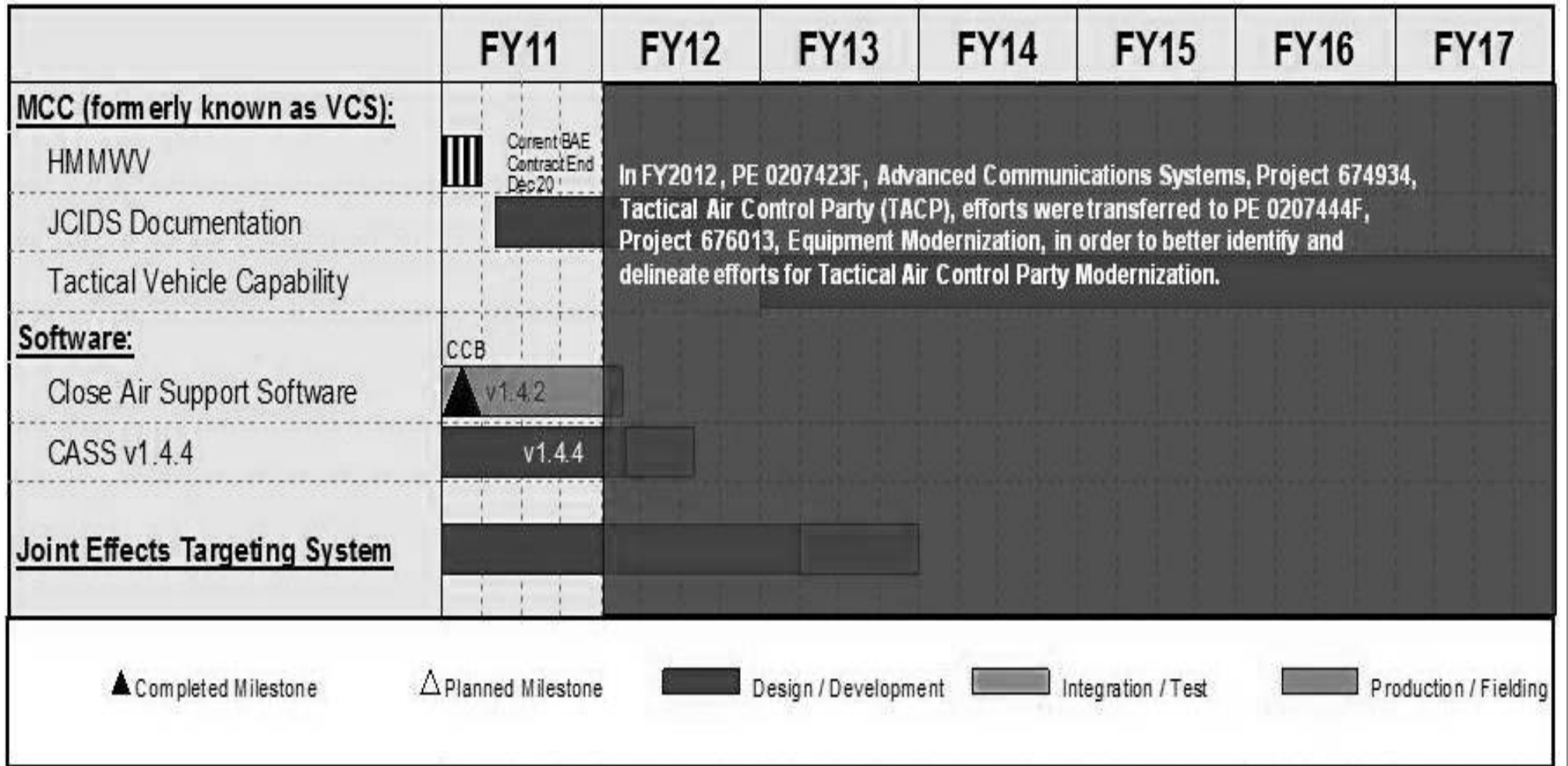
TACP-M is executing an incremental development for the TACP CASS software. TACP CASS software systems engineering, design, integration, and fielding support is being provided under a cost plus fixed fee contract. TACP-M awarded a fixed price development contract (with options for production) for the Vehicular Communication System (VCS) in FY09 under full and open competition. In September 10 Air Combat Command (ACC) decided not to pursue a HMMWV based VCS due to vehicle suitability concerns. The VCS program was terminated in 2011 and the TACP-M program is proceeding to develop JCIDS documentation to support a replacement vehicular based program and other future TACP-M efforts. JETS is a joint interest development program managed by the Army.

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Vehicular Communications System	1	2011	1	2011
JCIDS Documentation	2	2011	4	2013
Software Development and Test - TACP-CASS v1.4.2	1	2011	1	2012
Software Development and Test- TACP-CASS v1.4.4	1	2011	3	2012
Joint Effects Targeting Systems - Development and Testing	1	2011	4	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675189: <i>C2ISR JTRS Integration</i>	38.881	43.964	-	-	-	-	-	-	-	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 System (JTRS) is the Department of Defense (DoD) family of interoperable, modular, software-defined radios that will form the foundation of radio frequency information transmission for Joint Vision 2020. 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 capable of communicating with one another. JTRS radios are intended to interoperate with existing radio systems and improve Joint warfighting through a series of new, joint networking waveforms enabling communication via voice, data, and video over mobile, ad-hoc, internet protocol (IP) based networks. Each radio will operate as a node in the network to ensure secure wireless communication and networking services for airborne, mobile and fixed forces. These goals extend to U.S. allies, joint and coalition partners, and, in time, disaster response personnel. JTRS will make the Air Force more effective in Joint warfighting through a series of new, joint networking waveforms. These waveforms included the Mobile User Objective System (MUOS), which provides next generation SATCOM beyond-line-of-sight (BLOS) communications, as well as the Wideband Networking Waveform (WNW) and the Soldier Radio Waveform (SRW) which provide interoperability with Army ground forces from the brigade level down to the dismounted soldier. Together these waveforms enable Joint Close Air Support (JCAS), Combat Search and Rescue (CSAR) and other Joint missions. The JTRS program is built around an open Software Communications Architecture (SCA), allowing common software waveform applications to be implemented across the family of radios to provide joint-service, allied, and coalition interoperability. The Enterprise Business Model, incorporating a common set of shared open system standards, promotes competition and reduces procurement costs for the DoD.

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

	FY 2011	FY 2012	FY 2013
Title: Systems Engineering and integration	7.140	17.583	-
Description: Systems engineering and integration to develop and certify solutions to Air Force unique requirements for the integration of JTRS compliant radios into Air Force platforms.			
FY 2011 Accomplishments: Funded development and certification of Air Force unique requirements for JTRS compliant terminals. Funded development and risk reduction efforts for a common integration solution for integration of terminals onto Air Force platforms.			
FY 2012 Plans: Funding hardware and software development of a common integration solution for the integration of JTRS compliant terminals onto a variety of Air Force platforms. Also funding risk reductions activities and the development of integration solutions to meet the unique requirements of each host platform.			
Title: Platform Planning and Integration	23.180	16.723	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Description: Platform planning and integration support</p> <p>FY 2011 Accomplishments: Funded non-recurring engineering (NRE) for integration of JTRS Multi Functional Information Distribution System (MIDS) terminal on the JSTARS aircraft. Funded integration efforts to support IP networking and data communication.</p> <p>FY 2012 Plans: Continuing to fund non-recurring engineering (NRE) for integration of JTRS Multi Functional Information Distribution System (MIDS) terminal on the JSTARS aircraft. Continuing to fund integration efforts to support IP networking and data communication.</p> <p>Title: Test and Evaluation</p>			
<p>Description: Interoperability testing and evaluation to perform risk reduction to ensure successful platform integration.</p> <p>FY 2011 Accomplishments: Funded Engineering Design Models (EDMs) to perform interoperability testing, evaluation, and risk reduction to ensure successful integration on various platforms. Extensive evaluations and reporting accomplished.</p> <p>FY 2012 Plans: Continuing interoperability testing and evaluation to perform risk reduction to ensure successful platform integration.</p>	8.561	9.658	-
Accomplishments/Planned Programs Subtotals	38.881	43.964	-

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF, PE 0207423F, Advanced Comm...: <i>Advanced Communication</i>	8.275	58.542	11.639	0.000	11.639	5.790	4.605	0.000	0.000	Continuing	Continuing
• OPAF, PE 0207423F, Advanced Comm...: <i>Advanced Communication</i>	31.518	38.567	56.229	0.000	56.229	68.756	32.837	26.161	25.597	Continuing	Continuing

D. Acquisition Strategy
In 2005, the DoD established the Joint Program Executive Office (JPEO) for JTRS. The JPEO has full directive authority for all JTRS research, development, testing, and evaluation of waveforms, radios, common ancillaries, network management, and associated software. The JPEO is funded jointly by the Services in PE 0604280N.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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>

Air Force JTRS Program Office will perform system engineering integration, to deliver an interoperable, fully synchronized, deployable JTRS system under various contract awards. The program office will lead the development of common integration hardware and software that can be used across multiple Air Force platforms. The AF JTRS program office will also work with the JPEO, industry, and the platform program offices to develop integration solutions specific to each platform. This effort will assist various AF platform users 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>

Air Force JTRS Development and Integration Schedule

	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Systems Engineering, Planning and Integration							
Platform Planning and Integration							
Operational & Interoperability Test Plans							

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Systems Engineering	1	2011	2	2012
Platform Planning and Integration	1	2011	4	2012
Operational & Interoperability Test Planning	1	2011	3	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			PE 0207431F: <i>Combat Air Intelligence System</i>								
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	4.593	5.428	5.756	-	5.756	5.831	5.949	6.116	0.320	Continuing	Continuing
675307: <i>TARGETING ENTERPRISE RESEARCH</i>	3.431	3.851	4.084	-	4.084	4.138	4.222	4.340	-	Continuing	Continuing
675309: <i>GEO Info & Serv Software</i>	1.162	1.577	1.672	-	1.672	1.693	1.727	1.776	0.320	Continuing	Continuing

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 this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	3.310	5.428	5.745	-	5.745
Current President's Budget	4.593	5.428	5.756	-	5.756
Total Adjustments	1.283	-	0.011	-	0.011
• Congressional General Reductions	-	-	-	-	-
• Congressional Directed Reductions	-	-	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	-	-	-	-	-
• Congressional Directed Transfers	-	-	-	-	-
• Reprogrammings	1.300	-	-	-	-
• SBIR/STTR Transfer	-	-	-	-	-
• Other Adjustments	-0.017	-	0.011	-	0.011

Change Summary Explanation

FY11 Congressional General Reduction of 0.017M in Other Adjustment row.

FY13 funding decrease is due to higher Department of Defense priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675307: <i>TARGETING ENTERPRISE RESEARCH</i>	3.431	3.851	4.084	-	4.084	4.138	4.222	4.340	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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.

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.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013
Title: Targeting Enterprise Research	3.431	3.851	4.084
Description: Conduct Targeting Enterprise Research			
FY 2011 Accomplishments: Conduct Targeting Enterprise Research			
FY 2012 Plans: Continue to conduct Targeting Enterprise Research.			
FY 2013 Plans: Continue to conduct Targeting Enterprise Research			
Accomplishments/Planned Programs Subtotals	3.431	3.851	4.084

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• Not applicable: <i>N/A</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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>

D. Acquisition Strategy

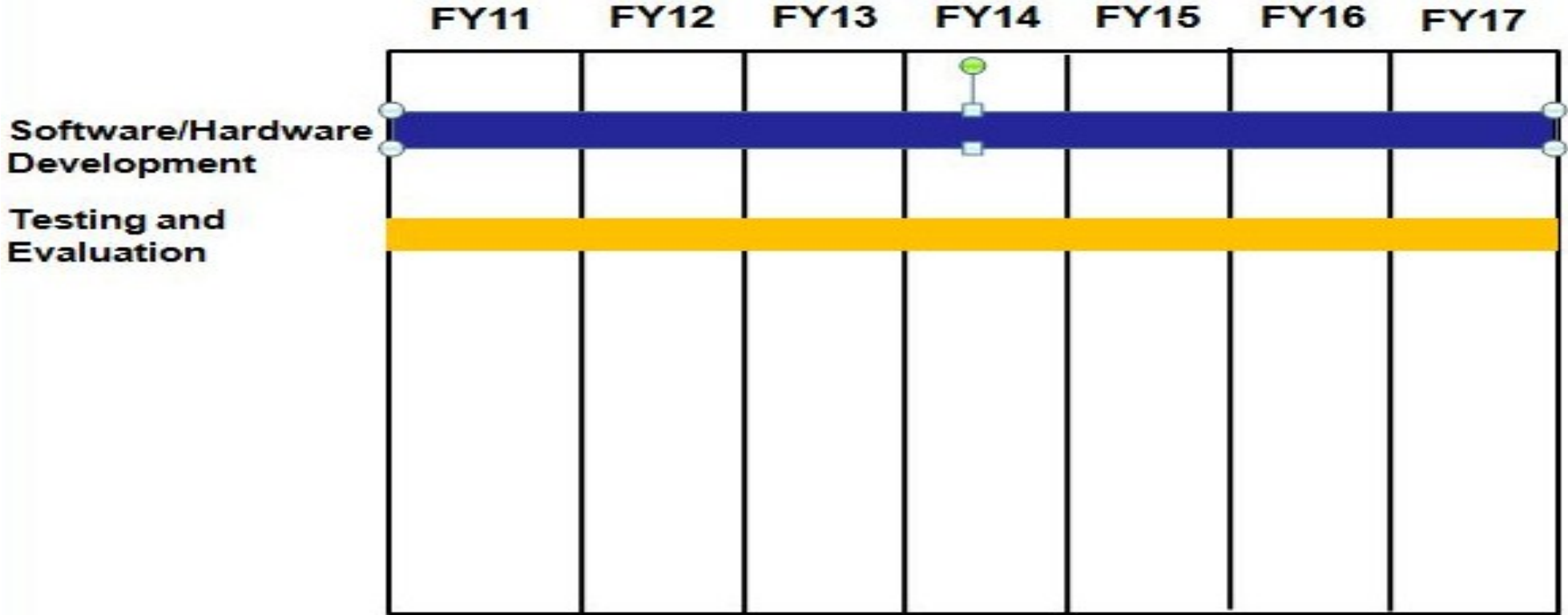
All contracts are awarded based on full and open competition.

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.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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 Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Software/Hardware Development	1	2011	4	2017
Test and Evaluation	1	2011	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675309: <i>GEO Info & Serv Software</i>	1.162	1.577	1.672	-	1.672	1.693	1.727	1.776	0.320	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

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.

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.

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

	FY 2011	FY 2012	FY 2013
Title: GEO Info & Serv Software	1.162	1.577	1.672
Description: Provides GEO Info & Serv Software			
FY 2011 Accomplishments: Continue to provide GEO Info & Serv Software.			
FY 2012 Plans: Provides GEO Info & Serv Software.			
FY 2013 Plans: Provides GEO Info & Serv Software.			
Accomplishments/Planned Programs Subtotals			1.672

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• None.: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

All major contracts within this project will be awarded after full and open competition.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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>

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>

Geospatial Product Library (GPL) Schedule

<i>MAJCOM</i>	<i>FY10</i>	<i>FY11</i>	<i>FY12</i>	<i>FY13</i>	<i>FY14</i>	<i>FY15</i>
<i>ACC</i>	R&D SOFTWARE/HARDWARE (674826)					

 **R&D SOFTWARE/HARDWARE (674826)**

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.

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Software Development	1	2011	4	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	14.640	15.485	-	-	-	-	-	-	-	Continuing	Continuing
674802: <i>DELIBERATE AND CRISIS ACTION PLANNING AND EXECUTION SEGMENT (DCAPES)</i>	14.640	15.485	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2013, Project Number 674802, Deliberate and Crisis Action Planning and Execution Segment (DCAPES), efforts transferred to PE 0207452F, DCAPES, Project Number 674802, Deliberate and Crisis Action Planning and Execution Segment, in order to provide clarity to the effort by providing a singular PE and Project Number.

A. Mission Description and Budget Item Justification

The TBM C4I Program Element (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 to modify systems to consume authoritative force structure from Global Force Management-Data Initiative (GFM-DI) organizational servers, linking the identifiers to or replacing current identifiers and, as applicable, exposing the data in a net-centric fashion.

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.

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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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Funding will also support development and systems engineering activities, to include (1) facilitating improvements to system effectiveness through efficient segregation of mission capabilities (apps, services, applications) from underlying networking, middleware and computing infrastructures by using common architecture, standards, and services, and (2) employing a rapid/agile IT acquisition process to effectively deliver capabilities to the warfighter.

This program is in Budget Activity 7, Operational System Development. These budget activities include development efforts to upgrade systems currently fielded or has approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	15.170	15.528	15.817	-	15.817
Current President's Budget	14.640	15.485	-	-	-
Total Adjustments	-0.530	-0.043	-15.817	-	-15.817
• Congressional General Reductions	-	-0.043			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.434	-			
• Other Adjustments	-0.096	-	-15.817	-	-15.817

Change Summary Explanation

FY11: Adjustment for Cong General Reductions of 0.096M shown in Other Adjustments Row.

FY12 Congressional General Reduction (FFRDC, Sec. 8023) of 0.043M.

FY13 - 17 funding for Project Number 674802, Deliberate and Crisis Action Planning and Execution Segment (DCAPES), was transferred to PE 0207452F DCAPES, Project Number 674802, Deliberate and Crisis Action Planning and Execution Segment (DCAPES), in order to provide clarity to the effort by providing a singular PE and Project Number.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Loosely Couple DCAPES/JOPES Interfaces	14.640	15.485	-	-	-
Description: Continue Increment 2 requirements definition, prototyping, development, testing, interoperability, sustainment, and service oriented architecture transition.					

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p><i>FY 2011 Accomplishments:</i> Maintained DCAPES v4.1.0.5 (supporting JOPES v4.2 interoperability), completed DCAPES v4.1.2.0 (Oracle 11g) DT&E and OT&E, developed patch v4.2.2.1 (JOPES v4.2.1 interoperability) to Loose Coupling Release 1 v4.2.2.0 (now combined with v4.2.1.0) and took delivery of Loose Coupling Release 2 v5.0.0.0 (outbound transactions)</p> <p><i>FY 2012 Plans:</i> Field DCAPES v4.1.2.0 and Loose Coupling Release 1 v4.2.2.1 (JOPES v4.2.1 interoperability), took delivery of Loose Coupling Release 2 patch v5.0.0.1 (to remain interoperable with JOPES v4.2.1 changes), address critical warfighter requirements, maintain interoperability, and award Increment 2b contract</p> <p><i>FY 2013 Base Plans:</i> Effort moved to PE 0207452. Will field Loose Coupling Release 2 patch v5.0.0.1 (achieve Loose Coupling), address critical warfighter requirements, maintain interoperability, and initiate Inc 2b development effort</p> <p><i>FY 2013 OCO Plans:</i> OCO FY13: N/A</p>					
Accomplishments/Planned Programs Subtotals	14.640	15.485	-	-	-

D. Other Program Funding Summary (\$ in Millions)										
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete Total Cost</u>
• PE 0207438F: <i>DCAPES O&M</i>	3.354	7.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000 Continuing Continuing

E. 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.

F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

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

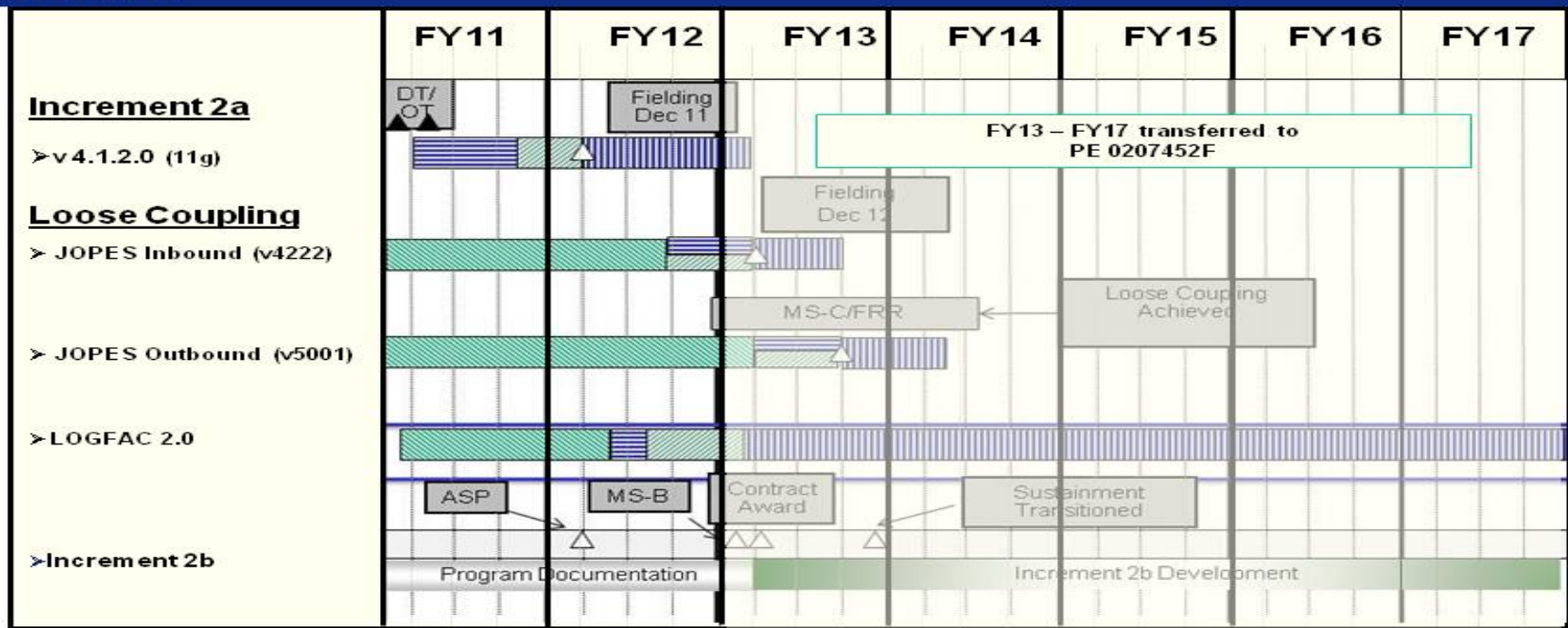
PROJECT

674802: DELIBERATE AND CRISIS ACTION PLANNING AND EXECUTION SEGMENT (DCAPES)



DELIBERATE AND CRISIS ACTION PLANNING AND EXECUTION SEGMENT (DCAPES)

U.S. AIR FORCE



Concept
 Design/Development
 Dev/Ops Test
 Certification/Accred/Fielding
 Sustainment

2013 PB R-Docs

As of 16 Dec 2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
INCREMENT 2a	2	2011	4	2012
--- Increment 2a 4.1.2.0 Dev/Ops Test	2	2011	4	2011
--- Increment 2a 4.1.2.0 Certification	4	2011	4	2012
--- Increment 2a 4.1.2.0 Sustainment	2	2012	4	2012
LOOSE COUPLING	1	2011	4	2012
- JOPES Inbound (v4.2.2.2)	1	2011	4	2012
--- JOPES Inbound (v4.2.2.2) Design/Development	1	2011	4	2012
--- JOPES Inbound (v4.2.2.2) Ops Test/Certification	3	2012	4	2012
- JOPES Outbound (v5.0.0.1)	1	2011	4	2012
--- JOPES Outbound (v5.0.0.1) Design/Development	1	2011	4	2012
LOGFAC 2.0	1	2011	4	2012
--- LOGFAC 2.0 Design/Development	1	2011	2	2012
--- LOGFAC 2.0 Ops Test	2	2012	3	2012
--- LOGFAC 2.0 Certification/Accreditation	3	2012	4	2012
INCREMENT 2b	1	2011	4	2012
--- Increment 2b: Documentation	1	2011	4	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207444F: <i>Tactical Air Control Party Modernization</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	9.515	16.226	-	16.226	10.511	10.421	10.697	10.832	Continuing	Continuing
676013: <i>Equipment Modernization</i>	-	9.515	16.226	-	16.226	10.511	10.421	10.697	10.832	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2012, Project 676013, Equipment Modernization, efforts were transferred from PE 0207423F, Advanced Communications Systems, Project 674934, TACP-M, in order to better identify and delineate efforts for Tactical Air Control Party Modernization.

"The Cost to Complete and Total Cost for MDAP projects in this program element are documented in the R3. The Cost to Complete and Total Cost on the R2 are entered as "Continuing" and not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding."

A. Mission Description and Budget Item Justification

The Tactical Air Control Party-Modernization (TACP-M) program acquires capabilities for TACP operations. TACP members deploy with Army maneuver units and provide a Command and Control (C2) link for Close Air Support (CAS), airlift, and Air Force surveillance/reconnaissance missions. TACP's are equipped with various targeting and communication equipment which interfaces with ground maneuver forces, CAS aircraft, Joint Fires assets, C2 aircraft/agencies, and Intelligence, Surveillance, and Reconnaissance (ISR) platforms/agencies. Throughout the performance of their duties, TACP's detect targets and compute precision coordinates to aircraft to ensure pilots track the correct target in the employment of GPS aided weapons. The actions performed by TACPs not only shorten the kill chain, but also reduces the potential for fratricide and collateral damage in civilian-occupied areas.

The TACP-M program provides equipment modernization capabilities to TACP, Air Support Operations Centers (ASOCs), and Tactical Operations Center (TOCs) personnel. The program supports the Overseas Contingency Operations (OCO) and significantly increased the mission effectiveness of the TACPs and ASOCs during Operation Enduring Freedom and Operation New Dawn. The TACP-M program continues to be instrumental in providing ground communications for TACPs during federal emergency relief operations and Homeland Defense initiatives.

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. Streaming Video Receiver) 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. TACPs use Software Communication Architecture (SCA)-certified, Joint Tactical Radio System (JTRS), software programmable radios, and ancillary components for reliable voice & data UHF SATCOM and LOS UHF /VHF communications. TACP-M is divided into three segments: Software, Dismounted and Mounted. The Mounted segment is further divided into Fixed and Mobile elements.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY
3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
PE 0207444F: Tactical Air Control Party Modernization

The Software segment utilizes a common Close Air Support System Software(CASS) baseline across all TACP systems. The CASS software major thrust provides cross-service interoperability with numerous aircraft (A-10, F-16, F/A-18, etc), helicopters, unmanned air vehicles (Predator), land and naval artillery, network enabled weapons, command & control nodes, and communications systems utilizing numerous messaging systems (such as Variable Message Format (VMF), Situational Awareness Data Link (SADL), and Link-16 to provide maximum flexibility and capability to the TACP for the execution of joint fires support mission. FY13 funding associated with the software segement will support the CASS major thrust.

The Dismounted segment consists of integrated, man-portable systems procured via streamlined acquisition using non-developmental and off-the-shelf (OTS) components which is carried by dismounted airman. These include laser rangefinders, thermal imagers, laser designators, man-pack and handheld radios, ruggedized tactical computers, streaming video receivers, and other required equipment. The dismounted segment also incorporates the development of an advanced Target Location Designation System (TLDS) which is also being managed under the Army-led Joint Effects Targeting System (JETS) program. TLDS will combine the capability of a laser marker, designator and thermal imagers into a small, lightweight system. FY13 funding will continue to support this major thrust and focus on the development of TLDS within the JETS program.

The mounted (Fixed) segment integrates computer and communications equipment into re-locatable vehicle, rack or transit case mounted systems for use in Tactical Operations Center (TOC) or Air Support Operations Center (ASOC) locations. The TACP mounted (Fixed) segment includes the High Mobility, Multi-Wheeled Vehicle (HMMWV)-mounted Air Support Operations Center (ASOC) Gateway, Gateway Lite, and the Dismounted Communications Package (DCP). The TACP Mounted (Mobile) segment integrates similar equipment into mobile tactical vehicles employed by the Army and provides on-the-move tactical voice and data capability.

Prior to FY12, the major thrust associated with the mounted segment of TACP-M was the Vehicular Communication System (VCS). This thrust focused on placing a TACP equipment suite into a HMMWV. In September 2010, the AF decided not to pursue production of the large HMMWV-Mounted VCS system due to survivability issues related to the current theaters of operations, and cancelled the program in early 2011. However, the requirement capability to conduct robust communications in both tactical operations center locations and on-the-move in tactical vehicles remains. The Air Force is now engaged in the JCIDS process and focused on a Capability Development Document to address these capability gaps. FY13 the VCS thrust is renamed Moblie Communication Capability (MCC), and funding will be used to conduct studies and risk reduction activities for TACP mounted communications systems for fixed and vehicular platforms.

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 this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipated production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207444F: <i>Tactical Air Control Party Modernization</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	15.978	16.194	-	16.194
Current President's Budget	-	9.515	16.226	-	16.226
Total Adjustments	-	-6.463	0.032	-	0.032
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-6.300			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-0.163	0.032	-	0.032
 Change Summary Explanation					
FY12 Congressional Directed Reduction: \$4.3M for VCS program termination and restructure, \$2.0M for JETS contract delays.					
FY13 funding decrease is due to higher Department of Defense priorities.					

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Close Air Support System (CASS)	-	4.887	9.127
Description: CASS Software - Upgrade TACP digital communications mission software to enable machine-to-machine (MTM) interfaces between TACPs and multiple systems (e.g. CAS aircraft, Command and Control (C2) nodes, etc.) Develop new capabilities to satisfy documented requirements to improve battlefield Situational Awareness, increase targeting accuracy, reduce the kill chain, and improve data flow/information exchange and reduce fratricide.			
FY 2011 Accomplishments: N/A			
FY 2012 Plans: Continue to develop new MTM interfaces with weapons (e.g. Small Diameter Bomb II), new interfaces with Joint Air Ground Integration Cell, C2 Nodes, indirect fires integration, and aircraft across the USAF, Joint (e.g. F-35) and Coalition environment, and satisfy validated warfighter requirements. This effort also continues to support the Joint Digital Aided Close Air Support (DACAS) Block 1 initiative which will provide a common CAS terminal execution phase capability across service and coalition			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207444F: <i>Tactical Air Control Party Modernization</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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forces. CAS software will also be focused on developing a simplified user interface which is user tailorable to specific TACP missions. This effort will include contractor support, engineering support, test and evaluation.

FY 2013 Plans:
Will continue to develop new MTM interfaces with weapons (e.g. Small Diameter Bomb II), new interfaces with Joint Air Ground Integration Cell, C2 Nodes, indirect fires integration, and aircraft across the USAF, Joint (e.g. F-35) and Coalition environment, and satisfy validated warfighter requirements. This effort also continues to support the Joint Digital Aided Close Air Support (DACAS) Block 1 initiative which will provide a common CAS terminal execution phase capability across service and coalition forces. CAS software will also be focused on developing a simplified user interface which is user tailorable to specific TACP missions. This effort will include contractor support, engineering support, test and evaluation.

Title: Joint Effects Targeting System (JETS)	-	4.128	6.099
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Description: JETS is an Army-led program to develop, integrate, and test an integrated CAS targeting system that is smaller, lighter, and more accurate than current systems. JETS consists of two sub-systems: the Target Locations and Designation System (TDLS) that provides target acquisition, high-accuracy target location and laser designation. JETS will be incrementally developed.

FY 2011 Accomplishments:
N/A

FY 2012 Plans:
AF funds continue to support the development of a prototype TLDS system through the JETS program office. The primary TLDS capability requirements are: provide a reduction in hardware weight from current similar systems, provide a highly accurate target location capability. This effort includes contractor support, engineering support, and test and evaluation.

FY 2013 Plans:
AF funds will continue to support the development of a prototype TLDS system through the JETS program office. The primary TLDS capability requirements are: provide a reduction in hardware weight from current similar systems, provide a highly accurate target location capability. This effort includes contractor support, engineering support, and test and evaluation.

Title: Mobile Communication Capability	-	0.500	1.000
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Description: Renamed from Vehicular Communication System (VCS), Mobile Communication Capability (MCC) - Design, develop, fabricate, integrate, test, provide associated documentation (e.g. technical manuals) in support of delivering a digital multiple-channel, mobile communication system to replace the aging analog GRC-206 communications pallet.

FY 2011 Accomplishments:

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207444F: <i>Tactical Air Control Party Modernization</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
N/A			
FY 2012 Plans: After VCS HMMWV cancellation in FY11, Tactical Air Control Party-Modernization RDT&E efforts are focusing studies and analyses on developing Joint Capabilities Integration and Development System (JCIDS) documentation in support of a long term replacement for the aging GRC-206 communications pallet and other TACP systems.			
FY 2013 Plans: Will continue to perform studies and analyses to develop Tactical Air Control Party-Modernization (TACP-M) Joint Capabilities Integration and Development System (JCIDS) documentation in support of a long term replacement for the aging GRC-206 communications pallet and other TACP systems.			
Accomplishments/Planned Programs Subtotals	-	9.515	16.226

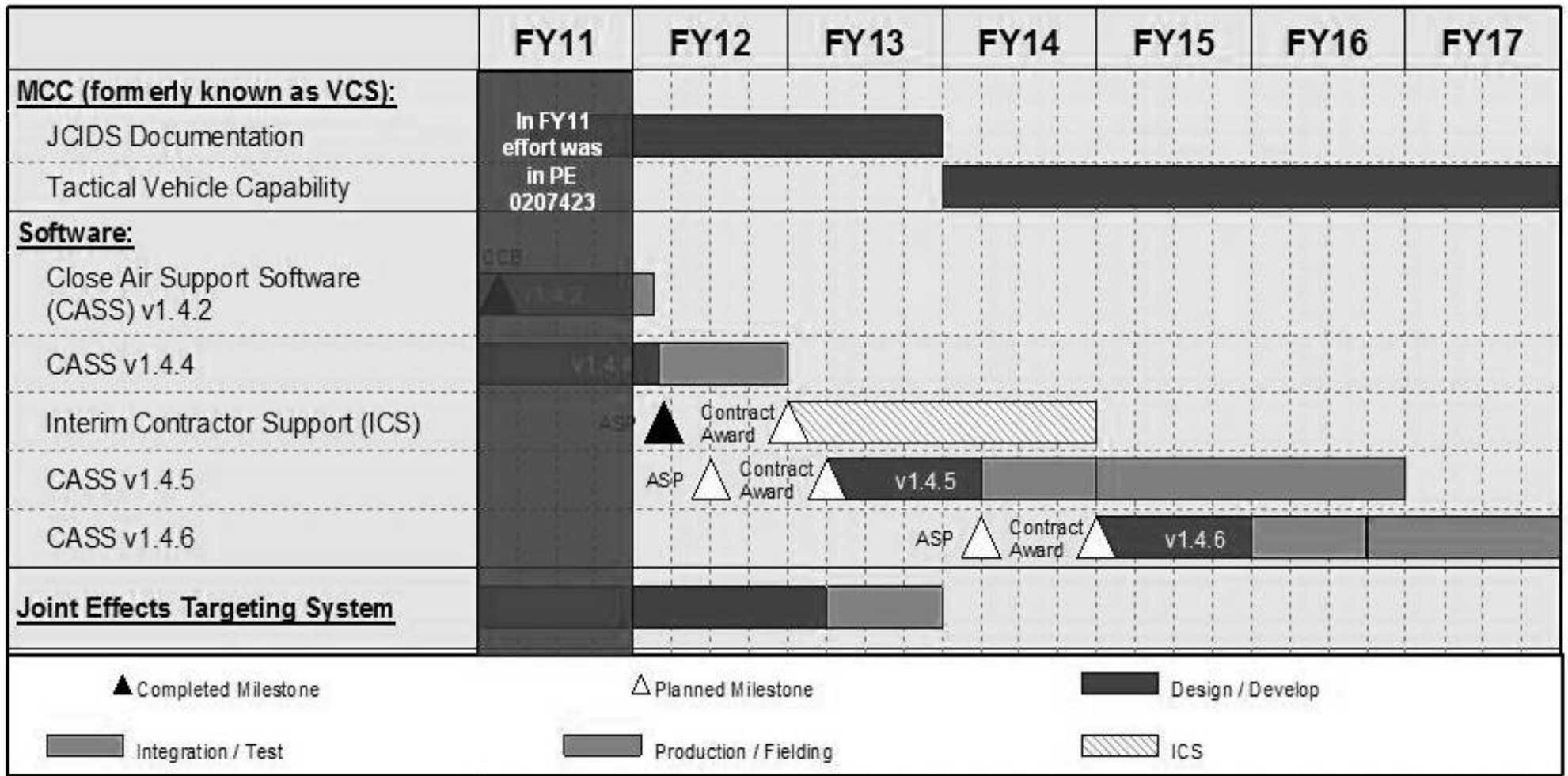
D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF, PE 0207423F, Tactical C-E ...: <i>Tactical C-E Equipment</i>	170.673	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• OPAF, PE 0207444F, Tactical C-E ...: <i>Tactical C-E Equipment</i>	0.000	53.839	35.304	0.000	35.304	33.329	30.001	25.582	25.925	Continuing	Continuing

E. Acquisition Strategy
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. JETS is an Army-managed joint interest development program the Air Force will continue to support.

F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207444F: <i>Tactical Air Control Party Modernization</i>	PROJECT 676013: <i>Equipment Modernization</i>



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207444F: <i>Tactical Air Control Party Modernization</i>	PROJECT 676013: <i>Equipment Modernization</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JCIDS Documentation	2	2011	4	2013
Tactical Vehicle Capability	1	2014	4	2017
Close Air Support System (CASS) v1.4.2	1	2011	1	2012
Close Air Support System (CASS) v1.4.4	1	2011	4	2012
Interim Contractor Support (ICS)	1	2013	4	2014
Close Air Support System (CASS) v1.4.5	2	2013	4	2016
Close Air Support System (CASS) v1.4.6	1	2015	4	2017
Joint Effects Targeting Systems	1	2011	4	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	22.756	-	-	-	-	-	-	-	-	Continuing	Continuing
675043: <i>Fighter Tactical Data Link</i>	22.756	-	-	-	-	-	-	-	-	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 Aerial Layer Network, are used in both peace time and combat environments to exchange information such as fixed formatted messages, data, radar tracks, target information, platform status, imagery, free text messaging and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs increase mission effectiveness, providing enhanced situational awareness, positive combat identification of aircraft in the network, correlation of on- and off-board sensor data, digital machine to machine target and threat information sharing; enabling time critical targeting and other mission assignment tasking. 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), Intra-Flight Data Link (IFDL), and other Advanced Tactical Data Link technologies, such as Tactical Targeting Network Technology (TTNT), and Multifunction Advanced Data Link (MADL).

This effort provides critical capability and enhancements to the Aerial Layer Network by creating common development, integration and interoperability among all Air Force fighter platforms including but not limited to A-10, F-15A-E, F-16 Blocks 30/40/50, F-22A, and F-35 aircraft. The funds associated with the Fighter TDL PE ensure the Air Force (AF) fighter fleet maintains standardization; develops interoperable data link exchanges; and enables Global Strike (GS), Global Persistent Attack (GPA), Offensive and Defensive Counterair (OCA and DCA), Suppression of Enemy Air Defenses (SEAD), and Destruction of Enemy Air Defenses (DEAD) missions. Incorporation of TDLs on the fighter fleet also expands Line of Sight (LOS) and Beyond Line of Sight (BLOS) data link connectivity. Additional efforts aimed at maintaining interoperability amongst the platforms in this portfolio include: AF and Joint interoperability certification testing, waveform crypto modernization, updates to the Link-16 message standard (MIL-STD-6016D) and integration of applicable Interface Change Proposals (ICPs) within platform Operational Flight Programs 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.

Fighter Tactical Data Link program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	85.492	-	-	-	-
Current President's Budget	22.756	-	-	-	-
Total Adjustments	-62.736	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-61.500	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-1.236	-	-	-	-

Change Summary Explanation

FY11 Congressional Rescission, -\$61.500M, MADL - transfer to line 134 (F-22). The funds remaining in FY11 subsequent to the rescission were used as described in the following FY 2011 Effort Description.

FY11 Congressional General Reduction of 1.236M in Other Adjustment row.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: TDL Enterprise</p> <p>Description: Develop a well-documented, interoperable data link capability for Low Observable platforms in the anti access region. Explore options to enable interoperability between 4th & 5th generation fighters.</p> <p>FY 2011 Accomplishments: Finalized the Waveform Specification for the MADL Increment 1 capability. Began development of a new MADL Message Standard revision for future MADL increments/capabilities. Continued using modeling and simulation capabilities to develop MADL employment procedures and assess the mission utility of future MADL capabilities. Monitored Test and Evaluation activities on the F-35 and F-22A for MADL interoperability test planning. Explored options for 4th to 5th generation fighter interoperability. Continued developing a MADL enterprise Information Assurance strategy. Developed a roadmap for technology evolution.</p>	16.660	-	-
<p>Title: Direct Support</p> <p>Description: Fighter Tactical Data Link system engineering analysis, development, testing, integration, and technical support of common Fighter data link technology and capabilities.</p>	6.096	-	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<i>FY 2011 Accomplishments:</i> Provided PMA in direct support of F-22A Advanced TDL development and MADL Enterprise.			
Accomplishments/Planned Programs Subtotals	22.756	-	-

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• RDT&E AF, PE 0207448F: <i>C2ISR TDL</i>	1.528	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• RDT&E AF, PE 0604281F: <i>TDN Enterprise</i>	192.882	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• APAF, PE 0207445F: <i>Fighter TDL</i>	0.920	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• APAF, PE 0604281F: <i>TDN Enterprise</i>	50.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	50.000
• OPAF, PE 0604281F: <i>TDN Enterprise</i>	21.622	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	21.622
• O&M AF, PE 0207445F: <i>Fighter TDL</i>	0.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• O&M AF, PE 0401839F: <i>Air Mobility TDL</i>	6.937	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• O&M AF, PE 0604281F: <i>TDN Enterprise</i>	288.541	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. Acquisition Strategy
 Airborne Networking Division 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

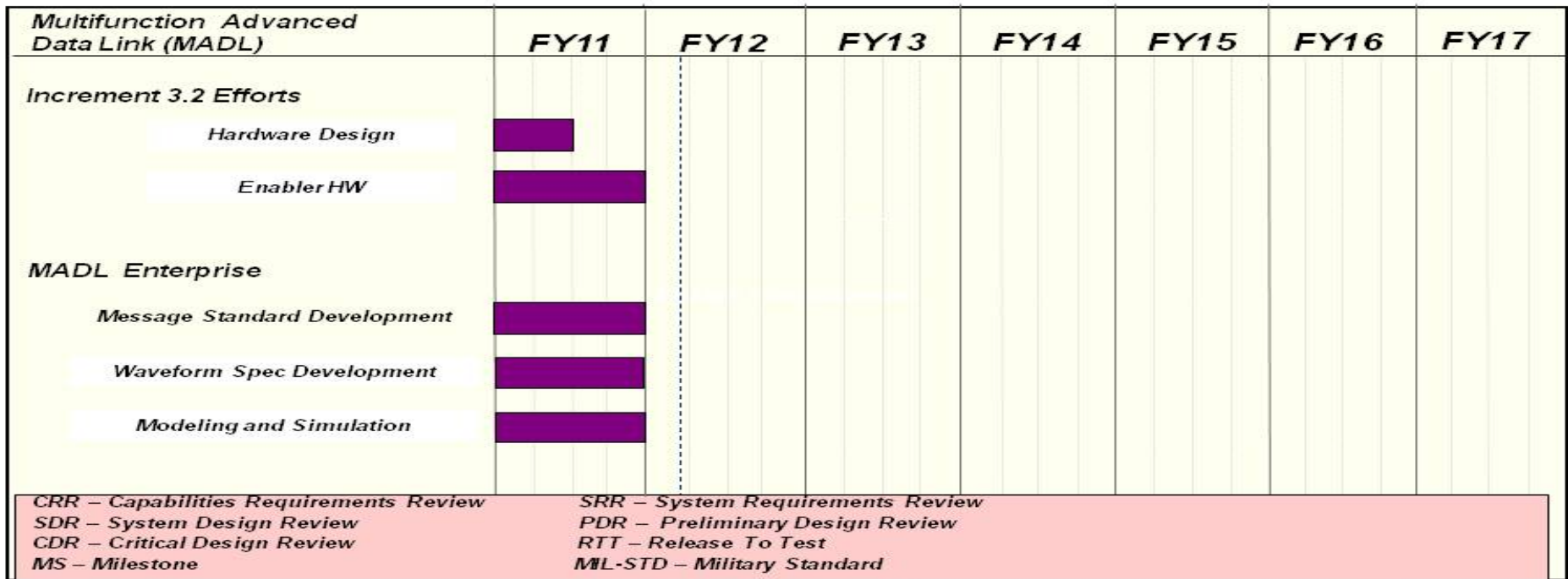
F. Performance Metrics
 Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>



F-22 MADL/MADL Enterprise Schedule



◆ *Key Events*
 Concept
 Design / Development
 Production / Fielding
 Integration / Test
 Sustainment

Integrity - Service - Excellence

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
F-22A Crypto and Enabler Hardware (HW) Design	1	2011	2	2011
F-22A Enabler HW Development	1	2011	4	2011
MADL Enterprise Message Standard Development	1	2011	4	2011
MADL Enterprise Waveform Spec Development	1	2011	4	2011
MADL Enterprise Modeling and Simulation	1	2011	4	2011

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	1.528	1.522	1.633	-	1.633	1.650	1.691	1.736	1.755	Continuing	Continuing
675045: <i>C2ISR Tactical Data Link</i>	1.528	1.522	1.633	-	1.633	1.650	1.691	1.736	1.755	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 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. 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), and Tactical Targeting Network Technology (TTNT). 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 Command and Control Integration Center (AFC2IC) 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.

This effort provides critical capability and enhancements to the Airborne Network by creating common development, integration and interoperability among ground and C2 platforms and responds to Quick Reaction Capability integration and demonstration 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.

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

This program is in Budget Activity 7, Operational System Development, these budget activities include development efforts to upgrade systems currently fielded or has approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	1.584	1.536	1.626	-	1.626
Current President's Budget	1.528	1.522	1.633	-	1.633
Total Adjustments	-0.056	-0.014	0.007	-	0.007
• Congressional General Reductions	-	-0.014			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.056	-	0.007	-	0.007

Change Summary Explanation

FY11 Congressional General Reduction of 0.0056 in Other Adjustment row.

FY12 Congressional General Reduction (FFRDC, Sec. 8023) of 0.014M.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: C2ISR Tactical Data Link Software Enhancements	1.528	1.522	1.633
Description: Improve AWACS Blocks 30/35 and 40/45 Link 16 interoperability and compatibility by incorporating key changes to communications software baseline.			
FY 2011 Accomplishments: Developed and released Request for Proposal (RFP) Package, evaluated proposal and awarded contract. Reviewed existing software baseline and refined requirements. Conducted System Requirements Review (SRR). Began software design.			
FY 2012 Plans: Continuing software design and developing Design Interface Papers. Performing Software Code and Checkout and engineering test. Performing integration testing.			
FY 2013 Plans: Will develop and perform Software Acceptance Test cases and provide final case report.			
Accomplishments/Planned Programs Subtotals	1.528	1.522	1.633

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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D. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2011	FY 2012	FY 2013	FY 2013	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Cost To	
			Base	OCO	Total					Complete	Total Cost
• RDT&E AF, PE 0207445F: <i>Fighter TDL</i>	22.756	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• RDT&E AF, PE 0604281F: <i>TDN Enterprise</i>	192.882	47.057	24.534	0.000	24.534	25.116	17.268	19.105	22.138	Continuing	Continuing
• APAF, PE 0207445F: <i>Fighter TDL</i>	0.920	0.741	0.000	0.000	0.000	13.148	14.704	14.572	14.721	Continuing	Continuing
• APAF, PE 0207446F: <i>Bomber TDL</i>	0.000	0.000	0.000	0.000	0.000	1.616	1.696	1.429	0.000	Continuing	Continuing
• APAF, PE 0207448F: <i>C2ISR TDL</i>	0.000	0.957	0.000	0.000	0.000	0.832	1.921	1.963	1.973	Continuing	Continuing
• APAF, PE 0604281F: <i>TDN Enterprise</i>	50.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• OPAF, PE 0604281F: <i>TDN Enterprise</i>	21.622	10.388	0.269	0.000	0.269	0.248	0.169	0.170	0.173	Continuing	Continuing
• O&M AF, PE 0207445F: <i>Fighter TDL</i>	0.200	0.210	0.249	0.000	0.249	0.254	0.258	0.265	0.276	Continuing	Continuing
• O&M AF, PE 0401839F: <i>Air Mobility TDL</i>	6.937	2.025	6.989	0.000	6.989	4.031	3.974	2.925	3.000	Continuing	Continuing
• O&M AF, PE 0604281F: <i>TDN Enterprise</i>	288.541	434.330	37.132	0.000	37.132	35.058	36.952	37.128	37.521	Continuing	Continuing

E. Acquisition Strategy

The Airborne Networking Division 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.

F. Performance Metrics

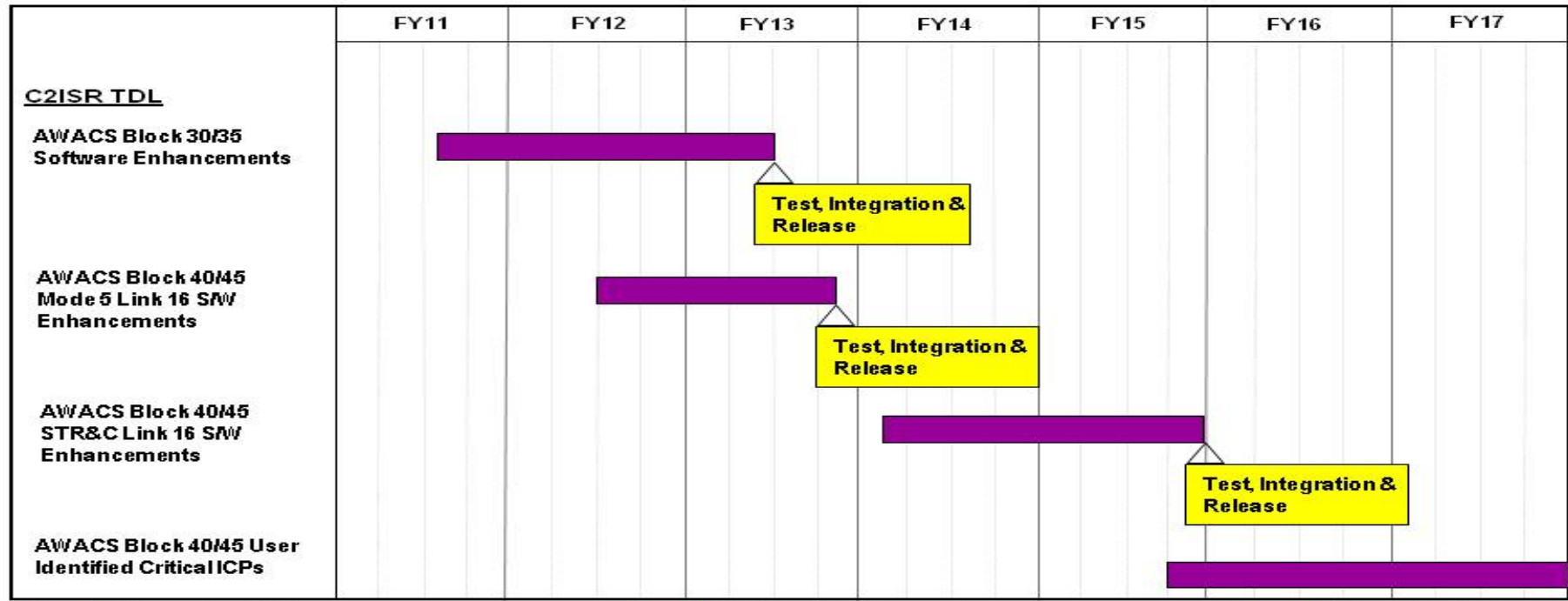
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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

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C2ISR TDL Program Schedule



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

As of 9 Jan 2012

Slide 1

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
AWACS Block 30/35 Software Enhancements	3	2011	2	2013
AWACS Block 40/45 Mode 5 Link 16 Software Enhancements	3	2012	4	2013
AWACS Block 40/45 STR&C Link 16 Software Enhancements	1	2014	4	2015
AWACS Block 40/45 User Identified Critical ICPs	4	2015	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	25.039	17.254	18.086	-	18.086	16.808	-	-	-	Continuing	Continuing
675078: <i>Horizontal Integration</i>	12.541	8.365	8.477	-	8.477	8.455	-	-	-	Continuing	Continuing
675140: <i>Joint Expeditionary Force Experiments</i>	12.498	8.889	9.609	-	9.609	8.353	-	-	-	Continuing	Continuing

Note

The Cost to Complete and Total Cost for MDAP projects in this program element are documented in the R3. The Cost to Complete and Total Cost on the R2 are entered as "Continuing" and not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding.

A. Mission Description and Budget Item Justification

The Command and Control Constellation (C2C) is the sole Air Force program for defining, developing, and assessing integrated effects of global, theater and tactical level Air Force air, space, and cyber Command and Control (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 C2C is the enabling program element for C2 Integration/Modernization. The Air Force is working to establish a C2 framework and architecture to be used as a unifying vision of command and control for each of the services core functions. C2C will support: C2, C2 of Intelligence, Surveillance, and Reconnaissance (ISR), integration by providing architectural analysis, prototyping, experimentation, innovation to develop cross-cutting 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 an integrated mission environment that support C2 planning and execution for air, space, and cyberspace. In-depth development and analyses of C2 operational, systems, and technical architectures are geared towards identifying capability gaps, identifying required "To Be" information services, and evaluating C2 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 joint enterprise solutions.

Project 5078, Horizontal Integration (HI) conducts DOTMLPF analysis and assessments to guide cross-cutting, C2 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 C2 system that enables integrated effects in all warfighter domains. The HI strategy will be validated by Headquarters, Air Force (HAF) to ensure that initiatives are harmonized with the most urgent warfighter needs described by the C2 Capability Assessment Team (CAT) and C2 Core Function Master Plan (CFMP). Once validated, HI funds are applied toward identifying the most critical warfighter capabilities and ensuring they are horizontally integrated into both Air Force and joint C2 programs of record.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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Project 5140, Joint Expeditionary Force Experiments (JEFX) are agile and frequent innovation-focused experiments which lead to pre-fielded operational and technical assessments. Constructive, live and virtual, operationally representative warfighter environments are created to support integration challenges which focus on critical C2 areas of interest that support the joint warfighter; including, C2 of ISR innovation that supports the air, space, and cyberspace domains. JEFX provides the infrastructure and integration initiatives for experimentation with emerging operational concepts and attendant new technologies that fill operational gaps in Air Force capabilities to meet emerging and rapidly changing real world threats. The JEFX strategy is validated and supported by Commander, Air Combat Command (COMACC) and coordinated with Headquarters, Air Force (HAF) ensuring initiatives are harmonized with the most urgent warfighter needs and validated requirements described in the AF Core Function Master Plans (CFMP) and supported through MAJCOM Core function Lead Integrator (CFLI). JEFX initiatives are based on emerging CONOPS and warfighter challenges, important enablers of innovation and transformation, which are designed to support the themes and demonstrate emerging Air Force capabilities to deploy and employ decisive air, space and cyberspace power in support of the Joint Force.

This program is in Budget Activity 7, Operational System Development, because these budget activities include development efforts to upgrade systems currently fielded or have approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	24.229	18.102	18.113	-	18.113
Current President's Budget	25.039	17.254	18.086	-	18.086
Total Adjustments	0.810	-0.848	-0.027	-	-0.027
• Congressional General Reductions	-	-0.848			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.308	-			
• SBIR/STTR Transfer	-0.660	-			
• Other Adjustments	-0.838	-	-0.027	-	-0.027

Change Summary Explanation

FY11 Congressional General Reduction of 0.838M in Other Adjustment row.

FY12 Congressional General Reduction (FFRDC, Sec. 8023) of 0.848M.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
<i>675078: Horizontal Integration</i>	12.541	8.365	8.477	-	8.477	8.455	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Horizontal Integration (HI) develops an integrated mission environment that supports cross-cutting solutions across the air, space, and cyberspace Command and Control (C2) warfighter domain. HI activities include: requirements, architecture, systems engineering, technology development, risk reduction, prototyping, and transition. These activities are required to: identify, design, develop, experiment, and implement C2 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 C2 warfighting capabilities span multiple platforms and domains. These capabilities are routinely being adjusted to meet the changing requirements from the warfighting communities. The HI project is uniquely designed to look across platforms and domains enabling 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 Command and Control Constellation (C2C) elements together and closes the seams in the C2 architectures. Capability analysis identifies areas where interoperability can be improved within the Air Force, among joint services, and coalition partners. Once capability issues are identified, they are prioritized and pilot initiatives are developed to provide solutions to the warfighter challenges to resolve the capability gaps. The HI project also helps to competitively prototype integrated solutions against validated program requirements.

The benefits of these activities 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 it supports competitive prototyping of all acquisition 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 programs. An infrastructure environment manages a continuous distributed operational environment that supports air, space, and cyberspace C2 and rapid acquisition, prototyping, development, integration, and fielding. C2 initiatives may use this infrastructure to mature their development status prior to entry into JEFX for operational and technical suitability assessment.

The HI prototype performances are assessed for operational utility, and the most promising initiatives/technologies will be matured and transitioned into weapon system configuration control baselines. Requirement 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.

In addition, this project supports concept exploration, program definition/risk reduction efforts, and studies that support continuous improvements in C2; including but not limited to: C2 of Intelligence, Surveillance and Reconnaissance (ISR), Remotely Piloted Aircraft (RPA) standards, cyber vulnerabilities, improvements to Air Force Processing Exploitation and Dissemination (PED), imagery and radar development, and interoperability with Joint Service, Allied and Coalition systems. Activities also include studies and analysis to support both current program planning and execution, as well as future program planning.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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>
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This program is in Budget Activity 7, Operational System Development, because these budget activities include development efforts to upgrade systems currently fielded or has approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: Reqmts/ CBP/ Integrated Ops/ C2 Framework</p> <p>Description: Requirements/Capabilites Based Planning (CBP)</p> <p>FY 2011 Accomplishments: Developed and documented integrated Command and Control (C2) requirements for Integrated Air and Missile Defense (IAMD). Analyzed and documented emerging Air Force (AF) C2 requirements. Focused on the future C2 integration/modernization strategy; integration of material sources with theater support in the Langley Air Force Base Operations Support Center (OSF). Concentrated efforts on Integrated Operating Environment (IOE) Space, IOE Electronic Warfare Battle Management, IOE Targeting, IOE Agile Combat Support and Joint Air Ground Integration Cell (JAGIC).</p> <p>FY 2012 Plans: Refine Integrated Air and Missile Defense (IAMD) C2 requirements. Continue future C2 integration/modernization strategy.</p> <p>FY 2013 Plans: Will analyze, develop, and document emerging Air Force (AF) integrated Command and Control (C2) requirements. Will continue future C2 integration/modernization strategy in a series of concept and/or capability development and technology exploration activities designed to integrate C2 operations across air, space, and cyberspace domains.</p>	5.503	2.650	2.852
<p>Title: Arch and SE</p> <p>Description: Architecture Development and Systems Engineering</p> <p>FY 2011 Accomplishments: Continued functional and engineering analysis within Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) community. Emphasized Air-Ground Modernization, C2 of Intelligence, Surveillance, and Reconnaissance (ISR) Integration, Dynamic ISR management, and C2 of cyber requirements.</p> <p>FY 2012 Plans: Continue technical expertise support of functional and engineering analysis within the C2 community. Specific emphasis on Air-Ground Modernization and C2 of ISR Integration.</p> <p>FY 2013 Plans:</p>	0.499	0.364	2.738

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012		
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 Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Will continue functional and systems engineering analysis within the C2 community to flesh out technical architectures and their relationships to operational architectures within the warfighting environment. Specific focus areas and efforts will depend on real world needs, C2 enterprise and C2 of cyber requirements.				
<p>Title: Analysis Integ and SE</p> <p>Description: Analysis Integration and Systems Engineering</p> <p>FY 2011 Accomplishments: Continued analysis and integration efforts. Specific focus areas and effort piloted real world needs and C2ISR enterprise requirements. Continued analysis and transition of the prototype capability developed in previous years.</p> <p>FY 2012 Plans: Complete analysis and integration efforts. Specific focus areas are tailored to real world needs, the C2 enterprise, and C2 of Cyber requirements. Complete the analysis and transition of prototype capability developed in previous years.</p>		0.805	0.519	-
<p>Title: Ops-Tech Analysis-Concept Dev't</p> <p>Description: Ops/Tech Analysis and Concept Development</p> <p>FY 2011 Accomplishments: Developed an Integrated Operational Environment (IOE) capability that improved mobility force integration theater planning efforts. Prototyped a capability for in-transit visibility of Global Strike assets for 8AF. Investigated a multi-level security solution that integrated ISR mobility and weather data that supported political/military operations. Continued the development of an IOE concept to guide AF integration of Command and Control (C2) and provided the necessary material and non-material capabilities that enabled the efficient cross-functional domain flow of monitoring, assessment, planning and execution data.</p> <p>FY 2012 Plans: Complete the modernization of the Command and Control (C2) center programs. Enable a collaborative Integrated Operating Environment (IOE) to present, plan, and execute AF capabilities in support of Joint operations. Improve and complete real time information exchange through the planning and execution phases.</p>		2.438	1.533	-
<p>Title: HI Solutions Assessments</p> <p>Description: Horizontal Integration Solutions Assessment</p> <p>FY 2011 Accomplishments: Selected HI initiatives for execution that fostered enterprise integration across C2ISR programs and supported the DoDI 5000.02 requirements for competitive prototyping. Initiatives selected for funding in FY11 included: Extension to support of near-term</p>		3.296	3.299	2.887

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Cyber integration for situation Awareness (Map The Mission); Extended capabilities for Air-Ground Modernization to integrate AF systems like Theatre Battle Management Core Systems (TBMCS) with a number of Army systems that shared air space information; and gap filling capabilities that addressed shortcomings during operator experiments.</p> <p>FY 2012 Plans: Continue the selection of HI initiatives for execution that will foster enterprise integration across C2 and C2 of cyber programs and support the DoDI 5000.02 requirement for competitive prototyping. After the data call is issued and the submissions evaluated, the selected initiatives will be funded for execution.</p> <p>FY 2013 Plans: Will continue to conduct annual selection of HI initiatives for new execution or continuation that will: a. foster enterprise integration across C2 and extend an Integrated Operating Environment, b. support the DoDI 5000.02 requirements for competitive prototyping and c. aid in refining requirements. Key criteria are near-term warfighter impact and likelihood of transition. Potential initiatives will be evaluated late third/fourth quarter, and the selected initiatives will be funded for execution.</p>			
Accomplishments/Planned Programs Subtotals	12.541	8.365	8.477

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• N/A: 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
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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force **DATE:** February 2012

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>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Requirements/Capability Based Planning (CBP)/ GAPS/ AWS Horizontal Integration	C/FFP	MITRE:Hanscom AFB, MA	0.335	-		-		-		-	Continuing	Continuing	TBD
Requirements/Capability Based Planning (CBP)	C/CPFF	Northrop Grumman:Langley AFB, VA	5.814	2.700	Nov 2011	1.800	Dec 2012	-		1.800	Continuing	Continuing	TBD
Requirements/Capability Based Planning (CBP)(2)	Various	Various:Langley AFB, VA	1.178	-		-		-		-	Continuing	Continuing	TBD
Requirements/CBP/ Assessment/Analysis	MIPR	MIT/LL:Bedford, MA	2.063	-		-		-		-	Continuing	Continuing	TBD
Architecture Development and Systems Engineering/ GAPS/ AWS Horizontal Integration	C/FFP	MITRE:Hanscom AFB, MA	0.489	0.150	Nov 2011	0.466	Nov 2012	-		0.466	Continuing	Continuing	TBD
Architecture Development and Systems Engineering/ GAPS/ AWS Horizontal Integration (2)	C/FFP	Northrop Grumman:Langley AFB, VA	-	-		0.740	Dec 2012	-		0.740	Continuing	Continuing	TBD
Analysis, Integration, and SE/ Capability Roadmaps (2)	C/FFP	MITRE:Hanscom AFB, MA	0.895	0.200	Jan 2012	-		-		-	Continuing	Continuing	TBD
Tech Analysis and Concept Development	C/CPFF	Northrup Grumman:Rome, NY	3.437	1.107	Nov 2011	1.490	Oct 2012	-		1.490	Continuing	Continuing	TBD
Tech Analysis and Concept Development (1)	C/CPFF	BAE:Rome, NY	0.915	0.044	Oct 2011	0.200	Oct 2012	-		0.200	Continuing	Continuing	TBD
Horizontal Integration Solution Assessment (1)	C/FFP	MITRE:Hanscom AFB, MA	4.917	1.972	Oct 2011	1.120	Oct 2012	-		1.120	Continuing	Continuing	TBD
Horizontal Integration Solution Assessment (2)	C/FFP	Jacobs ETASS:Hanscom AFB, MA	-	0.098	Jan 2012	0.061	Jan 2013	-		0.061	Continuing	Continuing	TBD
Horizontal Integration Solution Assessment	C/Various	Not specified.:Hanscom AFB, MA	1.589	1.300	Oct 2011	2.253	Dec 2012	-		2.253	Continuing	Continuing	TBD
Subtotal			21.632	7.571		8.130		-		8.130			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force **DATE:** February 2012

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>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Assessment - 3	C/FFP	Jacobs, ETASS:Hanscom AFB, MA	0.025	-		-		-		-	Continuing	Continuing	TBD
Support Assessment - 4	C/CPFF	Spectrum:Rome, NY	1.545	0.447	Nov 2011	-		-		-	Continuing	Continuing	TBD
Subtotal			1.570	0.447		-		-		-			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support-1	C/FFP	Quantech PASS:Hanscom AFB, MA	0.468	0.247	Jan 2012	0.247	Jan 2013	-		0.247	Continuing	Continuing	TBD
Program Management Support-2	C/FFP	Jacobs ETASS:Hanscom AFB, MA	0.367	0.100	Jan 2012	0.100	Jan 2013	-		0.100	Continuing	Continuing	TBD
Subtotal			0.835	0.347		0.347		-		0.347			

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		24.037	8.365	8.477	-	8.477		

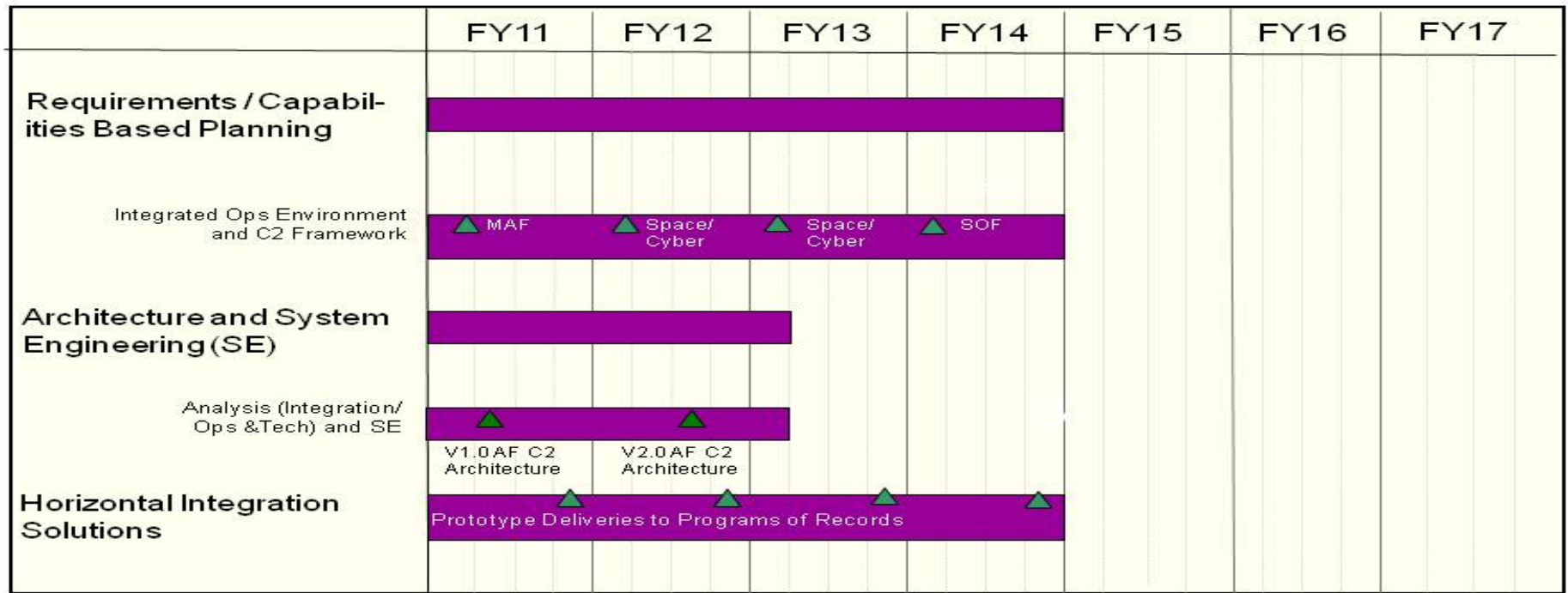
Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>



C2 Constellation Horizontal Integration (HI) Schedule



 Design / development
 Key events

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Requirements/Capability Based Planning	1	2011	4	2014
Integrated Ops Environment and C2 Framework	1	2011	4	2014
Architecture Development and Systems Engineering	1	2011	1	2013
Analysis (Integration/Ops/Tech) and Systems Engineering	1	2011	1	2013
Horizontal Integration Solutions	1	2011	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675140: <i>Joint Expeditionary Force Experiments</i>	12.498	8.889	9.609	-	9.609	8.353	-	-	-	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 (LOEs) are warfighter integration and validation experiments that address operational challenges and are part of the Air Force (AF) Command and Control (C2) integration and experimentation enterprise. Activities include: support to C2 aspects of the AF Integrated Air and Missile Defense (IAMD) mission, Remotely Piloted Aircraft (RPA)/Non-Traditional ISR (NTISR), Homeland Defense (HLD), as well as C2 Integration and Modernization. JEFX provides continued integration and experimentation efforts across the AF C2 seams and programs in air, space and cyber domains as defined by CORONA, HQ AF, and the AF Command and Control Integration Center (AFC2IC).

JEFX/LOE activities explore significant capability gaps across the range of Air Force Command and Control (C2) by means of assessing Concept of Operations (CONOPS), Tactics, Techniques and Procedures (TTPs) and materiel solutions. The activities address critical lessons learned from recent operations and the validated requirements described in the AF Core Function Master Plans (CFMP) and supported through MAJCOM Core Function Lead Integrator (CFLI). JEFX creates and uses representative-experiment enterprise warfighter environments to address joint and coalition warfighter gaps and shortfalls that demonstrate existing and emerging Air Force capabilities to deploy and employ decisive air, space and cyberspace power for the Joint Force Commander and enable innovation and transformation. These unique missions are the major reason JEFX is an experiment and not simply a demonstration or exercise. Activities also include studies and analyses to support current program planning and execution, as well as future program planning.

This program is in Budget Activity 7, Operational System Development, these budget activities include development efforts to upgrade systems currently fielded or has approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013
Title: Requirements Identification and SE	5.673	1.921	2.225
Description: Spiral develop systems architecture, systems engineering, and integration of initiatives into a cohesive system of systems process			
FY 2011 Accomplishments: Continued JEFX 2011 (JEFX 11) experimentation efforts with focus on tactical and strategic architectures, communications, systems, and Tactics, Techniques, and Procedures (TTPs) affected by loss or disruption of space signals due to atmospheric or intentional factors; evaluated effects and refined technologies; TTPs improved AF contributions to the joint warfighters			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012		
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 Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>assuring mission assurance in a contested environment. Increased rapid spiral fielding in support of tactical operations; airborne communication integration.</p> <p>FY 2012 Plans: Continue support for Architecture, Systems Engineering (SE), and JEFX activities. JEFX 2012 (JEFX 12) LOEs focus on the four issues outlined per CORONA Fall 2009 direction: 1) Lack AF-wide IAMD knowledge & emphasis—strategic to tactical; 2) Significant Commanders Numbered Air Force (C-NAF) organization & personnel deficiencies; 3) Lack exercise, experimentation & wargame oversight & fidelity; and 4) Obsolete C2 radars/sensors and C2 systems lack integration with joint partners. To address these issues, JEFX will initiate integration of the Ballistic Missile Defense (BMD) systems and process initiatives into the Air Operations Center (AOC) Weapons System with the goal of full integration into the Joint Counter Air Mission capabilities as relevant operational scenarios for JEFX 2012.</p> <p>FY 2013 Plans: Will continue integration and experimentation across Air Force (AF) C2 seams and programs in air, space and cyber domains as defined by CORONA, HAF, and AFC2IC. JEFX 2013 (JEFX 13) will complete Integrated Air and Missile Defense (IAMD) efforts and then begin to provide some support for C2 of Remotely Piloted Aircraft (RPA)/Non-Traditional ISR (NTISR) and other C2 Integration/Modernization activities to include requirements identification, systems engineering of initiatives and limited objective experiments (LOEs) focusing on the integration of C2 services. Requirements validation will be established in MAJCOM-directed CFMP processes to connect warfighter needs to initiative identification. In addition to validating materiel solutions, experimentation will add value by recommending changes to standing or new concepts of employment, concepts of operations, tactics, techniques and procedures (TTPs), in conjunction with the Programs of Record and Centers of Excellence for Tactics, Doctrine, Operations, and Education. The experimentation team may perform either an operational utility and/or a technical assessment which feeds final experimentation products.</p>				
<p>Title: Plan and Design</p> <p>Description: Plan, design, coordinate, assess and report the JEFX experiments, provide expertise to support initiative selection, acquisition, program management, communications and systems planning.</p> <p>FY 2011 Accomplishments: Continued 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; evaluated effects and refined technologies, aimed at improving AF contributions to the Joint Warfighters to assure mission assurance in a contested environment. Increased focus on rapid spiral fielding in support of tactical operations; airborne communication integration.</p> <p>FY 2012 Plans:</p>		0.964	2.263	2.743

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012		
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 Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Continue support for plan & design activities. JEFX 12 LOEs will focus on the four issues outlined per CORONA Fall 2009 direction: 1) Lack AF-wide IAMD knowledge & emphasis—strategic to tactical; 2) Significant C-NAF organization & personnel deficiencies; 3) Lack exercise, experimentation & wargame oversight & fidelity; and 4) Obsolete C2 radars / sensors and C2 systems lack integration with joint partners. To address these issues, JEFX will initiate integration of the BMD systems, other technology, and process initiatives into the AOC Weapons System with the goal of full integration into the Joint Counter Air Mission capabilities. Also initiate the Air Sea Battle concept as the relevant operational scenario for JEFX 12. Initiate the Air Sea Battle concept as the relevant operational scenario for JEFX 12.</p> <p>FY 2013 Plans: JEFX will leverage AF and joint sponsored experimentation events (i.e. AGILE Fire, Coalition Warfighter Interoperability Demonstration (CWID), Trident Warrior, etc.) when and where feasible. JEFX will develop internally-generated, stand-alone events employing simulation facilities, as necessary. Limited engineering capability will be available to support attendance at external venues as well as hosting/building internal events.</p>				
<p>Title: Develop Initiatives</p> <p>Description: Develop initiatives to introduce new technologies and operational capabilities into the Aerospace Expeditionary Force (AEF) Concept of Operations (CONOPS)</p> <p>FY 2011 Accomplishments: Continued 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, TTPs aimed at improving AF contributions to the Joint Warfighters assuring mission assurance in a contested environment. Increased the focus on rapid spiral fielding in support of tactical operations; airborne communication integration.</p> <p>FY 2012 Plans: Continue support for initiative development. JEFX 12 LOEs will focus on the four issues outlined per CORONA Fall 2009 direction: 1) Lack AF-wide IAMD knowledge & emphasis—strategic to tactical; 2) Significant Commander -Numbered Air Force (C-NAF) organization & personnel deficiencies; 3) Lack exercise, experimentation & wargame oversight & fidelity; and 4) Obsolete C2 radars/sensors and C2 systems lack integration with joint partners. To address these issues, JEFX will initiate integration of the Ballistic Missile Defense systems/other technology and process initiatives into the Air Operations Center Weapons System with the goal of full integration into the Joint Counter Air Mission capabilities. Also initiate the Air Sea Battle concept as the relevant operational scenario for JEFX 12.</p> <p>FY 2013 Plans: JEFX will sponsor initiatives that are primarily industry based with focus on leveraging existing government and commercial technologies to address a specific integration shortfall. Some initiatives will be developed by the HI portion of this program with</p>		1.545	2.338	2.337

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012		
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 Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
specific interest in operational and/or technical utility. These requirements driven experiments support the programs of record by examining; a. integration of incremental program improvements, b. potential candidates for upcoming program selection, and c. potential rapid fielding integration and other transition efforts.				
<p>Title: Define and Build Events</p> <p>Description: Implement architectural configuration, conduct M&S, install and test the communications infrastructure and execute the experiment</p> <p>FY 2011 Accomplishments: Continued 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; evaluated effects and refined technologies, TTPs aimed at improved AF contributions to the Joint Warfighters assuring mission assurance in a contested environment. Increased focus on rapid spiral fielding in support of tactical operations; airborne communication integration.</p> <p>FY 2012 Plans: Continue support for Architecture Implementation activities. JEFX 12 LOEs will focus on the 4 issues outlined per CORONA Fall 2009 direction: 1) Lack AF-wide Integrate Air and Missile Defense (IAMD) knowledge & emphasis—strategic to tactical; 2) Significant Commander - Numbered Air Force (C-NAF) organization & personnel deficiencies; 3) Lack exercise, experimentation & wargame oversight & fidelity; and 4) Obsolete C2 radars/sensors, C2 systems lack integration with joint partners. To address these issues, JEFX will initiate integration of the Ballistic Missile Defense (BMD) systems & other technology, and process initiatives into the Air Operations Center Weapons System with the goal of full integration into the Joint Counter Air Mission capabilities. Also initiate the Air Sea Battle concept as the relevant operational scenario for JEFX 12.</p> <p>FY 2013 Plans: Will continue to support the migration of the JEFX program from a major venue to a series of LOE venues with focus on initiative integration and systems engineering to combine initiatives with either AF/Joint sponsored or stand-alone events.</p>		4.142	2.265	2.181
<p>Title: Assessment and Transition</p> <p>Description: Transition successful JEFX-assessed, and Air Force approved, warfighting capabilities for fielding into an integrated C2 baseline</p> <p>FY 2011 Accomplishments: Continued 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; evaluated effects and refining technologies, TTPs</p>		0.174	0.102	0.123

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
aimed at improved AF contributions to the Joint Warfighters assuring mission assurance in a contested environment. Increased focus on rapid spiral fielding in support of tactical operations; airborne communication integration.			
FY 2012 Plans: Continue support for Transition activities. JEFX 12 LOEs will focus on the four issues outlined per CORONA Fall 2009 direction: 1) Lack AF-wide IAMD knowledge & emphasis—strategic to tactical; 2) Significant C-NAF organization & personnel deficiencies; 3) Lack exercise, experimentation & wargame oversight & fidelity; and 4) Obsolete C2 radars/sensors, C2 systems lack integration with joint partners. To address these issues, JEFX will initiate integration of the BMD systems & other technology and process initiatives into the AOC Weapons System with the goal of full integration into the Joint Counter Air Mission capabilities.			
FY 2013 Plans: The program transition under the JEFX Limited Objective Experiments (LOEs) paradigm will change significantly from a long-lead plan to a near-term transition with the Programs of Record or initiative sponsor. This paradigm will continue to focus upon the initiative's transition with validation through operational and technical assessments. It places a much higher priority under the new JEFX scheme to ensure technical and operation transition is possible upon completion of JEFX.			
Accomplishments/Planned Programs Subtotals	12.498	8.889	9.609

C. Other Program Funding Summary (\$ in Millions)										
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u> <u>Total Cost</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing Continuing

D. Acquisition Strategy
JEFX supports evolutionary acquisition of multiple programs by providing venues and initiatives 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force										DATE: February 2012			
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)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Requirements Identification and SE	C/CPAF	MITRE:Hanscom AFB, MA	1.900	0.458	Oct 2011	0.854	Oct 2012	-		0.854	Continuing	Continuing	TBD
Requirements Identification and SE (1)	C/Various	Various:Hanscom AFB, MA	0.426	0.051	Nov 2011	0.061	Oct 2012	-		0.061	Continuing	Continuing	TBD
Requirements Identification and SE (2)	C/CPFF	Spectrum:Rome, NY	9.869	1.358	Nov 2011	1.244	Oct 2012	-		1.244	Continuing	Continuing	TBD
Plan and Design	C/CPAF	MITRE:Hanscom AFB, MA	0.992	0.300	Nov 2011	0.358	Oct 2012	-		0.358	Continuing	Continuing	TBD
Plan and Design (1)	C/Various	Various:Hanscom AFB, MA	0.052	0.050	Nov 2011	0.060	Oct 2012	-		0.060	Continuing	Continuing	TBD
Plan and Design (2)	C/CPAF	L-3 Services:Hurlburt Field, FL	1.780	1.843	Nov 2011	2.244	Oct 2012	-		2.244	Continuing	Continuing	TBD
Plan and Design (3)	C/CPAF	Jacob Sverdrup:Hurlburt Field, FL	0.300	-		-		-		-	Continuing	Continuing	TBD
Develop Initiatives	C/Various	Various:Hanscom AFB, MA	1.000	0.639	Nov 2011	0.763	Oct 2012	-		0.763	Continuing	Continuing	TBD
Develop Initiatives (1)	C/CPFF	Northrup Grumman:Rome, NY	1.711	1.367	Oct 2011	1.252	Nov 2012	-		1.252	Continuing	Continuing	TBD
Develop Initiatives (2)	C/CPFF	SAIC:San Diego, CA	0.456	0.275	Oct 2011	0.252	Nov 2012	-		0.252	Continuing	Continuing	TBD
Define and Build Events	C/CPAF	MITRE:Hanscom AFB, MA	0.496	0.150	Nov 2011	0.179	Oct 2012	-		0.179	Continuing	Continuing	TBD
Define and Build Events (1)	C/Various	Various:Hanscom AFB, MA	0.189	0.180	Oct 2011	0.215	Oct 2012	-		0.215	Continuing	Continuing	TBD
Define and Build Events (2)	MIPR	98 RANWG:Nellis AFB, NV	0.225	0.125	Oct 2011	0.115	Oct 2012	-		0.115	Continuing	Continuing	TBD
Define and Build Events (3)	C/CPFF	Northrup Grumman:Rome, NY	1.882	1.504	Oct 2011	1.378	Oct 2012	-		1.378	Continuing	Continuing	TBD
Define and Build Events (4)	MIPR	46TS:Eglin AFB, FL	0.593	0.250	Nov 2011	0.229	Oct 2012	-		0.229	Continuing	Continuing	TBD
Define and Build Events (5)	MIPR	AFC2IC:Hampton, VA	3.982	-		-		-		-	Continuing	Continuing	TBD
Assessment and Transition	C/CPAF	MITRE:Hanscom AFB, MA	0.165	0.050	Nov 2011	0.060	Nov 2012	-		0.060	Continuing	Continuing	TBD

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force **DATE:** February 2012

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>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Assessment and Transition (1)	C/Various	Various:Hanscom AFB, MA	0.052	0.050	Oct 2011	0.060	Oct 2012	-		0.060	Continuing	Continuing	TBD
Subtotal			26.070	8.650		9.324		-		9.324			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Experiment Support	C/FFP	Quantech PASS:Hanscom AFB, MA	0.450	0.239	Jan 2012	0.285	Jan 2013	-		0.285	Continuing	Continuing	TBD
Subtotal			0.450	0.239		0.285		-		0.285			

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			26.520	8.889		9.609		-		9.609			

Remarks

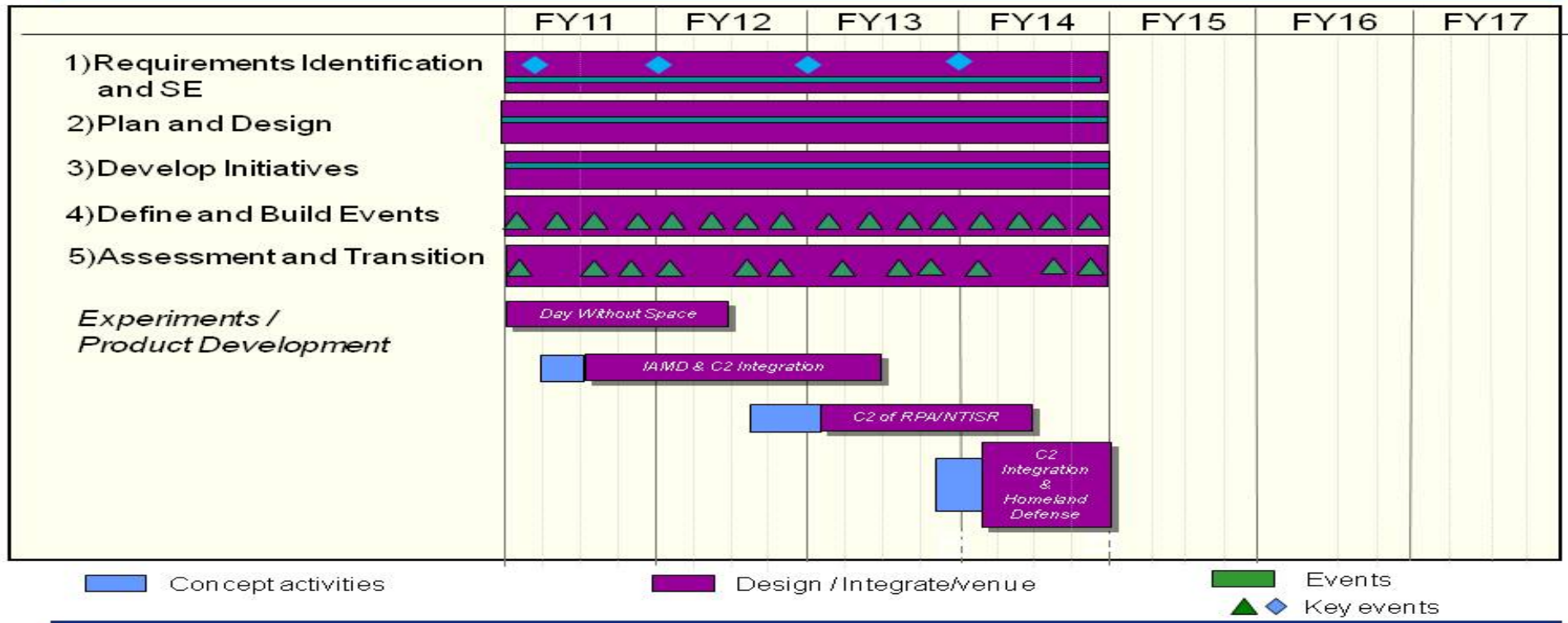
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0207449F: C2 Constellation

PROJECT
 675140: Joint Expeditionary Force Experiments



C2 Constellation Joint Expeditionary Force Experiment (JEFX) Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Requirements Identification and System Engineering	1	2011	4	2014
Plan and Design	1	2011	4	2014
Develop Initiatives	1	2011	4	2014
Define and Build Events	1	2011	4	2014
Assessment and Transition	1	2011	4	2014
Experiments/Product Development	1	2011	4	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207452F: <i>DCAPES</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	-	15.690	-	15.690	15.081	14.015	14.092	14.441	Continuing	Continuing
674802: <i>DELIBERATE AND CRISIS ACTION PLANNING AND EXECUTION SEGMENT (DCAPES)</i>	-	-	15.690	-	15.690	15.081	14.015	14.092	14.441	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

A. Mission Description and Budget Item Justification

The Deliberate and Crisis Action Planning and Execution Segments (DCAPES) Program Element (PE) includes Deliberate and Crisis Action Planning and Execution Segments (DCAPES), a system 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 to modify systems to consume authoritative force structure from Global Force Management-Data Initiative (GFM-DI) organizational servers, linking the identifiers to or replacing current identifiers and, as applicable, exposing the data in a net-centric fashion.

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.

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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207452F: <i>DCAPES</i>
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Funding will also support development and systems engineering activities, to include (1) facilitating improvements to system effectiveness through efficient segregation of mission capabilities (apps, services, applications) from underlying networking, middleware and computing infrastructures by using common architecture, standards, and services, and (2) employing a rapid/agile IT acquisition process to effectively deliver capabilities to the warfighter.

This program is in Budget Activity 7, Operational System Development. These budget activities include development efforts to upgrade systems currently fielded or having approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	-	15.690	-	15.690
Current President's Budget	-	-	15.690	-	15.690
Total Adjustments	-	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-	-	-

Change Summary Explanation

In FY 2013, Project Number 674802, Deliberate and Crisis Action Planning and Execution Segment (DCAPES), efforts transferred from PE 0207438, Theater Battle Management (TBM) C4I, Project Number 674802, Deliberate and Crisis Action Planning and Execution Segment (DCAPES), in order to provide clarity to the effort by providing a singular PE and Project Number.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Loosely Couple DCAPES/JOPEs Interfaces	-	-	15.690
Description: Continue Increment 2 requirements definition, prototyping, development, testing, interoperability, sustainment, and service oriented architecture transition.			
FY 2013 Plans: Will field Loose Coupling Release 2 patch v5.0.0.1 (achieve Loose Coupling), address critical warfighter requirements, maintain interoperability, and initiate Inc 2b development effort. Will field LOGFAC 2.0.			
Accomplishments/Planned Programs Subtotals	-	-	15.690

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207452F: <i>DCAPES</i>
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D. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0207452F: <i>DCAPES O&M</i>	0.000	0.000	5.780	0.000	5.780	6.057	6.242	6.385	6.467	Continuing	Continuing

E. 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.

F. 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.

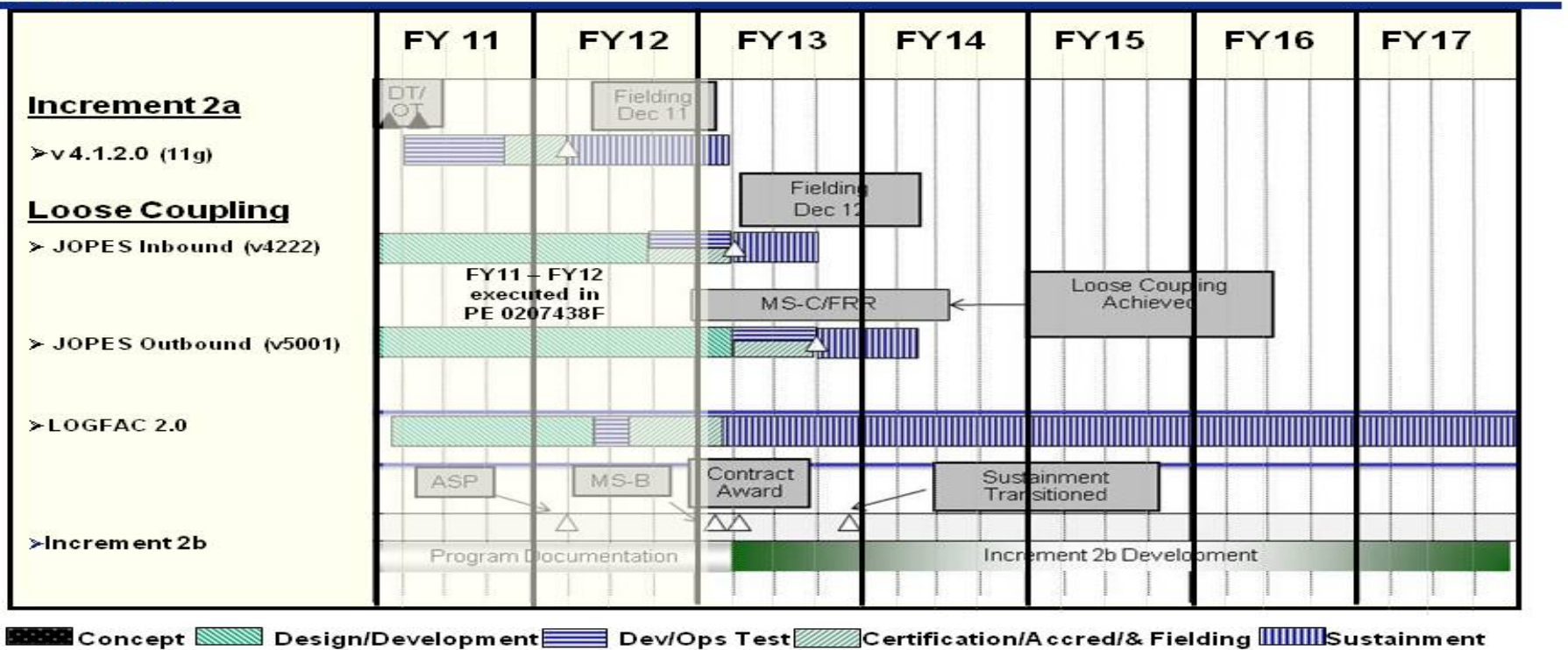
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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207452F: <i>DCAPES</i>	PROJECT 674802: <i>DELIBERATE AND CRISIS ACTION PLANNING AND EXECUTION SEGMENT (DCAPES)</i>



DELIBERATE AND CRISIS ACTION PLANNING AND EXECUTION SEGMENT (DCAPES)

U.S. AIR FORCE



2013 PB R-Docs

As of 16 Dec 2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207452F: <i>DCAPES</i>	PROJECT 674802: <i>DELIBERATE AND CRISIS ACTION PLANNING AND EXECUTION SEGMENT (DCAPES)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
INCREMENT 2a	1	2013	1	2013
--- Increment 2a 4.1.2.0 Sustainment	1	2013	1	2013
LOOSE COUPLING	1	2013	3	2014
- JOPES Inbound (v4.2.2.2)	1	2013	2	2013
--- JOPES Inbound (v4.2.2.2) Ops Test/Certification	1	2013	1	2013
--- JOPES Inbound (v4.2.2.2) Sustainment	1	2013	2	2013
- JOPES Outbound (v5.0.0.1)	1	2013	2	2014
--- JOPES Outbound (v5.0.0.1) Design/Development	1	2013	1	2013
--- JOPES Outbound (v5.0.0.1) Ops Test/Certification	2	2013	3	2013
--- JOPES Outbound (v5.0.0.1) Sustainment	4	2013	1	2014
LOGFAC 2.0	1	2013	4	2017
--- LOGFAC 2.0 Certification/Accreditation	1	2013	1	2013
--- LOGFAC 2.0 Sustainment	1	2013	4	2017
INCREMENT 2b	1	2013	4	2017
--- Increment 2b: Documentation	1	2013	1	2013
--- Increment 2b: Development	2	2013	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	162.756	74.018	24.241	-	24.241	23.292	22.274	23.008	30.647	Continuing	Continuing
670003: <i>JSTARS</i>	162.756	74.018	24.241	-	24.241	23.292	22.274	23.008	30.647	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The Cost to Complete and Total Cost for MDAP projects in this program element are documented in the R3. The Cost to Complete and Total Cost on the R2 are entered as "Continuing" and not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding.

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 Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) and targeting information on moving and stationary ground/surface targets to include dismounts, 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 regional/geographic commanders to effectively make and execute battlefield decisions at the component commander's level to battlefield forces. It also helps achieve predictive battle space awareness. Activities also include studies and analyses to support both current program planning and execution and future program planning.

This program element enhances the war fighter'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 C2ISR, Network Centric Operations capabilities, and interoperability with Joint Service, Allied, and Coalition systems.

This program element comprises two major efforts, modernization and re-engineing:

I. Modernization:

The modernization effort consists of multiple projects to develop and integrate system improvements, platform wide. These include, but are not limited to, the following: Spiral development, Enhanced Land Maritime Mode (ELMM), Diminishing Manufacturing Sources (DMS), Cockpit Avionics Upgrades, and Communications and Networking Upgrades (CNU). The modernization effort also includes support for Joint STARS Test and Infrastructure as well as upgrades to the Training and Support Systems. These efforts are detailed below.

Spiral Development - The spiral development is an umbrella for various technology development/ insertion efforts to enhance target identification, data processing and transmittal and weapon control capabilities, such as Joint STARS Net Enabled Weapons (JNEW) and Joint Surface Warfare (JSuW), Joint STARS Radar Modernization (JSRM), Blue Force Tracking, Battlefield Airborne Communication Node (BACN) and future program planning for AoA recommendations. The JSuW-JNEW effort includes participation in the JSuW Joint Capability Technology Demonstration (JCTD) and Engineering and Manufacturing Development (EMD) for

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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Network Enabled Weapons (NEW) which includes, but is not limited to, Joint Air to Surface Standoff Missile-Air Surface Warfare-Anti-Surface Warfare (JASSM-ASuW). The JSRM program applies the Multi-Platform Radar Technology Insertion Program (MP-RTIP) technology to JSTARS. The MP-RTIP capability on the E-8 will provide the ability to detect, track and identify both stationary and moving ground vehicles. Spiral development also supports requirements for current Urgent Operational Needs (UON), Quick Reaction Capabilities (QRCs), top-down directed efforts, requirements definition, capability gap analysis, Pre-MSA technical risk reduction activities, Blue Force Tracking as well as other large airborne platform integration efforts including Self Defense Suite (SDS), and radar and aircraft performance improvements.

Programs and projects under Spiral Development are procured under Kill Chain Enhancement- MN-38203.

Enhanced Land Maritime Mode (ELMM) - The ELMM program, supporting Air Sea Battle, implements the maritime tracking & improved land tracking upgrade to provide land and maritime tracking capability and improved imagery. ELMM incorporates imagery compression and advanced radar modes.

Diminishing Manufacturing Sources (DMS) - DMS issues are categorized as Prime Mission Equipment-Diminishing Manufacturing Sources (PME-DMS) and Avionics DMS issues and are top issues for fleet viability. The PME-DMS program will address hardware and software DMS issues and COT technology refresh for both the Operator Work Station (OWS) Clipper computer and the Radar Airborne Signal Processor (RASP). Equipment Replacement will include: OWS processor, Central Computer Mass Storage Device (CCMSD), OWS Mass Storage Device (OWSMSD), Removable Media Module (RMM), Fiber Switches, Local Area Network (LAN) HUB, Serial Data HUB, RASP, and a Radar Sensor Interface (RSI) enabling the legacy radar receiver to communicate with the new RASP. The OWS operating system (Open VMS) will be upgraded to a modern Linux OS architecture, the 19" OWS display will be replaced with 27" displays, and software applications including Open Office (MS Office-like) and MoveINT Client will be installed. The Avionics DMS issues include, but are not limited to, Aircraft Information Program (AIP), Ground Proximity Warning System (GPWS), Communications, Navigation, Surveillance and Air Traffic Management (CNS/ATM) upgrades, Control and Display Unit (CDU) Replacement, Emergency Locator Transmitter (ELT), Flight Data Recorder (FDR), Electronic Flight Bag (EFB), 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) , Automatic Dependent Surveillance-Broadcast (ADS-B), a new Flight Management System (FMS), Flight Director, Instrument Landing System (ILS) Marker Beacon multi-mode receiver (MMR), and digital engine instruments.

Communications and Networking Upgrades (CNU) - A multi-phased CNU effort includes, but is not limited to, replacement of the E-8C Link 16 Tactical Data Link (TDL) equipment with National Security Agency (NSA) Cryptographic Modernization Program (CMP) compliant equipment, the Multifunctional Information Distribution System (MIDS) Joint Tactical Radio System (JTRS), Integrated Broadcast Services (IBS), the Family of Advanced Beyond Line of Sight Terminals (FAB-T), Advanced Tactical Data Links integration, Airborne Networking, and Network Centric operation enhancements.

Test and Infrastructure - The test infrastructure includes the Joint STARS Extended Test Support (JETS) Program, Joint STARS Test Force (JTF), and C2 Enterprise Integration Facility (CEIF). All JSTARS efforts rely on the components of the test infrastructure to carry out RDT&E activities. The infrastructure includes but is not limited to a dedicated, T-3 test aircraft, laboratories, support facilities, Priority Level (PL-2) security, information assurance, and range support.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	PE 0207581F: <i>JOINT STARS</i>

Training and support systems upgrades as a part of modernization 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).

Other modernization efforts include interoperability with manned and unmanned platforms; space data links; advanced Battle-Management Command and Control (BMC2) concepts; 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); Advanced Radar Modes (ARM); Aided Target Recognition (ATR); Synthetic Aperture Radar (SAR)/Enhanced Synthetic Aperture Radar (ESAR); Network Centric Collaborative Targeting (NCCT); and Beyond Line of Sight (BLOS) Network Architecture Upgrades (BNAU).

II. Re-engineing:

The second major Joint STARS effort is Re-Engineering. The JSTARS Re-Engineering program is a System Design and Demonstration (SDD) program to replace legacy TF33-P102C engines with JT8D-219 engines. The JT8D-219 engines are predicted to provide the E-8C aircraft improved performance, including thrust, altitude capability, mission duration, time to climb, critical field length (i.e. takeoff performance), fuel efficiency, noise abatement, emissions and reliability. It also adds the potential for additional electrical power generation for future system upgrades. SDD efforts include flight test, development of Weapon System trainer modification hardware and software, technical orders (i.e. flight and maintenance manuals) and technical data development, logistic development and analysis, technical analysis and evaluation, engineering support for MIL-STD airworthiness qualification, flight data analysis and upgrade of the T-3 test aircraft's Propulsion Pod System (PPS) and spare engines including upgrade of used JT8D-219 engines to make production representative. A PPS consists of new engines (4), pneumatic bleed air system, engine build up unit, thrust reversers, nacelles, pylons, exhaust ducts, controls, and instrumentation.

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

Re-Engineering SDD will support non-recurring engineering activities including development, flight testing, flight manuals, pneumatic bleed air system, Weapon System Trainer development and MIL-STD air worthiness qualification.

This program is in Budget Activity 7, Operational System Development, these budget activities include development efforts to upgrade systems currently fielded or has approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	168.917	121.610	29.292	-	29.292
Current President's Budget	162.756	74.018	24.241	-	24.241
Total Adjustments	-6.161	-47.592	-5.051	-	-5.051
• Congressional General Reductions	-	-0.592			
• Congressional Directed Reductions	-	-47.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-4.727	-			
• Other Adjustments	-1.434	-	-5.051	-	-5.051

Change Summary Explanation

FY11 Congressional General Reduction of 1.434M in Other Adjustment row.

FY12 Congressional General Reduction (FFRDC, Sec. 8023) of 0.592M.

FY12 Congressional Directed Reduction of 47.0M from FY12 Defense Appropriation Act. Reason: contract delays

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Modernization	78.215	39.650	0.660	-	0.660
Description: Multiple projects to develop and integrate system improvements, platform wide					
FY 2011 Accomplishments: Completed JSuW Link 16 JCTD, continued JSRM radar receiver development, completed SYERS Demo, continued Avionics DMS development, completed ELMM SDD and began production, continued CNU-JTRS replacement development, continued 8.33/25 kHz Radio with SINCGARS retrofit, continued PME DMS RASP SDD, FVB mitigation, AoA, QRC efforts, and Spiral Development.					
FY 2012 Plans: Completing JSRM radar receiver development and beginning flight demo, continuing Avionics DMS development and studies, ELMM SDD production and retrofit, beginning CNU-JTRS production, continuing 8.33/25 kHz Radio with SINCGARS retrofit, PME DMS RASP and OWS SDD, FVB mitigation, QRC efforts, and Spiral Development.					

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Not applicable. FY 2013 Base Plans: Will complete JSRM radar receiver flight demo, will continue Avionics DMS development, will complete ELMM production and retrofit, will continue CNU-JTRS production, will complete 8.33/25 kHz Radio with SINCGARS retrofit, will complete PME DMS RASP and OWS SDD, will continue FVB mitigation, will continue QRC efforts, will continue Spiral Development. FY 2013 OCO Plans: N/A					
Title: Test and infrastructure Description: Test and Infrastructure Effort FY 2011 Accomplishments: Supported Test and Infrastructure Effort including but not limited to Joint Test Force, JETS contract, CEIF, Information Assurance, range support, and PL-2 security; supporting T-3 aircraft, test labs, facilities. FY 2012 Plans: Supporting Test and Infrastructure Effort including but not limited to Joint Test Force, JETS contract, CEIF, weight reduction studies, Information Assurance, range support, PL-2 security, T-3 aircraft, and test labs and facilities. Not applicable. FY 2013 Base Plans: Will support Test and Infrastructure Effort including but not limited to Joint Test Force, JETS contract, CEIF, software development, weight reduction studies, Information Assurance, range support, and PL-2 security; will support T-3 aircraft, test labs, facilities. FY 2013 OCO Plans: N/A	42.745	29.629	23.581	-	23.581
Title: Re-Engining	41.796	4.739	-	-	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Description: Replaces legacy TF-33 Propulsion Pod System (PPS) consisting of new engines, thrust reversers, nacelles, pylons, exhaust ducts, controls, instrumentation and all associated components.</p> <p>FY 2011 Accomplishments: Supported non-recurring engineering activity including development, FAA Certification, Flight Testing, Flight Performance Manuals, Pneumatic SDD (bleed air), Maintenance Training.</p> <p>FY 2012 Plans: Supporting SDD activity including Flight Testing, Flight Manuals, Pneumatic Bleed Air System, Weapon System Trainer, air worthiness qualification, production shutdown and storage.</p> <p>Not applicable.</p> <p>FY 2013 Base Plans: N/A</p> <p>FY 2013 OCO Plans: N/A</p>					
Accomplishments/Planned Programs Subtotals	162.756	74.018	24.241	-	24.241

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PE 0207581F, APAF: <i>JSTARS Modernization</i>	6.306	22.558	59.320	0.000	59.320	47.384	24.167	24.867	25.754	Continuing	Continuing

E. Acquisition Strategy

Development efforts are performed in an incremental method. Most major programs will be sole source to Northrop Grumman Corp. in Melbourne, Florida and Norwalk, Connecticut. Trainer programs are sole source to Rockwell Collins in Sterling, Virginia.

F. 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force **DATE:** February 2012

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>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Spiral Development	Various	NGC:Melb, FL	116.402	0.240	Nov 2011	0.160	Nov 2012	-		0.160	Continuing	Continuing	TBD
Communications & Network Upgrade (CNU)(Joint Tactical Radio System (JTRS))	SS/CPAF	NGC:Melb, FI	7.629	0.034	Nov 2011	-		-		-	0.000	7.663	7.697
ELMM/ARM	SS/CPFF	NGC:Melb, FI	96.509	-		-		-		-	0.000	96.509	96.545
PME DMS	SS/CPIF	NGC:Melb, FI	157.814	30.010	Nov 2011	-		-		-	0.000	187.824	202.612
JSRM	SS/CPAF	NGC:Melb, FI	104.877	4.366	Jan 2012	-		-		-	Continuing	Continuing	TBD
Avionics DMS	SS/CPAF	NGC:Melb, FL	3.062	2.345	Nov 2011	0.471	Jan 2012	-		0.471	Continuing	Continuing	TBD
Re-Engining	SS/CPIF	NGC:Melb, FI	296.667	4.424	Dec 2011	-		-		-	0.000	301.091	366.389
Subtotal			782.960	41.419		0.631		-		0.631			

Remarks
Where Various Contract Method & Types take place, earliest date funds will be obligated is noted.

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	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)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
E-8C JSTARS Ext. Test Spt (JETS)	SS/CPAF	NGC:Melb, FI	612.260	24.229	Nov 2011	17.680	Nov 2012	-		17.680	Continuing	Continuing	TBD
JTF Test Ops/Support	Various	JTF:Melb, FI	86.242	3.433	Nov 2011	4.530	Nov 2012	-		4.530	Continuing	Continuing	TBD
Subtotal			698.502	27.662		22.210		-		22.210			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force **DATE:** February 2012

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>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
Where Various Contract Method & Types take place, earliest date funds will be obligated is noted.

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA	Various	Various:Bedford, MA	10.497	4.937	Nov 2011	1.400	Nov 2012	-		1.400	Continuing	Continuing	TBD
Subtotal			10.497	4.937		1.400		-		1.400			

Remarks
Where Various Contract Method & Types take place, earliest date funds will be obligated is noted.

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract	
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
Project Cost Totals		1,491.959	74.018			24.241		-		24.241		

Remarks

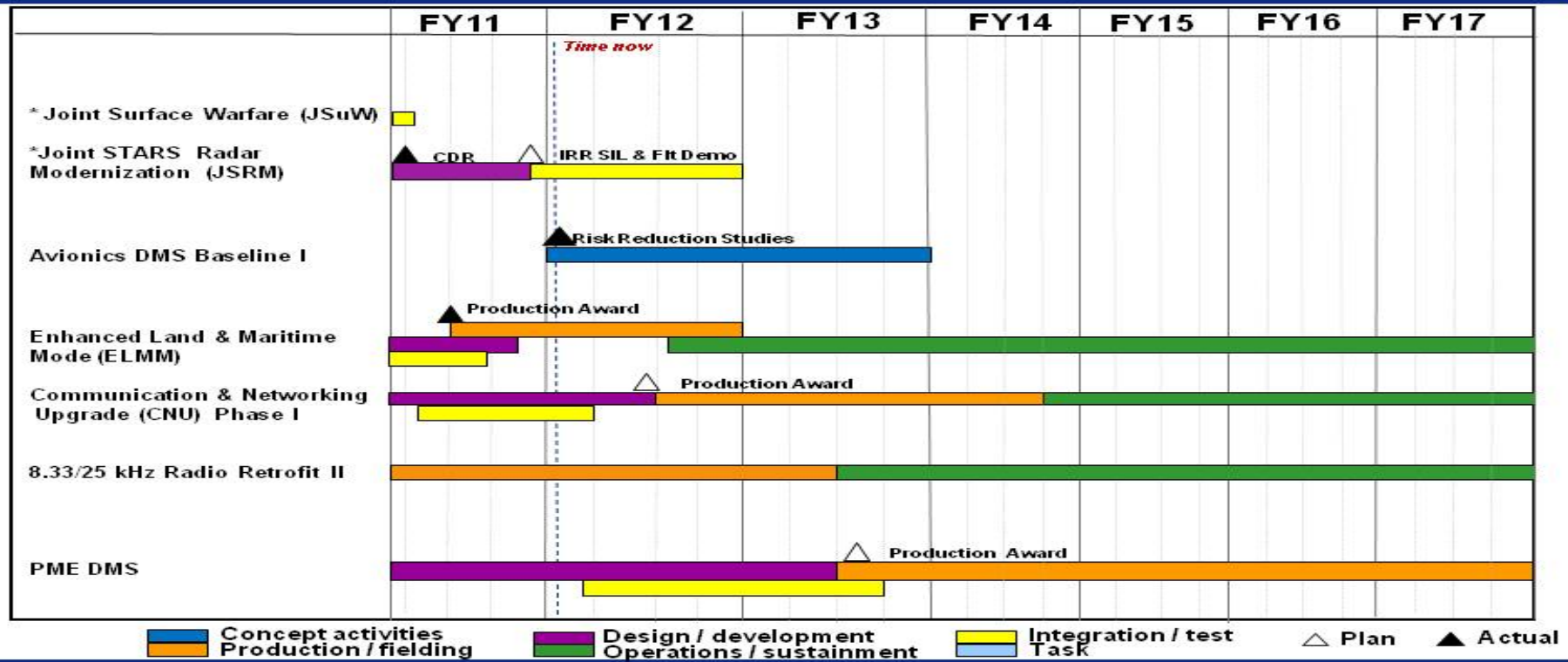
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0207581F: JOINT STARS

PROJECT
 670003: JSTARS



Joint STARS Modernization Program Schedule



*Demonstrations – no follow-on production
 As of: 3 Jan 12

Acronyms: PDR – Preliminary Design Review, IRR – Integration Readiness Review, EMD – Engineering and Management Development, CDR – Critical Design Review, SIL – System Integration Lab

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

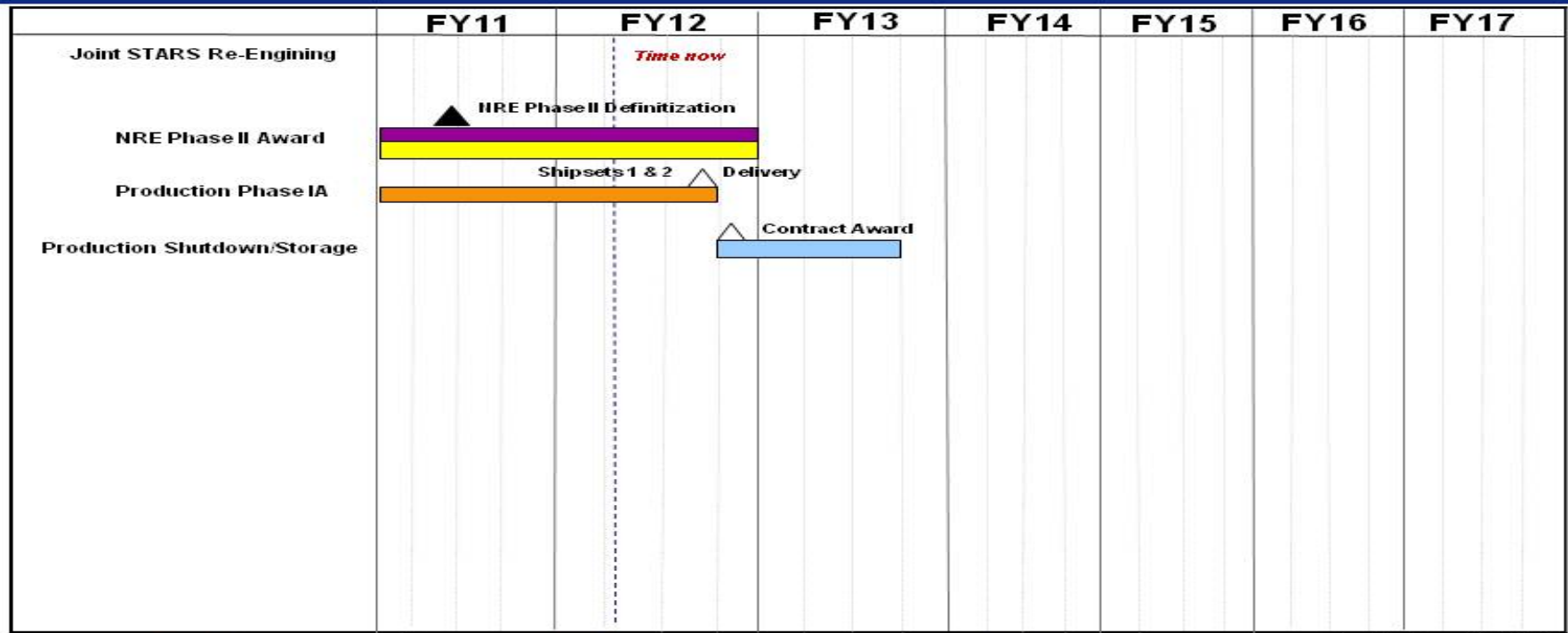
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0207581F: JOINT STARS

PROJECT
 670003: JSTARS



Joint STARS Re-engining Program Schedule



■ Concept activities
 ■ Production / fielding
 ■ Design / development
 ■ Operations / sustainment
 ■ Integration / test
 ■ Task
 △ Plan ▲ Actual ✦ Undefinitized Contract Award

As of: 3 Jan 12

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Joint Surface Warfare (JSuW) p.1 of 2	1	2011	1	2011
Joint STARS Radar Modernization (JSRM) p.1 of 2	1	2011	4	2012
Avionics DMS Risk Reduction & Studies p.1 of 2	1	2012	4	2013
ELMM Design/Development p.1 of 2	1	2011	4	2011
ELMM Retrofit Production p.1 of 2	3	2011	4	2012
ELMM Sustainment p.1 of 2	1	2013	4	2017
CNU Phase I Design/Development p.1 of 2	1	2011	3	2012
CNU Production p.1 of 2	3	2012	1	2015
CNU Sustainment p.1 of 2	1	2015	4	2017
8.33/25 kHz Radio Retrofit p.1 of 2	1	2011	3	2013
8.33/25 kHz Radio Sustainment p.1 of 2	3	2013	4	2017
PME DMS SDD p.1 of 2	1	2011	2	2013
PME DMS Production p.1 of 2	3	2013	4	2017
Re-Engine SDD Phase II p.2 of 2	1	2011	1	2013
Re-Engine Production Phase IA p.2 of 2	1	2011	4	2012
Re-Engine Production Shutdown/Storage p.2 of 2	4	2012	4	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	19.165	18.599	22.654	-	22.654	24.342	24.422	24.571	25.715	Continuing	Continuing
674037: <i>SEEK EAGLE Certifications</i>	19.165	18.599	22.654	-	22.654	24.342	24.422	24.571	25.715	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 certify 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. In support of certification, 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). SEEK EAGLE works in coordination with the Air Force Safety Center to provide Hazards of Electromagnetic Radiation to Ordnance (HERO) analysis and certification recommendations of ordnance systems containing electro-explosive devices. 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 and inventory stores including, but not limited to: Small Diameter Bomb (SDB), Laser Joint Direct Attack Munitions (LJDAM), Joint Air-to-Surface Standoff Missile (JASSM), Air Intercept Missile (AIM-9X), Advanced Medium Range Air-to-Air Missile (AIM-120,AMRAAM), Miniature Air-Launched Decoy (MALD), BRU-57 (Smart Bomb Rack), BRU-61 (SDB Bomb Rack) low collateral damage warhead (BLU-129), Wind Corrected Munitions Dispenser (WCMD), Sniper Targeting Pod with video data link, LITENING Targeting Pod with video data link, laser guided bombs, laser guided Maverick (AGM-65L), F-22 supersonic tank, practice bomb (BDU-50), and Aircraft Instrumentation Pod (AN/ASQ-T50). SEEK EAGLE funds are also used to support certification of other inventory stores on CAF and SOCOM aircraft, assist the F-35 JPO with subject matter expertise in the System Development and Demonstration phase (e.g. development of limited organic store certifications capability to support F-35 in the Production, Sustainment, and Follow-on Development phase), continue developing F-22 engineering models/data and obtain follow-on technical support from Lockheed Martin, and to obtain non-inventory stores and store data for post-integration certification requirements.

This program is in Budget Activity 7, Operational System Development, these budget activities include development efforts to upgrade systems currently fielded or has approval for full rate production and anticipate production funding in the current or subsequent year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	19.263	18.599	19.154	-	19.154
Current President's Budget	19.165	18.599	22.654	-	22.654
Total Adjustments	-0.098	-	3.500	-	3.500
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.098	-	3.500	-	3.500

Change Summary Explanation

FY2011 adjustments are for Cong General Reductions -\$0.098

FY2013 increase of \$3.500 for JSF organic platform-stores compatibility capability development

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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Title: F-22A	3.300	2.500	2.500
Description: F-22A Capability Development and Weapons Certification.			
FY 2011 Accomplishments: Continue developing organic F-22 engineering capability in remaining four disciplines by receiving additional contractor deliverables and developing organic computational M&S capabilities. Perform engineering analysis and begin wind tunnel and flight test planning to support certification of AIM-120D, AIM-9X, and MXU-1010 on the F-22 for increment 3.2. Enlist support from the contractor for engineering analysis for increment 3.2 aircraft-stores certification.			
FY 2012 Plans: Continue developing organic F-22 engineering capability in remaining four disciplines by receiving additional contractor deliverables and developing organic computational M&S capabilities. Perform engineering analysis and begin wind tunnel and flight test planning to support certification of AIM-120D and MXU-1010 and perform wind tunnel testing of AIM-9X on the F-22 for increment 3.2. Enlist support from the contractor for engineering analysis for increment 3.2 aircraft-stores certification. Provide capability flight recommendations.			
FY 2013 Plans:			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Continue developing organic F-22 engineering capability in remaining four disciplines by receiving additional contractor deliverables and developing organic computational M&S capabilities. Perform engineering analysis and begin wind tunnel and flight test planning to support certification of supersonic tank and perform wind tunnel testing of AIM-9X on the F-22 for increment 3.2. Enlist support from the contractor for engineering analysis for increment 3.2 aircraft-stores certification. Continue to provide capability flight recommendations.</p>			
<p>Title: F-35 Description: F-35 Capability Development.</p> <p>FY 2011 Accomplishments: F-35 Capability Development support for SEEK EAGLE begins in FY13.</p> <p>FY 2012 Plans: F-35 Capability Development support for SEEK EAGLE begins in FY13, in order to be ready to support Combat Air Force's (CAF's) anticipated requirements after Initial Operational Capability (IOC).</p> <p>FY 2013 Plans: Begin development of organic F-35 engineering capability in all eight engineering disciplines by receiving contractor data, tools, and technical support.</p>	-	-	3.500
<p>Title: M&S Capability Description: Modeling and Simulation (M&S) capability development in support of store certification</p> <p>FY 2011 Accomplishments: Continue development and improvement of M&S capability to support store certification disciplines. Example work includes alpha and beta testing of new Create-AV/Kestrel code base for Stability and Control Discipline progressing from static aircraft to aircraft with moving control surfaces. Other key work includes tools necessary to characterize F-22 and F-35 weapons bay environments including aero-acoustic prediction.</p> <p>FY 2012 Plans: Continue development and improvement of M&S capability to support store certification disciplines. Example work includes alpha and beta testing of new Create-AV/Kestrel code base for Stability and Control Discipline progressing from static aircraft to aircraft with moving control surfaces. Other key work includes tools necessary to characterize F-22 and F-35 weapons bay environments including aero-acoustic prediction.</p> <p>FY 2013 Plans:</p>	2.900	2.900	3.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Continue development and improvement of M&S capability to support store certification disciplines. Example work includes alpha and beta testing of new Create-AV/Kestrel code base for Stability and Control Discipline progressing from static aircraft to aircraft with moving control surfaces. Other key work includes tools necessary to characterize F-22 and F-35 weapons bay environments including aero-acoustic prediction.				
<p>Title: Aircraft/Store capability analysis</p> <p>Description: Evaluate aircraft/store compatibility through analysis, M&S and flight and ground test. Provide flight recommendations to airworthiness authorities.</p> <p>FY 2011 Accomplishments: Continually provide compatibility flight recommendations as requested by ACC/A8, AAC, AFSOC and other agencies. Extensive F-16/SDB and F-16/AIM-9X ground and flight testing will be performed.</p> <p>FY 2012 Plans: Continually provide compatibility flight recommendations as requested by ACC/A8, AAC, AFSOC and other agencies. Extensive F-16/SDB and F-16/AIM-9X ground and flight testing will be performed.</p> <p>FY 2013 Plans: Continually provide compatibility flight recommendations as requested by ACC/A8, AAC, AFSOC and other agencies. Extensive F-16/SDB and F-16/AIM-9X flight testing will be performed.</p>		10.365	10.699	11.654
<p>Title: CWDS</p> <p>Description: Develop Mission Planning Software including Combat Weapon Delivery Software (CWDS).</p> <p>FY 2011 Accomplishments: Continue support of CWDS requirements for multiple MPEs on two different frameworks: Portable Flight Planning System(PFPS) and the Joint Mission Planning System (JMPS). Begin transition to the redeveloped CWDS software for alignment with the JMPS roadmap architecture. Continue support of legacy CWDS development until full transition of all MPEs to new JMPS framework has occurred.</p> <p>FY 2012 Plans: Continue support of efforts aimed at improving aircrew interface. Continue support of CWDS requirements for multiple MPEs on two different frameworks: PFPS and JMPS. Continue transition to the redeveloped CWDS software for alignment with the JMPS roadmap architecture. Continue support of legacy CWDS development until full transition of all MPEs to new JMPS framework has occurred.</p> <p>FY 2013 Plans:</p>		2.600	2.500	2.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Continue support of efforts aimed at improving aircrew interface. Continue support of CWDS requirements for multiple MPEs on two different frameworks: PFPS and JMPS. Continue transition to the redeveloped CWDS software for alignment with the JMPS roadmap architecture. Continue support of legacy CWDS development until full transition of all MPEs to new JMPS framework has occurred.			
Accomplishments/Planned Programs Subtotals	19.165	18.599	22.654

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• None: <i>N/A</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. 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.

F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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.

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
LJDAM	1	2011	4	2017
JASSM	1	2011	4	2017
SDB	1	2011	4	2017
AIM-9X	1	2011	4	2017
AIM-120	1	2011	4	2017
WCMD	1	2011	4	2017
MALD	1	2011	4	2017
SNIPER	1	2011	4	2017
LITENING	1	2011	4	2017
BRU-57	1	2011	4	2017
BRU-61	1	2011	4	2013
BLU-129	1	2011	4	2013
AGM-65L	1	2011	4	2013
MXU-1010	1	2011	4	2013
AN/ASQ-T50	1	2011	4	2013
BDU-50	1	2011	4	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	20.800	22.990	15.501	-	15.501	15.868	16.349	16.683	17.065	Continuing	Continuing
674567: <i>M&S Foundations</i>	5.745	6.488	6.590	-	6.590	6.622	6.561	6.744	6.833	Continuing	Continuing
674991: <i>Accelerated Acquisition</i>	4.494	5.235	-	-	-	-	-	-	-	Continuing	Continuing
675004: <i>New and Emerging Capabilities</i>	-	1.351	-	-	-	-	-	-	-	Continuing	Continuing
675135: <i>Warfighter Readiness</i>	10.561	9.916	8.911	-	8.911	9.246	9.788	9.939	10.232	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 Generation (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 (HLD) 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. In support of the DoD drive to improve the effectiveness and efficiency of its enterprise-wide acquisition business processes, the USAF M&S Program Element develops and supports enhancements to models, simulations, tools, and the LVC infrastructure to provide for system-of-systems M&S

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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capabilities across the lifecycle, reduce developmental costs, and minimize risks. These capabilities support the acquisition process from concept development through test and evaluation. 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 this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	21.638	23.091	20.928	-	20.928
Current President's Budget	20.800	22.990	15.501	-	15.501
Total Adjustments	-0.838	-0.101	-5.427	-	-5.427
• Congressional General Reductions	-	-0.101			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.619	-			
• Other Adjustments	-0.219	-	-5.427	-	-5.427

Change Summary Explanation

FY11 Congressional General Reduction of 0.219M in Other Adjustment row.

FY12 Congressional General Reduction (FFRDC, Sec. 8023) of 0.101M.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
674567: <i>M&S Foundations</i>	5.745	6.488	6.590	-	6.590	6.622	6.561	6.744	6.833	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 is 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 MSF 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.

The Information Operations Suite (IOS) provides the authoritative representation of Air Force information operations. IOS is comprised 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. Other capabilities, such as the Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) provide for Intelligence, Surveillance, and Reconnaissance

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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>
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(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.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Air Constructive Environment - Information Operations Suite (ACE-IOS)</p> <p>Description: Information Operations Suite (IOS) provides the authoritative representation of Air Force information operations. IOS is comprised 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.</p> <p>FY 2011 Accomplishments: Provided the authoritative representation of Air Force information operations. IOS is comprised 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.</p> <p>FY 2012 Plans: Provides the authoritative representation of Air Force information operations. IOS is comprised 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.</p> <p>FY 2013 Plans: Will provide the authoritative representation of Air Force information operations. IOS is comprised 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.</p>	4.250	4.900	5.047
<p>Title: Live, Virtual, and Constructive - Integrating Architecture (LVC-IA)</p> <p>Description: Provide M&S Foundations (MSF) support to: Live, Virtual, and Constructive(LVC) - Integrating Architecture (IA), concept exploration, model development, and model transition effort.</p> <p>FY 2011 Accomplishments: Provided M&S Foundations (MSF) support to: Live, Virtual, and Constructive(LVC) - Integrating Architecture (IA), concept exploration, model development, and model transition effort.</p> <p>FY 2012 Plans:</p>	0.705	0.593	0.548

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Provides M&S Foundations (MSF) support to: Live, Virtual, and Constructive(LVC) - Integrating Architecture (IA), concept exploration, model development, and model transition effort. FY 2013 Plans: Will provide M&S Foundations (MSF) support to: Live, Virtual, and Constructive(LVC) - Integrating Architecture (IA), concept exploration, model development, and model transition effort.			
Title: Air & Space Natural Environment (ASNE) Description: 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 databases and products. FY 2011 Accomplishments: Developed the Air and Space Natural Environment (ASNE) capabilities. Continued the implementation and RDT&E of a standardized Integrated Architecture for the Live-Virtual-Constructive enterprise. FY 2012 Plans: Develops the Air and Space Natural Environment (ASNE) capabilities. Continues the implementation and RDT&E of a standardized Integrated Architecture for the Live-Virtual-Constructive enterprise. FY 2013 Plans: Will develop the Air and Space Natural Environment (ASNE) capabilities. Will continue the implementation and RDT&E of a standardized Integrated Architecture for the Live-Virtual-Constructive enterprise.	0.790	0.995	0.995
Accomplishments/Planned Programs Subtotals	5.745	6.488	6.590

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy
Office of Aerospace Studies (OAS), Kirtland AFB, NM manages the acquisition and incremental development process for all M&S Foundation activities. All major contracts 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>



PE 27601F – USAF Modeling & Simulation M&S Foundations Schedule

U.S. AIR FORCE

USAF Modeling & Simulation M&S Foundations	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Air Constructive Environment - Information Operations Suite (ACE-IOS)							
Live-Virtual-Constructive Integrated Architecture (LVC-IA)							
Air and Space Natural Environment (ASNE)							

- | | | |
|-----------------------|--------------------------|--------------------|
| Concept activities | Design / development | Integration / test |
| Production / fielding | Operations / sustainment | Key events |

Integrity - Service - Excellence

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force **DATE:** February 2012

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>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Air Constructive Environment - Information Operations Suite (ACE-IOS)	1	2011	4	2017
Live-Virtual-Constructive Integrated Architecture (LVC-IA)	1	2011	4	2017
Air and Space Natural Environment (ASNE)	1	2011	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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 Acquisition</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
674991: <i>Accelerated Acquisition</i>	4.494	5.235	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Project 4991, Accelerated Acquisition, was terminated in fiscal year 2013.

A. Mission Description and Budget Item Justification

In Fiscal Year 2013, no Air Force requirement.

In Fiscal Year 2012, Accelerated Acquisition (AA) focused on fostering M&S tools, data, and infrastructure that enabled high confidence acquisition of capabilities that supported the joint warfighter. This included Live-Virtual-Constructive (LVC) infrastructure, tools and processes supporting LVC events, and models, tools, data, simulations/stimulation that supported requirements definition, systems engineering and test activities. Activities also included M&S support for studies and analysis that supported both current program planning and execution and future program planning.

These efforts enabled 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 was to improve interoperability of weapon systems and platforms through continuing, rigorous interoperability evaluation in a representative Joint Mission Environment. Additionally, AA activities sought 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 provided the capability to improve both Service and Joint system performance in a system-of-systems environment. Connectivity established by the infrastructure built upon existing Service and Joint combat system engineering and test sites, such as Command, Control, Communications, Computer, and Intelligence (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 included concept of operations, business rules, and procedures that enabled acquisition managers to effectively use LVC capabilities. These efforts enabled accurately represented C4I networks for capability requirement definition, development, and testing activities to evaluate those systems for interoperability and integration into a joint environment. This addressed interoperability issues by providing a means for discovering issues early on.

This program was in Budget Activity 7, Operational System Development because this budget activity included development efforts to upgrade systems that have been fielded or have received approval for full rate production.

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

	FY 2011	FY 2012	FY 2013
Title: Architecture & Links	0.155	0.174	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012		
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 Acquisition</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Description: Continue communications architectures and network support</p> <p>FY 2011 Accomplishments: Continued to support the development and maturation of collaborative processes and capabilities of systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.).</p> <p>FY 2012 Plans: Continue to support the development and maturation of collaborative processes and capabilities of systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.).</p>				
<p>Title: Event Coordination</p> <p>Description: Continue to support LVC events to assist in Air Force requirements definition, development and T&E activities</p> <p>FY 2011 Accomplishments: Continued to support development and maturation of collaborative processes and capabilities of systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.).</p> <p>FY 2012 Plans: Continue to support development and maturation of collaborative processes and capabilities of systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.).</p>		0.225	0.253	-
<p>Title: M&S Tools</p> <p>Description: Develop, enhance and verify models, tools, data, simulations/stimulation environments for systems engineering and test activities</p> <p>FY 2011 Accomplishments: Continued to support development and maturation of collaborative processes and capabilities of support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.).</p> <p>FY 2012 Plans: Continue to support development and maturation of collaborative processes and capabilities of support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.).</p>		3.323	3.970	-
<p>Title: Joint Service Integration</p> <p>Description: Continue to support Joint Service integration & test</p>		0.791	0.838	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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 Acquisition</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<i>FY 2011 Accomplishments:</i> Continued to support development and maturation of collaborative processes and capabilities of support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.).			
<i>FY 2012 Plans:</i> Continue to support development and maturation of collaborative processes and capabilities of systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.).			
Accomplishments/Planned Programs Subtotals	4.494	5.235	-

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u> <u>Continuing</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy
Secretary of Air Force, Information Dominance & Chief Information Officer (SAF/CIO A6) 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 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.

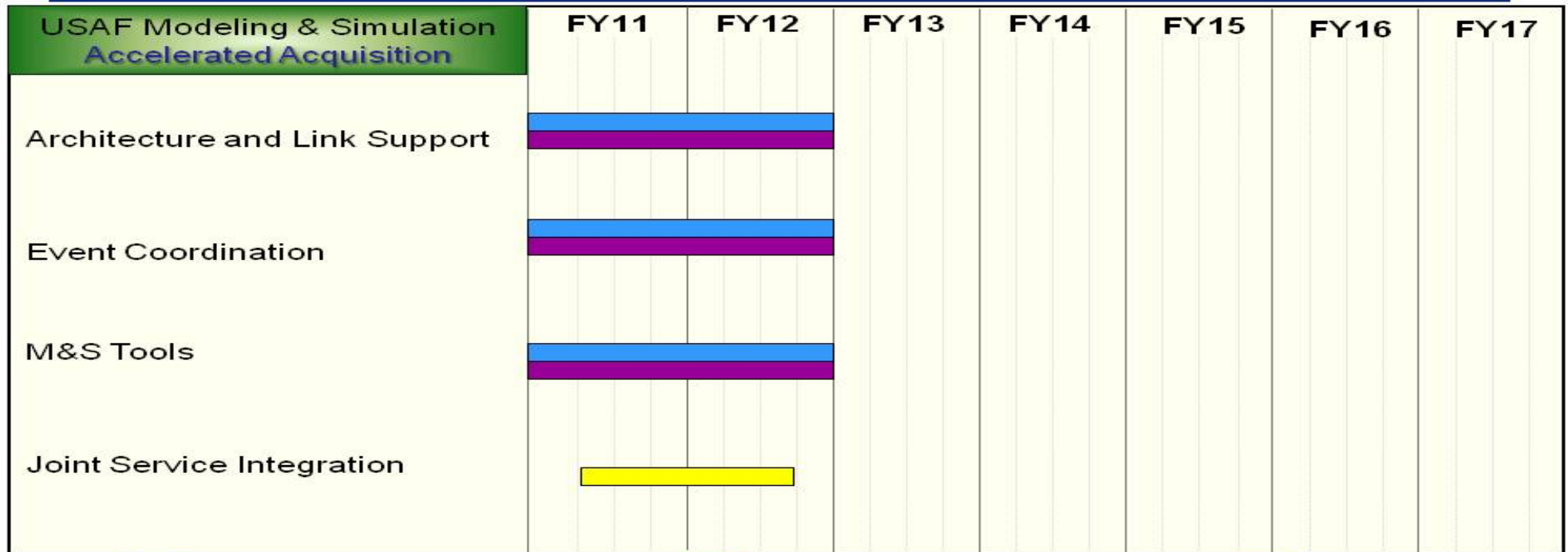
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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674991: <i>Accelerated Acquisition</i>



PE 27601 – USAF Modeling & Simulation Accelerated Acquisition (674991) Schedule

U.S. AIR FORCE



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

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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 Acquisition</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Architecture & Link Support	1	2011	4	2012
Event Coordination	1	2011	4	2012
M&S Tools	1	2011	4	2012
Joint Service Integration	2	2011	3	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
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 675004: <i>New and Emerging Capabilities</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675004: <i>New and Emerging Capabilities</i>	-	1.351	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The New and Emerging Capabilities (NEWC) are a collection of short-term, special Modeling & Simulation (M&S) programs requiring rapid prototype and fielding. These capabilities meet Air, Space, or Cyberspace gaps identified by Air Force Major Commands, U.S. Combatant Commands, or Agencies; address Air Force core competencies; ensure Air Force's force structure or power projections are appropriately represented in DoD, Joint, and Service training, rehearsal, and assessments; ensure interoperability of simulations among weapon system programs; and field initial Air Force capabilities in support of Department of Defense priorities. 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 this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013
Title: NEWC	-	1.351	-
Description: This NEWC (Joint Close Air Support (JCAS) Mobile Synthetic Training System) provides persistent, mobile, on-demand Battlefield Airman Training.			
FY 2011 Accomplishments: N/A			
FY 2012 Plans: Provides persistent, mobile, on-demand Battlefield Airman Training, specifically Joint Terminal Attack Controller (JTAC) training, using synthetic Predator/Reaper imagery and/or Fighter/Bomber Advanced Targeting Pod feeds. Training is accomplished on designated Air Force and Joint ranges and (e.g. Nellis Range Complex, Fort Irwin National Training Center, and Fort Polk Joint Readiness Training Center) and designated military operating areas using Live, Virtual and Constructive Integrated M&S.			
Accomplishments/Planned Programs Subtotals	-	1.351	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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 675004: <i>New and Emerging Capabilities</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

All contract in NEWC will use 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.

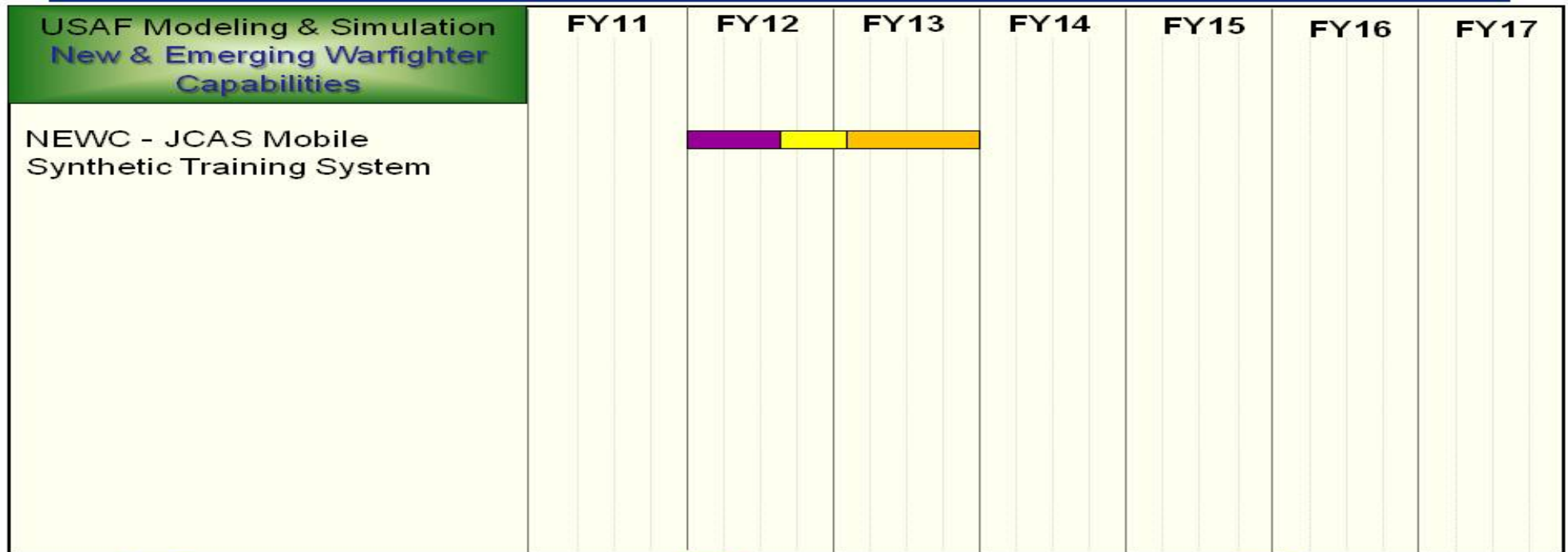
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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 675004: <i>New and Emerging Capabilities</i>



PE 27601 – USAF Modeling & Simulation New & Emerging Capabilities (NEWC) Schedule

U.S. AIR FORCE



- | | | |
|-----------------------|--------------------------|--------------------|
| Concept activities | Design / development | Integration / test |
| Production / fielding | Operations / sustainment | Key events |

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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 675004: <i>New and Emerging Capabilities</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
New and Emerging Warfighting Capabilities - JCAS Mobile Synthetic Training System	1	2012	4	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675135: <i>Warfighter Readiness</i>	10.561	9.916	8.911	-	8.911	9.246	9.788	9.939	10.232	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. Activities also include studies and analysis to support both current program planning, execution, and future program planning.

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 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 Combat Commanders (COCOM) battle-staffs. The primary model in the AFMSTT is the Air Warfare Simulation (AWSIM). The Joint Training Transformation Initiative (JTII) 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 Air Force operational-level exercises.

This program is in Budget Activity 7, Operational System Development, these budget activities include development efforts to upgrade systems currently fielded or has approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013
Title: Air, Space, and Cyberspace Constructive Environment (ASCCE)	9.230	9.299	7.930
Description: Air Force Modeling & Simulation Training Toolkit (AFMSTT)/Air Warfare Simulation (AWSIM)			
FY 2011 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Maintained, improved, certified and accredited 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. FY 2012 Plans: Maintain, improve, certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE) and integrate with other Service models in support of major Service, Joint, and COCOM exercises, experiments, and mission rehearsals. FY 2013 Plans: Will maintain, improve, certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE) and will integrate with other Service models in support of major Service, Joint, and COCOM exercises, experiments, and mission rehearsals.			
Title: ASCCE C&A / JTTI Description: Air, Space, Cyber Constructive Environment Certification and Accreditation / Joint Training Transformation Initiative (JTTI) FY 2011 Accomplishments: Continued the development of Air, Space, Cyber Constructive Environment Certification and Accreditation / Joint Training Transformation Initiative (JTTI) FY 2012 Plans: Continues the development of Air, Space, Cyber Constructive Environment Certification and Accreditation / Joint Training Transformation Initiative (JTTI) FY 2013 Plans: Will continue the development of the Air, Space, Cyber Constructive Environment Certification and Accreditation / Joint Training Transformation Initiative (JTTI)	1.331	0.617	0.981
Accomplishments/Planned Programs Subtotals	10.561	9.916	8.911

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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>
<u>D. Acquisition Strategy</u> Electronic Systems Center (ESC) at Hanscom AFB, MA manages the AFMSTT portion of 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.		
<u>E. Performance Metrics</u> 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.		

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>



PE 27601 – USAF Modeling & Simulation Warfighter Readiness (675135) Schedule

U.S. AIR FORCE

USAF Modeling & Simulation Warfighter Readiness	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Air, Space, Cyberspace Constructive Environment (ASCCE)/ Air Force Modeling and Simulation Training Toolkit (AFMSTT)/ Information Operations Suite (IOS)/Air Warfare Simulation (AWSIM)							
Air, Space, Cyberspace Constructive Environment (ASCCE) Certification and Accreditation (C&A) / Joint Training Transformation Initiative (JTTI)							

- | | | |
|-----------------------|--------------------------|--------------------|
| Concept activities | Design / development | Integration / test |
| Production / fielding | Operations / sustainment | Key events |

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force **DATE:** February 2012

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>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ASCCE/AFMSTT/IOS/AWSIM	1	2011	4	2017
ASCCE C&A/JTTI	1	2011	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	5.829	5.779	5.699	-	5.699	5.762	5.881	6.046	6.124	Continuing	Continuing
672888: <i>Distributed Mission Operations Center (DMOC)</i>	5.829	5.779	5.699	-	5.699	5.762	5.881	6.046	6.124	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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 Air Force 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 in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	6.020	5.779	5.594	-	5.594
Current President's Budget	5.829	5.779	5.699	-	5.699
Total Adjustments	-0.191	-	0.105	-	0.105
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.160	-			
• Other Adjustments	-0.031	-	0.105	-	0.105

Change Summary Explanation

In FY11: Adjustment for Congressional General Reduction (\$.031M) shown in Other Adjustments Row.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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FY13 funding decrease is due to higher Department of Defense priorities.

C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: Mission Rehearsal</p> <p>Description: Continue to maintain core structure to support users conducting RDT&E, mission rehearsal, and concepts of operation development</p> <p>FY 2011 Accomplishments: Developed Red and Blue Air/Ground simulations and integrated ISR and Close Air Support (CAS) simulators.</p> <p>FY 2012 Plans: Continue to develop Red and Blue Air/Ground simulations, degraded ops, and integrate ISR, SOF, and Close Air Support (CAS) simulators; continue high side operations environment expansion.</p> <p>FY 2013 Base Plans: Will continue to develop Red and Blue Air/Ground simulations, degraded ops, and integrate ISR, SOF, and Close Air Support (CAS) simulators; will continue high side operations environment expansion.</p> <p>FY 2013 OCO Plans: N/A</p>	2.582	2.526	2.544	-	2.544
<p>Title: V,V & A</p> <p>Description: Continue to support requirements definition, test support, scenario development, analysis, systems engineering support, and Verification, Validation, and Accreditation (VV&A) of core systems</p> <p>FY 2011 Accomplishments: Developed Red and Blue Air/Ground simulations and integrated ISR and Close Air Support (CAS) simulators.</p> <p>FY 2012 Plans: Continue to develop Red and Blue Air/Ground simulations, degraded ops, and integrate ISR, SOF, and Close Air Support (CAS) simulators; continue high side operations environment expansion.</p> <p>FY 2013 Base Plans: Will continue to develop Red and Blue Air/Ground simulations, degraded ops, and integrate ISR, SOF, and Close Air Support (CAS) simulators; will continue high side operations environment expansion.</p> <p>FY 2013 OCO Plans:</p>	1.033	1.010	1.018	-	1.018

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
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N/A					
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<p>Title: DMOC Ops</p> <p>Description: Communications connectivity between DMOC and various other operational and modeling & simulation (M&S) facilities</p> <p>FY 2011 Accomplishments: Developed Red and Blue Air/Ground simulations and integrated ISR and Close Air Support (CAS) simulators.</p> <p>FY 2012 Plans: Continue to develop Red and Blue Air/Ground simulations, degraded ops, and integrate ISR, SOF, and Close Air Support (CAS) simulators; continue high side operations environment expansion.</p> <p>FY 2013 Base Plans: Will continue to develop Red and Blue Air/Ground simulations, degraded ops, and integrate ISR, SOF, and Close Air Support (CAS) simulators; will continue high side operations environment expansion.</p> <p>FY 2013 OCO Plans: N/A</p>	1.549	1.516	1.526	-	1.526
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<p>Title: PMO Support</p> <p>Description: Program Management Office (PMO) support</p> <p>FY 2011 Accomplishments: Provided PMO support in the development of Red and Blue Air/Ground simulations and integrated ISR and Close Air Support (CAS) simulators.</p> <p>FY 2012 Plans: Provide PMO support in the continued development of Red and Blue Air/Ground simulations, degraded ops, and integrate ISR, SOF, and Close Air Support (CAS) simulators; continue high side operations environment expansion.</p> <p>FY 2013 Base Plans:</p>	0.665	0.727	0.611	-	0.611
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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Will provide PMO support in the continued development of Red and Blue Air/Ground simulations, degraded ops, and integrate ISR, SOF, and Close Air Support (CAS) simulators; continue high side operations environment expansion. FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	5.829	5.779	5.699	-	5.699

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. Acquisition Strategy
 The Distributed Mission Operations Center supports AF/Joint/Coalition 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, modeling and simulation, multi-level security testbed, and exercises on Air Force and Joint DMO networks.

F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>



PE 27605 – Wargaming & Sim Centers Distributed Mission Operations Center (672888) Schedule

U.S. AIR FORCE

USAF Wargaming & Sim Centers DMOC	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Mission Rehearsal	[Purple bar: Design / development]						
	[Yellow bar: Integration / test]						
Verification, Validation and Accreditation	[Purple bar: Design / development]						
	[Blue bar: Concept activities]						
DMOC Ops	[Purple bar: Design / development]						
	[Yellow bar: Integration / test]						
PMO Support	[Green bar: Operations / sustainment]						

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

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Mission Rehearsal	1	2011	4	2017
Verification, Validation, and Accreditation	1	2011	4	2017
DMOC Ops	1	2011	4	2017
PMO Support	1	2011	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>Wargaming Operations (Distributed Training)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	2.759	3.247	4.425	-	4.425	4.038	4.096	4.210	4.265	Continuing	Continuing
675042: <i>Log Application Logisitics Integration (LALI)</i>	-	0.523	-	-	-	-	-	-	-	Continuing	Continuing
675190: <i>JFCOM Wargaming</i>	2.759	2.724	4.425	-	4.425	4.038	4.096	4.210	4.265	Continuing	Continuing

A. Mission Description and Budget Item Justification

In September 03, the AF/CV directed the establishment of funding 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, space and cyber space capabilities in joint activities, through modeling and simulation and wargaming activities. The primary activity this is accomplished with is the Chief of Staff of the United States Air Force's Unified Engagement (UE) wargame series. UE is a two cycle of plan, execute, analyze and report of activities that include workshops, seminars, capstone event, senior leader seminar, and Building Partnership Capacity events. The capstone event includes over 400 Joint, other Agency, and coalition partners supported by cutting edge technology. The Wargaming Environment (WIE) evolves with each UE game cycle and is made up of three main parts GamePoint, ViewPoint, and Modeling and Simulation Tools. GamePoint provides the latest collaboration and information throughout and during the wargame and associated events. ViewPoint provides users a simple method to visually view the information and conduct their own analysis. Modeling and Simulation provides integration of the latest modeling, simulation and analysis tools and also the infrastructure to support the WIE. This program is categorized in Budget Activity (BA) 07 because it supports the development efforts of operational systems.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	2.863	5.264	4.417	-	4.417
Current President's Budget	2.759	3.247	4.425	-	4.425
Total Adjustments	-0.104	-2.017	0.008	-	0.008
• Congressional General Reductions	-	-0.017			
• Congressional Directed Reductions	-	-2.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.083	-			
• Other Adjustments	-0.021	-	0.008	-	0.008

Change Summary Explanation

FY11 adjustment (-0.021 CGR).

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>Wargaming Operations</i> (<i>Distributed Training</i>)	PROJECT 675042: <i>Log Application Logistics Integration</i> (<i>LALI</i>)
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675042: <i>Log Application Logistics Integration (LALI)</i>	-	0.523	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Description/Justification for Logistics Application/Logistics Integration (LALI) located in BPAC 675042 PE 0708611F.

FY12 \$523K for LALI incorrectly aligned to PE 0207697F and will be realigned during execution.

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

	FY 2011	FY 2012	FY 2013
Title: Log Application Logistics Integration (LALI)	-	0.523	-
Description: Logistics Application Logistics Integration (LALI) funding provides development in support of the Air Force logistics transformation initiative for the 21st century, eLog21.			
FY 2012 Plans: Support AF Logistics business process transformation (eLog21) initiatives through Business Intelligence (BI) capabilities (reports, predictive analyses, what-if analyses, etc).			
Accomplishments/Planned Programs Subtotals	-	0.523	-

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPAF 0708611F: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

LALI projects will be competitively acquired using a variety of fixed price and cost plus 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.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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>Wargaming Operations</i> (<i>Distributed Training</i>)	PROJECT 675190: <i>JFCOM Wargaming</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675190: <i>JFCOM Wargaming</i>	2.759	2.724	4.425	-	4.425	4.038	4.096	4.210	4.265	Continuing	Continuing
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 funding 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, space and cyber space capabilities in joint activities, through modeling and simulation and wargaming activities. The primary activity this is accomplished with is the Chief of Staff of the United States Air Force's Unified Engagement (UE) wargame series. UE is a two cycle of plan, execute, analyze and report of activities that include workshops, seminars, capstone event, senior leader seminar, and Building Partnership Capacity events. The capstone event includes over 400 Joint, other Agency, and coalition partners supported by cutting edge technology. The Wargaming Environment (WIE) evolves with each UE game cycle and is made up of three main parts GamePoint, ViewPoint, and Modeling and Simulation Tools. GamePoint provides the latest collaboration and information throughout and during the wargame and associated events. ViewPoint provides users a simple method to visually view the information and conduct their own analysis. Modeling and Simulation provides integration of the latest modeling, simulation and analysis tools and also the infrastructure to support the WIE.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2011	FY 2012	FY 2013
Title: MAJOR THRUST 1	0.950	0.918	2.301
Description: Develop air, space and cyber space wargaming specific functionality in existing modeling and simulation and analysis tools and integrate into the latest version of the WIE.			
FY 2011 Accomplishments: Develop air, space and cyber space wargaming specific functionality in existing modeling and simulation and analysis tools and integrate into the latest version of the WIE v12.			
FY 2012 Plans: Develops air and space wargaming specific functionality in existing simulation and analysis tools (e.g., JWARS, THUNDER/STORM)			
FY 2013 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012		
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>Wargaming Operations</i> (<i>Distributed Training</i>)	PROJECT 675190: <i>JFCOM Wargaming</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Develops air and space wargaming specific functionality in existing simulation and analysis tools (e.g., JWARS, THUNDER/STORM)				
Title: MAJOR THRUST 2 Description: Provides for capabilities, Requirements, and Risk Assessment (CRRRA) FY 2011 Accomplishments: Provides for capabilities, Requirements, and Risk Assessment (CRRRA) FY 2012 Plans: Provides for Capabilities, Requirements, and Risk Assessment (CRRRA) FY 2013 Plans: Provides for Capabilities, Requirements, and Risk Assessment (CRRRA)		0.950	0.684	1.000
Title: MAJOR THRUST 3 Description: Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation FY 2011 Accomplishments: Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation FY 2012 Plans: Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation FY 2013 Plans: Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation		0.458	0.622	0.700
Title: MAJOR THRUST 4 Description: Supplies platforms for software in operational environments and for programmed replacement costs FY 2011 Accomplishments: Supplies platforms for software in operational environments and for programmed replacement costs FY 2012 Plans: Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation FY 2013 Plans:		0.401	0.500	0.424

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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>Wargaming Operations</i> (<i>Distributed Training</i>)	PROJECT 675190: <i>JFCOM Wargaming</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation			
Accomplishments/Planned Programs Subtotals	2.759	2.724	4.425

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> Base	<u>FY 2013</u> OCO	<u>FY 2013</u> Total	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> Complete	<u>Total Cost</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

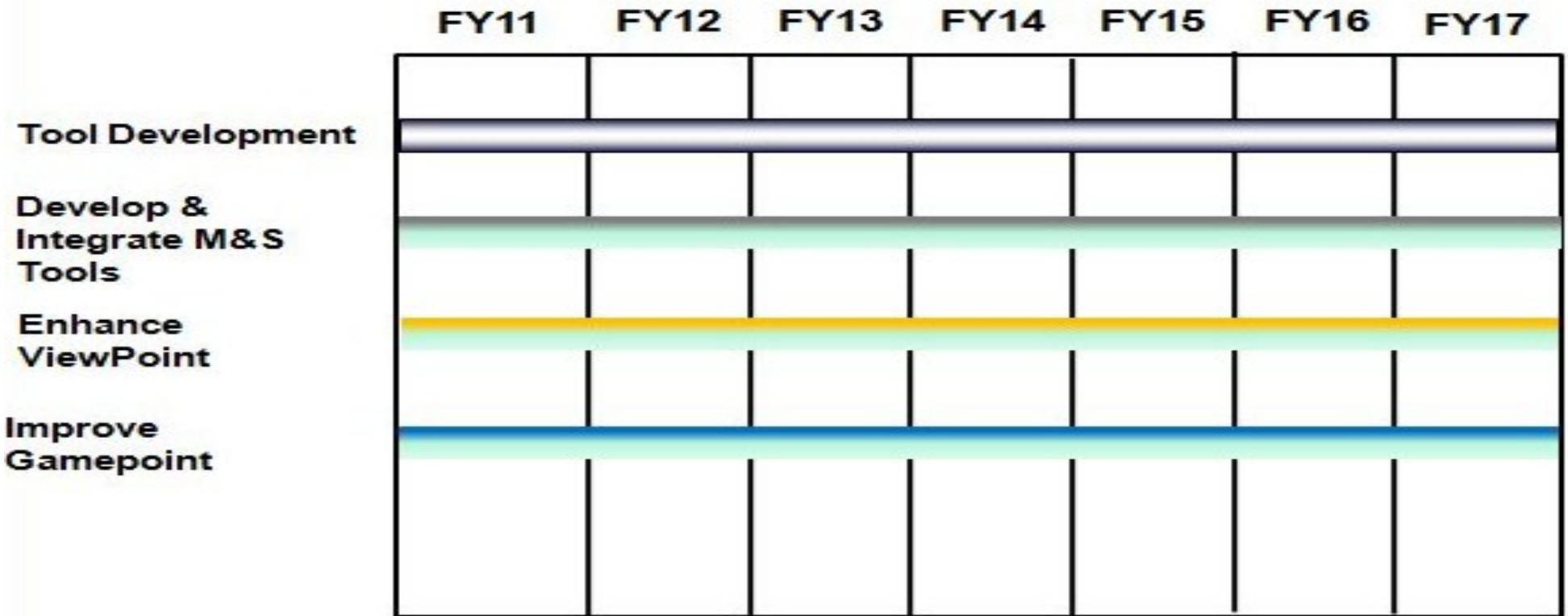
D. Acquisition Strategy
All contracts will be awarded based on full and open competition.

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>Wargaming Operations</i> (<i>Distributed Training</i>)	PROJECT 675190: <i>JFCOM Wargaming</i>

JFCOM Wargaming



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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>Wargaming Operations</i> (<i>Distributed Training</i>)	PROJECT 675190: <i>JFCOM Wargaming</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Tool Development	1	2011	4	2017
Develop and Integrate M&S Tools	1	2011	4	2017
Enhance ViewPoint	1	2011	4	2017
Improve GamePoint	1	2011	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	80.492	63.009	69.377	-	69.377	70.332	82.164	84.284	84.542	Continuing	Continuing
673858: <i>Mission Planning Systems (MPS) Development</i>	43.663	28.004	6.405	-	6.405	0.833	5.484	2.665	-	Continuing	Continuing
675302: <i>Precision Aerial Delivery Systems (PADS)</i>	4.238	4.142	5.546	-	5.546	2.815	4.322	3.894	0.945	Continuing	Continuing
675380: <i>Mission Planning Systems (MPS) Modernization</i>	32.591	30.863	57.426	-	57.426	66.684	72.358	77.725	83.597	Continuing	Continuing

Note
 FY11 funding totals include \$4.443M appropriated 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 weapons, 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, but are not limited to the: A-10, B-1B, C-5, C-17, C-130, E-3, E-8, F-15, F-16, F-22A, 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 for all ballistic airdrop mission as well as precision guided airdrops that are required when the mission profile or surface-to-air threat assessment

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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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 payloads to keep the warfighter supplied and in the fight.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	83.555	69.918	72.037	-	72.037
Current President's Budget	80.492	63.009	69.377	-	69.377
Total Adjustments	-3.063	-6.909	-2.660	-	-2.660
• Congressional General Reductions	-	-0.409			
• Congressional Directed Reductions	-	-6.500			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.388	-			
• Other Adjustments	-0.675	-	-2.660	-	-2.660

Change Summary Explanation

FY2012 request reduced by 6.5M due to MPS Increment IV critical change delays.

FY2013 reduced by 2.66M due to higher Air Force priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force								DATE: February 2012			
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) Development</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
673858: <i>Mission Planning Systems (MPS) Development</i>	43.663	28.004	6.405	-	6.405	0.833	5.484	2.665	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

FY11 funding totals include \$4.443M appropriated for Overseas Contingency Operations.

Project 675838 was renamed Mission Planning Systems Development from Mission Planning Systems in FY13.

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 Combat Air Forces (CAF) and Mobility Air Forces (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, commercial off the shelf-based, user friendly product; and 5) retain compatibility with platform changes to avionics and operational flight programs.

This project also continues the development of a Joint Precision Airdrop System-Mission Planner (JPADS-MP) 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. Activities also include studies and analysis to support both current program planning and execution and future program planning. Development and modernization activities within this project are as follows:

- a. 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.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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) Development</i>
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- b. MPS Modernization - continues the modernization of overarching technologies (including the framework) to support development of Mission Planning Environments (MPEs) for various CAF and MAF platforms.

- c. CAF MPE Modernization: Beginning in FY13, these efforts will modernize CAF MPEs that were developed and delivered under MPS Increments II – IV. The modernization effort will provide new and improved mission planning capability for individual Operational Flight Program (OFP) requirements, such as new weapons, avionics upgrades, communications systems, etc. The OFPs requiring MPE updates under the CAF Modernization effort in Fiscal Years 2011 through 2017 include but are not limited to those for A-10 (Suites 8, 9, 10, 11, 12), B-1B (Sustainment Blocks (SB) 15, 16, 16a, 17 and 18), and F-15 (Suites 7, 8, 9, and 10). CAF modernization also includes updates to mission planning capabilities supporting associated weapons, including Small Diameter Bomb (SDB), Joint Direct Attack Munitions (JDAM) and the Joint Air-to-Surface Standoff Missile (JASSM). Finally, CAF modernization will address required improvements to CAF related MPE Common Components (CCs), including Precision-Guided Munitions Planning System (PGMPS), Electronic Warfare CC (EWCC), etc.

- d. MAF MPE Modernization: This effort modifies the common MAF MPE developed and deployed during previous mission planning increments. The modernization activities will provide new and improved mission planning capabilities for the MAF fleet as required to meet evolving OFP, fuel efficiency and Global Planning netcentric requirements such as avionics upgrades, communication systems, interfaces with command and control systems, new chutes, etc. for various MAF platforms. The MPE updates under the MAF Modernization effort in Fiscal Years 2011 through 2017 include but are not limited to those for C-5, C-17, C-27, C-130s (multiple variants), E-3, E-8, E-4, HH-60, KC-10, KC-46, KC-135, and RC-135. MAF modernization will address required improvements to MAF related MPE CCs, including the Communications, Navigation Surveillance/Air Traffic Management (CNS/ATM) CC, Consolidated Airdrop Tool (CAT), Aeronautical Advisory and Notices to Airmen Tool (AANT), and Air Refueling Tool (ART) CC.

- e. Joint Precision Airdrop System –Mission Planner (JPADS-MP) - continues development of software and hardware required to provide a precision airdrop capability for AF and other services (e.g the Army, etc).

- f. Test, Training and Certification - continues all MPS-related integration, test, and certification activities for all CAF and MAF platforms.

- g. Operational and Technical Support - continues all program office management operations and support activities to ensure the timely delivery of mission planning systems to the warfighter.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Increment IV Development Description: Continue contractor-executed software development and test activities required to migrate selected CAF and MAF platforms to the new MPS Increment IV mission planning capability.	9.270	6.390	6.405

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012		
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) Development</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p><i>FY 2011 Accomplishments:</i> Continued the development, testing, and fielding of FW 1.4 software. Completed development and fielding activities for B-1B, F-22A, and A-10 Mission Planning Environments.</p> <p><i>FY 2012 Plans:</i> Continue development of the unique planning component portion of the MPEs for F-22 and A-10.</p> <p><i>FY 2013 Plans:</i> Complete development of the unique planning component portion of the MPE for F-22.</p>				
<p><i>Title:</i> MPS Modernization</p> <p><i>Description:</i> Continues modernization of MPEs for previously migrated platforms to enable use of new capabilities being developed in the OFPs.</p> <p><i>FY 2011 Accomplishments:</i> Conducted system engineering and integration activities to support the continued modernization of previously migrated CAF and MAF platforms and requirements analysis for updates to the MPS Framework (FW 1.5).</p> <p><i>FY 2012 Plans:</i> Conduct system engineering and integration activities to support the continued modernization of previously migrated CAF and MAF platforms and continue software development of Framework 1.5.</p> <p><i>FY 2013 Plans:</i> N/A</p>		10.135	6.811	-
<p><i>Title:</i> Test, Training and Certification</p> <p><i>Description:</i> 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 2011 Accomplishments:</i> Continued formal Government testing of software and other development efforts for MPS Increment IV and MPS modernization.</p> <p><i>FY 2012 Plans:</i> Continue formal Government testing for MPS Increment IV, and MPS modernization efforts.</p> <p><i>FY 2013 Plans:</i></p>		9.412	7.346	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force **DATE:** February 2012

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) Development</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Beginning in FY13 all Test, Training, and Certification requirements will be allocated to their respective programs in 675302, Precision Aerial Delivery Systems (PADS), and 675380, MPS Modernization.			
<p>Title: Operations/Technical Support</p> <p>Description: Continues all program management office technical and administrative activities and operations necessary to support development and fielding of all MPS capabilities.</p> <p>FY 2011 Accomplishments: Provided technical support for MPS Increment IV and MPS modernization efforts.</p> <p>FY 2012 Plans: Provide technical support for MPS Increment IV and MPS modernization activities.</p> <p>FY 2013 Plans: Beginning in FY13 all Operations/Technical Support requirements will be allocated to their respective programs in 675302, PADS, and 675380, MPS Modernization.</p>	10.403	7.457	-
<p>Title: JPADS Development</p> <p>Description: Continue development of a JPADS capability for precise, high-altitude delivery of material to forward ground forces.</p> <p>FY 2011 Accomplishments: Completed JPADS-MP/Consolidated Airdrop Tool (CAT) v1 (Win XP) software. Continued development, integration and testing of CAT v2 (VISTA) software. Completed requirements analysis of CAT v3 (wx refactor) software.</p> <p>FY 2012 Plans: N/A</p> <p>FY 2013 Plans: N/A</p>	4.443	-	-
Accomplishments/Planned Programs Subtotals	43.663	28.004	6.405

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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) Development</i>

D. Acquisition Strategy

MPS development 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

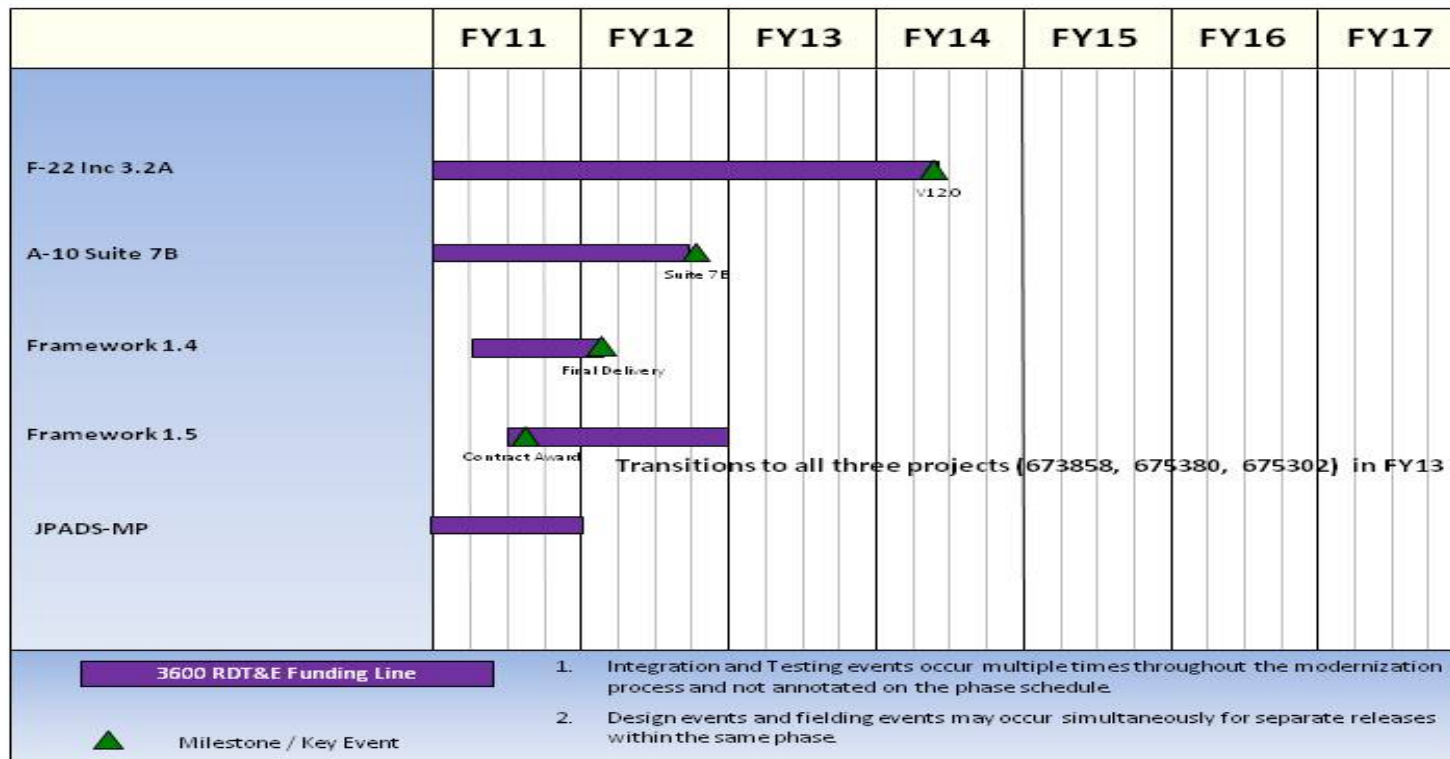
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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) Development</i>



Mission Planning Systems (MPS) Development Project 673858



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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) Development</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
F-22 Inc 3.2A v12.0 Fielding	2	2014	2	2014
A-10 Suite 7B Fielding	4	2012	4	2012
Framework 1.4 Final Delivery	1	2012	1	2012
Framework 1.5 Contract Award	3	2011	3	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
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>Precision Aerial Delivery Systems (PADS)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675302: <i>Precision Aerial Delivery Systems (PADS)</i>	4.238	4.142	5.546	-	5.546	2.815	4.322	3.894	0.945	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Project 675302 was renamed Precision Aerial Delivery Systems (PADS) from Mobility Air Forces (MAF) Planning Systems in FY13.

A. Mission Description and Budget Item Justification

Mission planning involves the creation of a flight plan based on multiple inputs including 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; download pertinent flight information to on-board aircraft avionics; and, conduct dynamic/in-flight replanning as applicable. This project continues the development of a Joint Precision Airdrop System-Mission Planner (JPADS-MP) 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 for all ballistic airdrop mission as well as precision guided airdrops that are required 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 payloads to keep the warfighter supplied and in the fight.

Some key requirements on the horizon for the Consolidated Airdrop Tool (CAT) include refactoring WindPADS (Weather component of CAT), Combination Airdrop, Local Analysis and Prediction System (LAPS) replacement, Ensemble Weather prediction, and Obstruction Data. CAT will also be integrating multiple S&T efforts developed and prototyped by Natick Soldier Center including Airdrop Damage Estimate and updates to Precision Aerial Guidance Units. The JPADS-MP will also transition various AFRL Flagship Capability Concept (FCC) efforts to include improvements to Airdrop Performance Modeling, Light Detection and Ranging (LIDAR) and updates to Human Effectiveness of the software.

Activities also include studies and analysis to support both current program planning and execution and future program planning. Development and modernization efforts are as follows:

- a. MAF MPE Modernization - modifies the common MAF Mission Planning Environment (MPE) developed and deployed during previous mission planning increments. The modernization activities will provide new and improved mission planning capabilities for the MAF fleet as required to meet evolving Operational Flight Program (OFP), fuel efficiency and Global Planning netcentric requirements such as avionics upgrades, communication systems, interfaces with command and control systems, new chutes, etc. for various MAF platforms. The MPE updates under the MAF Modernization effort in Fiscal Years 2011 through 2017 include but are not limited to those for C-5, C-17, C-27, C-130s (multiple variants), E-3, E-8, E-4, HH-60, KC-10, KC-46, KC-135 and RC-135. MAF modernization will address required

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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>Precision Aerial Delivery Systems (PADS)</i>
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improvements to MAF related MPE Common Components (CCs), including the Communications, Navigation Surveillance/Air Traffic Management (CNS/ATM) CC, Consolidated Airdrop Tool (CAT), Aeronautical Advisory, and Notices to Airmen (NOTAMS) Tool (AANT), and Air Refueling Tool (ART) CC. This effort also provides the capability to use the new Digital Aeronautical Information File (DAFIF) web services-based data structure (GNS-A) being produced by NGA in this timeframe.

b. Joint Precision Airdrop System – Mission Planner (JPADS-MP) - continues development of software and hardware required to provide a precision airdrop capability for AF and other services (e.g the Army, etc).

c. Test, Training and Certification - continues all MPS-related integration, test, and certification activities for all CAF and MAF platforms.

d. Operational and Technical Support - continues all program office management operations and support activities to ensure the timely delivery of mission planning systems to the warfighter.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: JPADS Development</p> <p>Description: Continue development of a JPADS capability for precise, high altitude delivery of material to forward ground forces.</p> <p>FY 2011 Accomplishments: Completed JPADS-MP/Consolidated Airdrop Tool (CAT)v1 (Win XP) software. Continued development, integration and testing of CAT v 2 (VISTA) software. Completed requirements analysis of CAT v 3 (wx refactor) software. Additional funding in project 673858.</p> <p>FY 2012 Plans: Continued development of CAT v 3 software which predominantly re-architects the WindPads component of CAT software.</p> <p>FY 2013 Plans: CAT v3.x effort will integrate new solution to replace antiquated and "black box" module Local Analysis and Prediction System (LAPS) for improved localized weather modeling. Efforts also include inclusion of updated/new chute systems and related airdrop performance data.</p>	2.426	2.710	5.546
<p>Title: MAF Modernization</p> <p>Description: Continues the modernization of MPEs for MAF platforms</p> <p>FY 2011 Accomplishments:</p>	1.812	1.432	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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>Precision Aerial Delivery Systems (PADS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Continued the modernization of previously fielded mission planning software environments for the E-3 and the E-8. FY 2012 Plans: Continue the modernization of previously fielded mission planning software environments for the E-3, E-8, and RC-135. FY 2013 Plans: Beginning in FY13 all MAF Modernization requirements will be allocated to 675380, MPS Modernization.			
Accomplishments/Planned Programs Subtotals	4.238	4.142	5.546

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF, PE 0208006F, Mission Plann...: -	15.918	9.709	8.487	0.000	8.487	8.525	9.334	9.585	9.683	Continuing	Continuing

D. Acquisition Strategy
PADS 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.

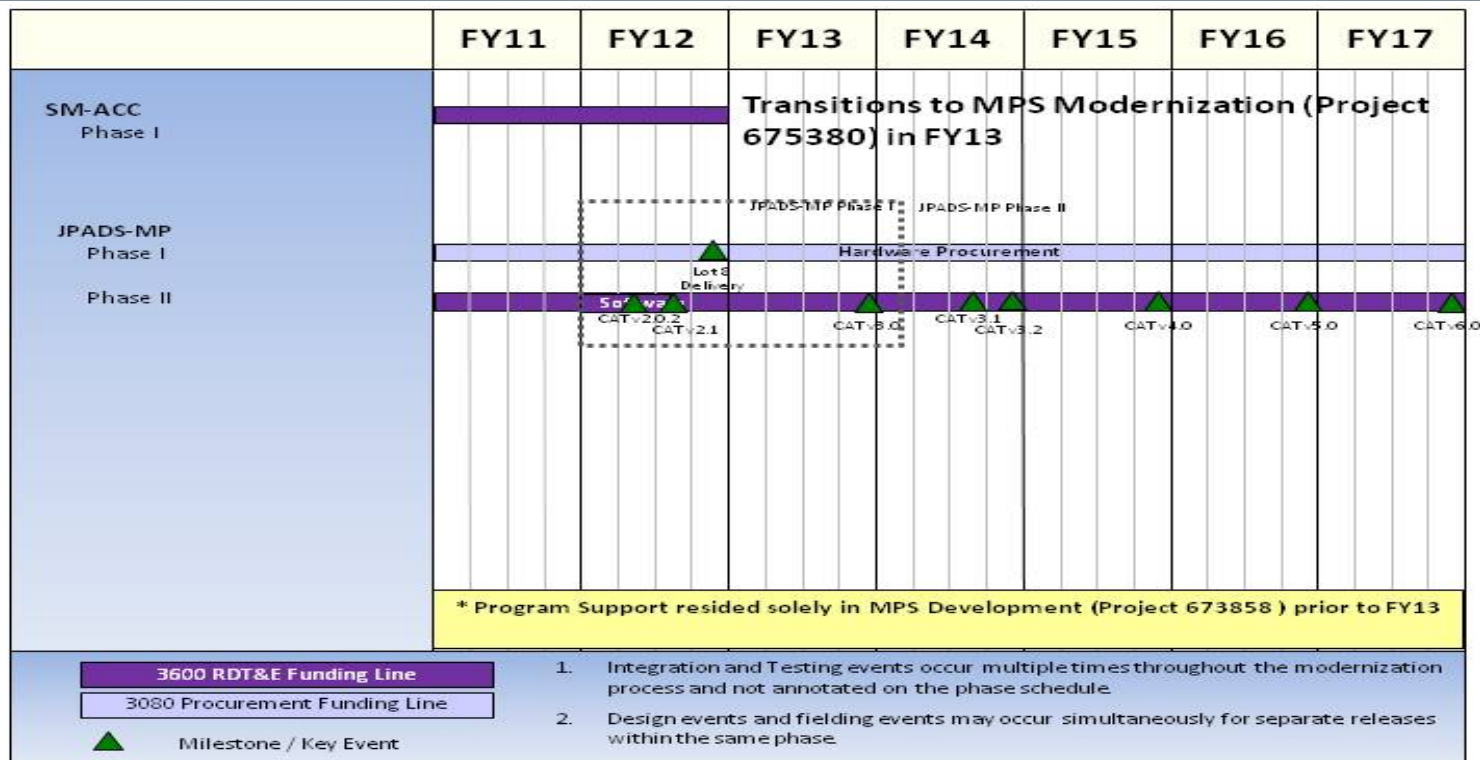
E. Performance Metrics
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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>Precision Aerial Delivery Systems (PADS)</i>



Precision Aerial Delivery Systems (PADS) Project 675302



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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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>Precision Aerial Delivery Systems (PADS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JPADS-MP CAT v2.0.2 Fielding	2	2012	2	2012
JPADS-MP CAT v2.1 Fielding	3	2012	3	2012
JPADS-MP CAT v3.0 Fielding	4	2013	4	2013
JPADS-MP CAT v3.1 Fielding	3	2014	3	2014
JPADS-MP CAT v3.2 Fielding	4	2014	4	2014
JPADS-MP CAT v4.0 Fielding	4	2015	4	2015
JPADS-MP CAT v5.0 Fielding	4	2016	4	2016
JPADS-MP CAT v6.0 Fielding	4	2017	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
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>Mission Planning Systems (MPS) Modernization</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675380: <i>Mission Planning Systems (MPS) Modernization</i>	32.591	30.863	57.426	-	57.426	66.684	72.358	77.725	83.597	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Project 675380 was renamed Mission Planning Systems (MPS) Modernization from Combat Air Forces (CAF) Planning Systems in FY13.

FY11 funding is in Project 675838, MPS Development.

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 weapons, 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 modernizing MPS to support CAF and Mobility Air Forces (MAF), including the development, test and sustainment of Mission Planning Environments (MPEs) to support the A-10, B-1B, C-5, C-17, C- 27, C-130, E-3, E-8, F-15, F-16, F-22A, KC-10, KC-46, KC-135, RC-135, and other platforms. Activities also include studies and analysis to support both current program planning and execution and future program planning. MPS Modernization efforts are as follows:

a. MPS Increment IV Development: This effort continues update/development activities for platforms that previously transitioned to MPS (e.g. F-15, F-16, A-10, B-1B, and F-22A Increment 3.2A) to provide capabilities IAW the Increment IV Capability Development Document (CDD). In addition, it also upgrades several Common Components (CCs) that are utilized on a variety of CAF platforms. Starting in FY13, all MPS Increment IV Development efforts will reside in Project 673858, Mission Planning Systems (MPS) Development.

b. CAF MPE Modernization: These efforts modernize CAF MPEs that were developed and delivered under MPS Increments II – IV. The modernization effort will provide new and improved mission planning capability for individual Operational Flight Program (OFP) requirements, such as new weapons, avionics upgrades, communications systems, etc. The OFPs requiring MPE updates under the CAF Modernization effort in Fiscal Years 2011 through 2017 include but are not limited to those for A-10 (Suites 8, 9, 10, 11, 12), B-1B (Sustainment Blocks 15, 16, 16a, 17 and 18), F-15 (Suites 7, 8, 9, and 10), F-16 Block 30 (System Capability Upgrade [SCU] 8, 9 and 10), F-16 Block 40/50 (M6.1, M6.5, M7.1, and M8.0) and F-22 (Increments 3.2B, 3.2C, and 4.0). CAF modernization also includes updates to mission planning capabilities supporting associated weapons, including Small Diameter Bomb (SDB-II), Joint Direct Attack Munitions (JDAM) and the Joint Air-to-Surface Standoff Missile (JASSM). Finally, CAF modernization will address required improvements to CAF related MPE CCs, including Precision-Guided Munitions Planning System (PGMPS), Electronic Warfare CC (EWCC), etc.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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>Mission Planning Systems (MPS) Modernization</i>
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c. MAF MPE Modernization: This effort modifies the common MAF MPE developed and deployed during previous mission planning increments. The modernization activities will provide new and improved mission planning capabilities for the MAF fleet as required to meet evolving OFP, fuel efficiency and Global Planning netcentric requirements such as avionics upgrades, communication systems, interfaces with command and control systems, new chutes, etc. for various MAF platforms. The MPE updates under the MAF Modernization effort in Fiscal Years 2011 through 2017 include but are not limited to those for C-5, C-17, C-27, C-130s (multiple variants), E-3, E-8, E-4, HH-60, KC-10, KC-46, KC-135, and RC-135. MAF modernization will address required improvements to MAF related MPE CCs, including the Communications, Navigation Surveillance/Air Traffic Management (CNS/ATM) CC, Consolidated Airdrop Tool (CAT), Aeronautical Advisory and Notices to Airmen Tool (AANT), and Air Refueling Tool (ART) CC. This effort also provides the capability to use the new Digital Aeronautical Information File (DAFIF) web services-based data structure (GNS-A) being produced by NGA in this timeframe.

To meet the unique needs of Air Mobility Command (AMC), the Mobility Air Force Automated Flight Planning Service (MAFPS) component of MPS will provide a centralized/net-centric Global Mobility mission flight planning capability. This service will provide significant fuel savings through automated flight route optimization utilizing aircraft performance, air traffic management, weather, and other data.”

- d. Test, Training and Certification: Continues all MPS-related integration, test, and certification activities for all CAF and MAF platforms.
- e. Operational and Technical Support: Continues all program office management operations and support activities to ensure the timely delivery of mission planning systems to the warfighter.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Increment IV Development Description: Continues development of MPS Increment IV MPEs for CAF platforms (e.g. A-10, F-15, F-16, F-22, B-1B). FY 2011 Accomplishments: Continued development of the unique planning component portion of MPE for the E-3 and E-8 platforms. FY 2012 Plans: Complete development of the unique planning component portion of MPEs for the A-10 and F-22A platforms. FY 2013 Plans: In FY13 all MPS Increment IV requirements will be executed in Project 673858, MPS Development.	3.460	10.971	-
Title: CAF Modernization	29.131	19.892	42.647

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012	
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>Mission Planning Systems (MPS) Modernization</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012
<p>Description: Continues the modernization of previously fielded Mission MPEs to enable efficient use of new and improved capabilities being developed in the OFPs of CAF platforms.</p> <p>FY 2011 Accomplishments: Continued modernization of previously fielded mission planning software environments for B-1B, F-15, F-16, and F-22A. Included design, code integration, and documentation of software components. Also supported training for units that received the additional functional capabilities developed and incorporated in platform OFPs.</p> <p>FY 2012 Plans: Continues the modernization of previously fielded mission planning software environments for the A-10, B-1B, F-15, F-16 and F-22A. Future funding will incorporate changes to the requirements by the Operation Flight Programs as the warfighter transitions to the Joint Mission Planning System. Air Combat Command (ACC) and AMC supplies functional and performance requirements that must be implemented relative to each particular platform mission planning requirements. This will include the implementation of specific UPC improvements based upon fielded problems, developer evaluations, and Developmental and Operational testing as agreed to by HQ ACC and AMC. As part of the modernization effort MPE software shall interoperate with the baseline JMPS Framework, PGMPS, Weapons Data link, and key handling software for the newly identified SDB-II (Network Enabled Weapons) capability.</p> <p>FY 2013 Plans: Specific CAF efforts include but are not limited to: ongoing development of the A-10 Suite 8 (at this time specific mission planning requirements in support of Suite 8 OFP have not been addressed/evaluated); ongoing development of the F-15 v3.2 which includes incorporation of Network Enabled Weapons (NEW); continued development on F-15 v4.0 which includes SDB-II updates; design and development of the F-15 v4.1; design, development of the F-16 Block 30 System Capability Upgrade (SCU) 9 OFP; design and development of the M6.5 and M7.1 MPEs in support of the associated F-16 Block 40/50 OFPs, including mission planning support for the Air Launch Aerial-Intercept Guided Missile-9X (AIM-9X) Block II integration; further development of the F-22 v12.0 for 3.2A OFP and F-22 v13.0 MPE, providing mission planning support to the Increment 3.2B OFP for AIM 120D and AIM-9X integration, Electronic Protection, Embedded Training, and SDB management. Additional effort may be driven by ACC requirements, to include, but not limited to, specific MPE improvements based upon problems discovered in fielded versions, developer evaluations and formal Government testing.</p>			
Title: MAF Modernization		-	-
<p>Description: Continue the modernization of previously fielded mission planning software environments for the E-3, E-8, E-4, EC-130, and RC-135. Begin activities for modernization of the MAF MPE to include C-5, C-17, C-130s, C-27, KC-10, KC-135, and KC-46 platforms.</p>			14.779

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force	DATE: February 2012
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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>Mission Planning Systems (MPS) Modernization</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<i>FY 2011 Accomplishments:</i> N/A			
<i>FY 2012 Plans:</i> N/A			
<i>FY 2013 Plans:</i> Will continue the modernization of previously fielded mission planning software environments for Special Mission Air Combat Command platforms (SM-ACC), the E-3, E-8, E-4, EC-130, and RC-135. Begin activities for modernization of the MAF MPE to include C-5, C-17, C-130s, C-27, KC-10, KC-135, and KC-46 platforms.			
Accomplishments/Planned Programs Subtotals	32.591	30.863	57.426

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF, PE 0208006F, Mission Plann...: -	9.426	8.819	6.808	0.000	6.808	5.678	8.011	8.761	9.127	Continuing	Continuing

D. Acquisition Strategy
Mission Planning Systems (MPS) Modernization 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY

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

R-1 ITEM NOMENCLATURE

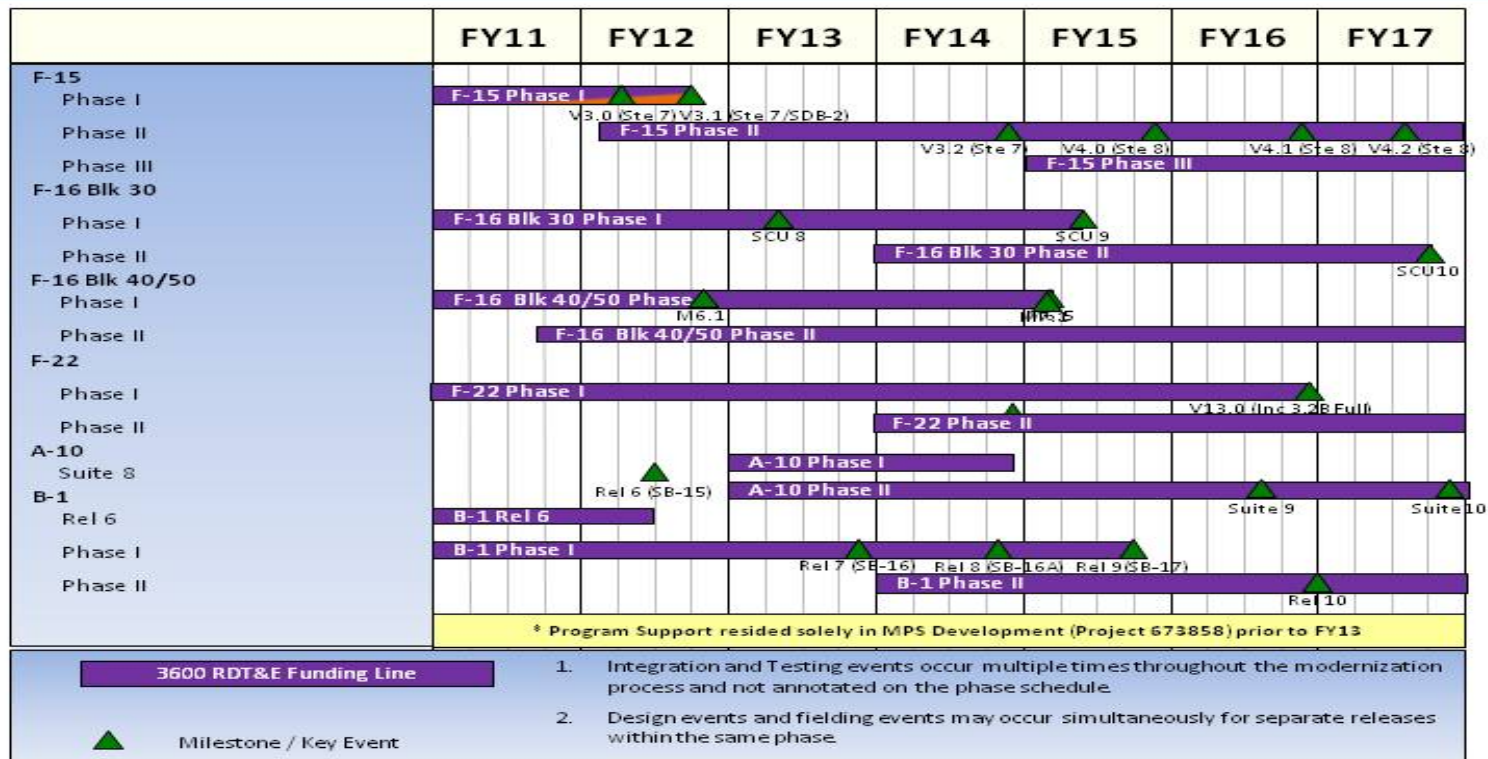
PE 0208006F: Mission Planning Systems

PROJECT

675380: Mission Planning Systems (MPS) Modernization



Mission Planning Systems (MPS) Modernization
Project 675380
CAF Modernization (page 1 of 2)

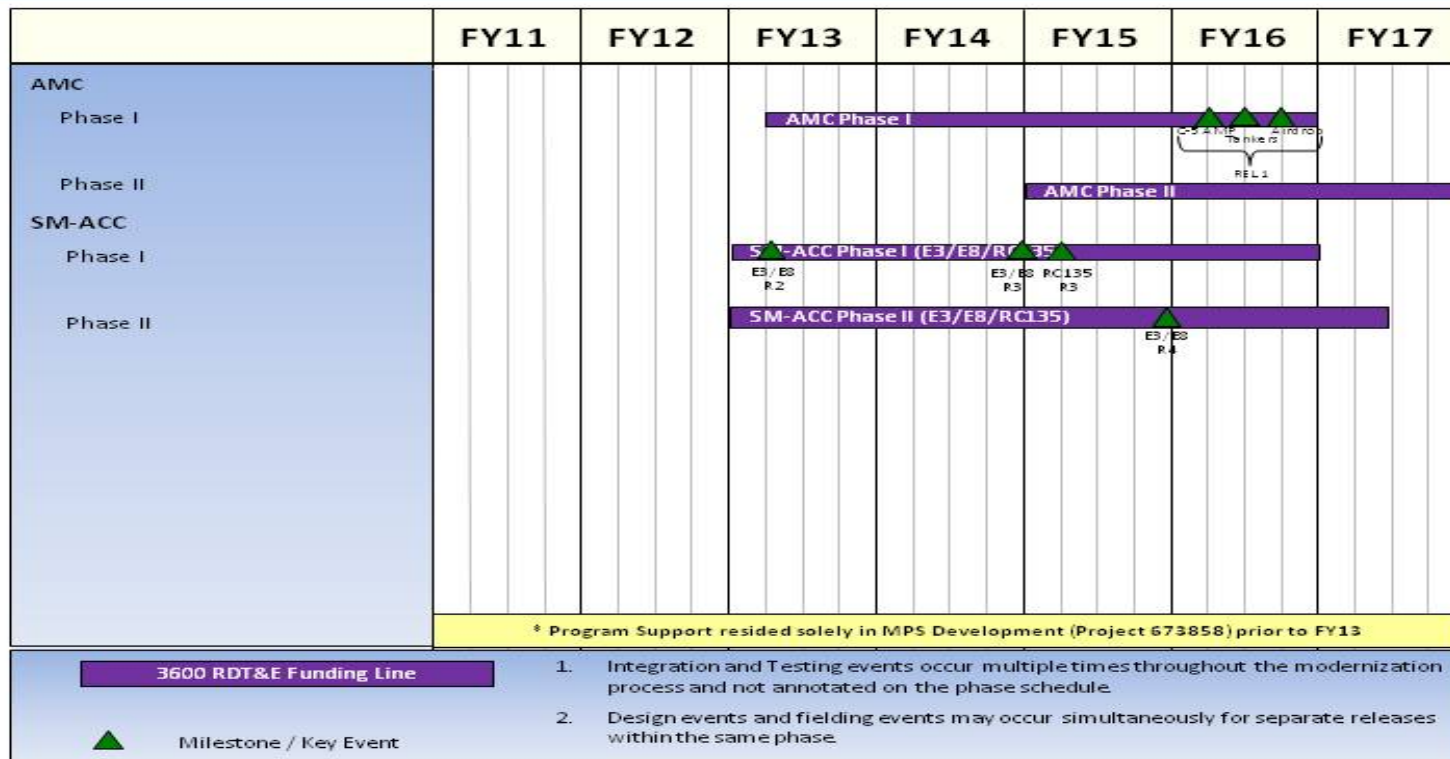


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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208006F: <i>Mission Planning Systems</i>	PROJECT 675380: <i>Mission Planning Systems (MPS) Modernization</i>



Mission Planning Systems (MPS) Modernization Project 675380 MAF Modernization (page 2 of 2)



UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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>Mission Planning Systems (MPS) Modernization</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
F-15 v3.0 Fielding	2	2012	2	2012
F-15 v3.1 Fielding	4	2012	4	2012
F-15 v3.2 Fielding	4	2014	4	2014
F-15 v4.0 Fielding	4	2015	4	2015
F-16 Blk 30 SCU 8 Fielding	2	2013	2	2013
F-16 Blk 30 SCU 9 Fielding	2	2015	2	2015
F-16 Blk 40/50 M6.1 Fielding	4	2012	4	2012
F-16 Blk 40/50 M6.5 Fielding	1	2015	1	2015
F-16 Blk 40/50 M7.1 Fielding	1	2016	1	2016
F-22 v13.0 Fielding	4	2016	4	2016
A-10 Suite 8 Fielding	4	2014	4	2014
B-1 Release 6 Fielding	2	2012	2	2012
B-1 Release 7 Fielding	4	2013	4	2013
B-1 Release 8 Fielding	4	2014	4	2014
B-1 Release 9 Fielding	4	2015	4	2015
B-1 Release 10 Fielding	4	2016	4	2016
AMC Modernization C-5 AMP Release 1 Fielding	1	2016	1	2016
AMC Modernization Tankers Release 1 Fielding	2	2016	2	2016
AMC Modernization Airdrop Release 1 Fielding	3	2016	3	2016
SM-ACC E-3 / E-8 Release 2 Fielding	2	2013	2	2013
SM-ACC EC-130H Release 1 Fielding	4	2013	4	2013
SM-ACC E-3 / E-8 Release 3 Fielding	1	2015	1	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force **DATE:** February 2012

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>Mission Planning Systems (MPS) Modernization</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
SM-ACC RC-135 Release 3 Fielding	1	2015	1	2015
SM-ACC EC-130H Release 2 Fielding	3	2015	3	2015
SM-ACC E-3 / E-8 Release 4 Fielding	4	2015	4	2015
SM-ACC EC-130H Release 3 Fielding	4	2016	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	2.152	2.314	7.159	-	7.159	2.235	2.265	2.331	2.540	Continuing	Continuing
670374: <i>TECH and SPT</i>	2.152	2.314	7.159	-	7.159	2.235	2.265	2.331	2.540	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2013, 670374, Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt, includes new start efforts.

A. Mission Description and Budget Item Justification

This Program Element funds research and development of strategy, assessment, and information operations (IO) capabilities required in support of Air Operation Center (AOC) command and control processes and supported combatant commanders. Programs currently supported include the Information Warfare Planning Capability (IWPC) - the JFACC's system of record for strategy, operational assessment and network mapping/network nodal analysis. IWPC is a full-spectrum, offensive and defensive, planning capability. IWPC is an AOC weapon system component which enables operators to develop 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 upgrade, 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), Joint Targeting Toolbox, and other AOC tools. This PE funds development and continued research to identify existing military and commercial efforts which can satisfy unfulfilled operational requirements for IO analysis, targeting, planning, and integration. Activities also include studies and analysis to support both current program planning and execution and future program planning.

FY13 funding also supports the National Technical Nuclear Forensics (NTNF) program. The NTNF program provides the US Government's framework to identify the source of a nuclear detonation in US or allied territory. AF contributions to this effort, include, but are not limited to collection of airborne particulate material following an incident. Currently, collection would be accomplished via a WC-135 Constant Phoenix aircraft, which is a limited availability asset (only 1 primary a/c in the fleet). The Defense Threat Reduction Agency (DTRA) is developing a pod (Harvester pod) capable of being mounted on an aircraft (TBD) that will provide additional capacity to conduct this mission. Funding will provide integration and testing of that pod.

This program is in Budget Activity 7, Operational System Development, these budget activities include development efforts to upgrade systems currently fielded or has approval for full-rate production and anticipate production funding in the current or subsequent fiscal year.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	2.294	2.322	2.355	-	2.355
Current President's Budget	2.152	2.314	7.159	-	7.159
Total Adjustments	-0.142	-0.008	4.804	-	4.804
• Congressional General Reductions	-	-0.008			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.060	-			
• Other Adjustments	-0.082	-	4.804	-	4.804

Change Summary Explanation

FY11 Congressional General Reduction of 0.082M in Other Adjustment row.

FY12 Congressional General Reduction (FFRDC, Sec. 8023) of 0.008M.

FY13 funding increased to support NTNF program.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: IWPC	2.152	2.314	2.205
Description: Information Warfare Planning Capability (IWPC) Installation/Training/Upgrades			
FY 2011 Accomplishments: This funding continued the maintainance of the IWPC program to meet warfighter requirements. This project funded the upgrades, installation, and training of the IWPC suite of planning and decision support tools. Software and hardware updates were necessary to keep up with existing technology and maintain interoperability with external programs. These funds also support required testing and contract support. Completed IWPC Obsolescence study; software reaching end-of-life.			
FY 2012 Plans: This funding supports maintenance of the IWPC program to meet continued warfighter requirements. This project continues training and upgrades of the IWPC suite of planning and decision support tools. Software and hardware updates are necessary			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
to keep up with existing technology and maintain interoperability with external programs. Funding also funds required testing and contractor support. FY 2013 Plans: This funding will support continuing maintenance of the IWPC program to meet continued warfighter requirements and will fund upgrade training and upgrades/modifications 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. Funding will also fund required testing and contractor support.			
Title: NTNF Description: Funding provides integration and testing of collection pod (Harvester Pod) on the C-130J and MQ-9 platforms. It also provides support for Concept of Operations (CONOPS) and Tactics, Techniques, and Procedures (TTP) development. FY 2013 Plans: This funding supports the NTNF program. The Defense Threat Reduction Agency (DTRA) will develop a pod (Harvester pod) capable of collecting airborne particulate material following a nuclear detonation. Funding will provide the integration and testing of the pod.	-	-	4.954
Accomplishments/Planned Programs Subtotals	2.152	2.314	7.159

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• O&M, PE 0208021F, Informatio...: <i>Sustainment and Maint Releases</i>	2.380	2.358	2.287	0.000	2.287	2.336	2.367	2.414	2.446	Continuing	Continuing

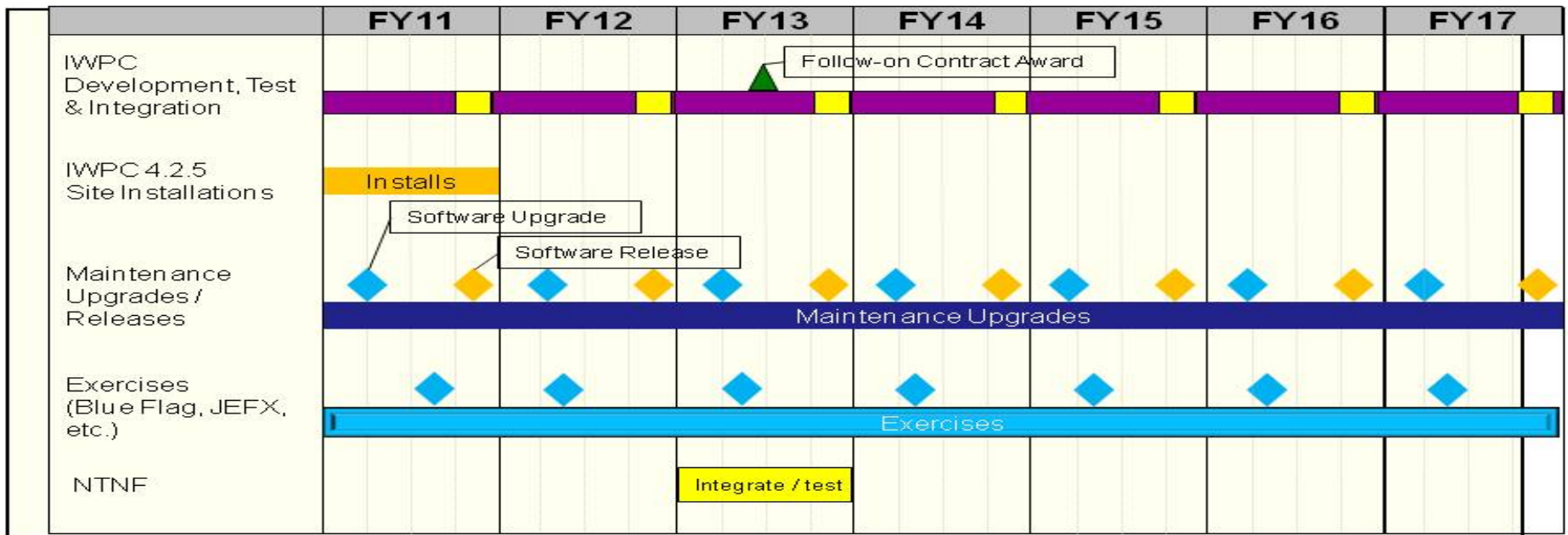
E. Acquisition Strategy
IWPC site installations of Ver 4.2.5 were completed in FY11. Future upgrades will be delivered as maintenance releases with incremental increases in capability.

F. 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.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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: TECH and SPT



IWPC Program Schedule



- Concept Activities
- Design / development
- Integrate / test
- Fielding
- Operations and Sustainment
- Key events

Current as of: Jan 2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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>TECH and SPT</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
IWPC Development Test & Integration	1	2011	4	2017
IWPC 4.2.5 Fielding/Site Installation	1	2011	4	2011
IWPC Upgrades/Maintenance Releases	1	2011	4	2017
Exercises	1	2011	4	2017
NTNF Program Integration & Test	1	2013	4	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

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>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	18.039	0.702	66.888	-	66.888	68.400	67.712	74.523	72.420	Continuing	Continuing
676002: <i>CYBER SYSTEMS MODERNIZATION</i>	18.039	0.702	66.888	-	66.888	68.400	67.712	74.523	72.420	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note
In FY 2013, 676002, Cyber Systems Modernization, efforts were transferred from PE 0307141F, NASS, IO Tech Integration & Tool Dev, 674871, Information Operations Technology, in order to align all CYBERCOM funding into one PE.

A. Mission Description and Budget Item Justification

The US Cyber Command (USCYBERCOM) responsibilities include planning, integrating, and coordinating Computer Network Operations (CNO) capabilities; operational and tactical level planning and day-to-day employment of assigned and attached Offensive Cyber Operations (OCO) forces; integration of OCO forces with Defensive Cyber Operations (DCO) forces and planning and coordination of cyber capabilities that have trans-regional effects or that directly support national objectives; providing OCO/DCO support for assigned missions and OCO/DCO planning and integration in support of other Combatant Commanders (COCOMs) as directed.

USCYBERCOM will fund research, development, testing, and systems modifications of the technologies and capabilities that allow USCYBERCOM to plan, facilitate coordination and integration, deconflict and synchronize Department of Defense (DoD) CNO activities and capabilities. Activities also include studies and analysis to support both current program planning and execution, and future program planning. USCYBERCOM will also provide the ability for other COCOMs to conduct CNO OCO/DCO planning.

USCYBERCOM supports research and development OCO/DCO capabilities based upon COCOM and USCYBERCOM operational requirements to include supporting and conducting quick reaction development of OCO/DCO capabilities in support of OCO/DCO operations required. An in-house development team (Special Projects Vulnerability Assessment Team) will perform research, small scale prototyping and integration as required to support the mission. The Special Projects Vulnerability Assessment Team provides for electric transmission and analytical support to exploitable vulnerabilities. Additionally, this team will re-tool existing OCO/DCO capabilities to satisfy immediate USCYBERCOM operational needs.

USCYBERCOM accomplishes a large portion of its mission via systems engineering, testing and development across the primary functions of prototyping and deployment for current operations, technical assurance, risk assessments, requirements management, capability development and gap analysis. USCYBERCOM coordinates capability research and development in order to achieve global military objectives. The technical assurance provides "assurance-in-depth" products and services enabling COCOMs to confidently, legally, safely and securely apply CNO capabilities as one of the elements of national power. Further detail is classified and can be provided upon request.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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USCYBERCOM provides support for US Strategic Command (USSTRATCOM) and other geographic and functional COCOM exercises, war games, and experimentation requirements. USCYBERCOM supports the Information Operations (IO) community by providing a cadre of experts on CNO technology and renders technical assistance in the development, review and coordination of CNO plans and operations.

USCYBERCOM integrates and synchronizes its effort with the USSTRATCOM development of CNO military utility assessments, research and development efforts, and advocacy of capability needs for the Joint Capabilities Integration Development System (JCIDS) process. USCYBERCOM specifically is responsible for advocating on behalf of the COCOMs for capability development. It is also responsible for partnering with the development community to seek resource advocacy from USSTRATCOM, and fund capability development with service sponsorship and coordination.

Additionally, USCYBERCOM focuses capability developer's efforts on addressing COCOM requirements, fosters collaboration and partnership to service components and supports research and development of OCO/DCO capabilities for conducting operational planning activities. These efforts include support for initial development, enhancement, testing and fielding support of COCOM or Service capabilities.

This program is in Budget Activity 7, Operational System Development, these budget activities include development efforts to upgrade systems currently fielded or has approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	1.117	0.702	23.943	-	23.943
Current President's Budget	18.039	0.702	66.888	-	66.888
Total Adjustments	16.922	-	42.945	-	42.945
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	16.960	-			
• SBIR/STTR Transfer	-0.032	-			
• Other Adjustments	-0.006	-	42.945	-	42.945

Change Summary Explanation

In FY11, 676002, Cyber Systems Modernization, received \$16.96M via an Above Threshold Reprogramming. Funding provided Offensive Cyber Operations (OCO) capability development to further US Cyber Command and DoD cyber objectives.

FY11 Congressional General Reduction of 0.006M in Other Adjustment row.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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In FY13, 676002, Cyber Systems Modernization, efforts were transferred from PE 0307141F, NASS, IO Tech Integration & Tool Dev, 674871, Information Operations Technology, in order to align all CYBERCOM funding into one PE. Additionally, the growth of cyber capabilities and their application across the DoD and other federal agencies requires additional funding for the Command and its expanded span of control.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: Tool Development Partnership</p> <p>Description: Funding provides tool development through technology partnership with Service Cyber Commands enabling COCOMs to confidently, legally, safely, and securely apply OCO capabilities to align with overall CYBER Priorities **This is also referred to as Call For Proposals (CFP) an evolving partnership tool development activity</p> <p>FY 2011 Accomplishments: Funding provided tool development through technology partnership with Service Cyber Commands enabling COCOMs to confidently, legally, safely, and securely apply OCO capabilities.</p> <p>FY 2012 Plans: Funding provide tool development through technology partnership with Service Cyber Commands enabling COCOMs to confidently, legally, safely, and securely apply OCO capabilities.</p> <p>FY 2013 Plans: In FY13, funding will provide tool development through technology partnership with Service Cyber Commands enabling COCOMs to confidently, legally, safely, and securely apply OCO capabilities.</p>	1.111	0.702	7.000
<p>Title: Technical Assurance testing and training and policy development</p> <p>Description: Funding provides Technical Assurance: Provides "assurance-in-depth" products enabling COCOMs to confidently, legally, safely, and securely apply OCO/DCO capabilities and applications. Upgrade testing laboratory equipment for testing and COCOM training.</p> <p>FY 2013 Plans: In FY 13, funding will provide Technical Assurance: Provide "assurance-in-depth" products enabling COCOMs to confidently, legally, safely, and securely apply OCO/DCO capabilities and applications and will also upgrade testing laboratory equipment for testing and COCOM training.</p>	-	-	5.640
<p>Title: Requirements, Capabilites and Gap Analysis for OCO & DCO activities</p> <p>Description: Funding develops Requirements, Capabilities and Gap Analysis. Provides focused capabilities for geographic and functional COCOMs' exercise, war games, and experimentation requirements. Integrates and synchronizes the development of CNO military utility assessments, research, and development efforts across COCOMs for both OCO and DCO. **This encompasses various offices</p>	16.928	-	52.293

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p><i>FY 2011 Accomplishments:</i> Funding provided support for Offensive Cyber Operations (OCO) capability development to further US Cyber Command and DoD cyber objectives. During FY11, US Cyber Command effectively advocated for additional funding via an above threshold reprogramming.</p> <p><i>FY 2012 Plans:</i> FY12 is covered under the IOT Program Group (37141F) and transfer to CYBERCOM PE 28059F in FY13.</p> <p><i>FY 2013 Plans:</i> In FY13, US CYBERCOM PEs will be consolidated. Funding will provide focused cyber capabilities for geographic and functional COCOMs' requirements. Funding will integrate and synchronize the development of CNO military utility assessments, research, and development efforts across COCOMs for both OCO and DCO. FY13 and beyond, there will be an increase in RDT&E funding to accommodate internal and external capabilities and applications to facilitate OCO, Cyber Situational Awareness Common Operating Picture (COP), Defensive GIG Operations (DGO) and other activities. Additionally, the growth of cyber capabilities and their application across the DoD and other federal agencies will require additional funding for the Command and its expanded span of control.</p>				
<p><i>Title:</i> Cyber Operations Lab and Prototyping and testing range</p> <p><i>Description:</i> Funding provides Cyber Operations Lab continued development/prototyping of tools based on submissions within CNO community. This include Special Projects Vulnerability Assessment Team and laboratory.</p> <p><i>FY 2011 Accomplishments:</i> FY11&12 are covered under the IOT Program Group and transfer to CYBERCOM PE 28059F in FY13</p> <p><i>FY 2012 Plans:</i> FY11&12 are covered under the IOT Program Group and transfer to CYBERCOM PE 28059F in FY13</p> <p><i>FY 2013 Plans:</i> FY13 funding will provide Cyber Operations Lab continued development/prototyping of tools based on submissions within CNO community. This will also include Special Projects Vulnerability Assessment Team and laboratory.</p>		-	-	1.500
<p><i>Title:</i> Cyber Test Activities</p> <p><i>Description:</i> Funding provides support Cyber Test Activities performed outside Cyber Command to test developed capabilities/ applications in an integrated environment. Funding covers approximately thirteen (13) one week test activities at an integrated range/location to supplement Command Directed Service Lab activities. New in FY13 and out. This does not cover/include activities such as Command Exercises.</p>		-	-	0.455

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
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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>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p><i>FY 2011 Accomplishments:</i> FY11&12 are covered under the IOT Program Group and transfer to CYBERCOM PE 28059F in FY13</p> <p><i>FY 2012 Plans:</i> FY11&12 are covered under the IOT Program Group and transfer to CYBERCOM PE 28059F in FY13</p> <p><i>FY 2013 Plans:</i> FY13 funding will provide support Cyber Test Activities performed outside Cyber Command to test developed capabilities/ applications in an integrated environment. Funding covers approximately thirteen (13) one week test activities at an integrated range/location to supplement Command Directed Service Lab activities. This does not cover/include activities such as Command Exercises.</p>			
Accomplishments/Planned Programs Subtotals	18.039	0.702	66.888

D. Other Program Funding Summary (\$ in Millions)												
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>	
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. 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 managed by various Service Component contracting offices, COCOM contracting offices and NSA.

F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force

DATE: February 2012

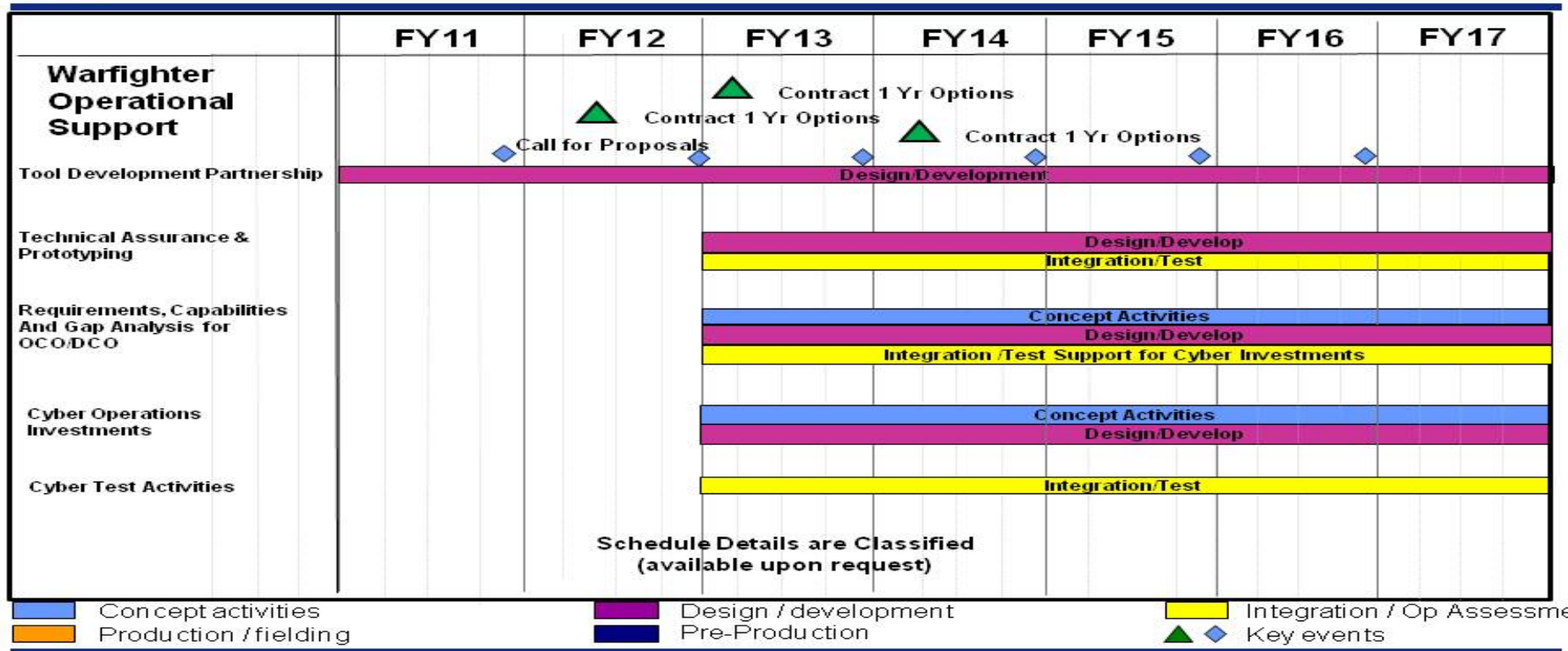
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0208059F: CYBER Command

PROJECT
 676002: CYBER SYSTEMS MODERNIZATION



US Cyber Command Schedule



Current As Of: Jan 2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Call for Proposals	1	2011	1	2017
Tool Development Partnership	1	2011	4	2017
Technical Assurance Testing & Training and Policy Development	1	2013	4	2017
Requirements, Capabilities And Gap Analysis for OCO/DCO	1	2013	4	2017
Cyber Operations and Prototyping	1	2013	4	2017
Cyber Test Activities	1	2013	4	2017

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