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

February 2012



Air Force

Justification Book Volume 2

Research, Development, Test & Evaluation, Air Force

Volume II

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

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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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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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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
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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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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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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
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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

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Line	Program Element No Number	Item	Act	FY 2013 Base	FY 2013 OCO	FY 2013 Total	S e c
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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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Line No	Program Element Number	Item	Act	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Se
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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

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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	

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Line No	Element Number	Program 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	

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31	04	0603432F	Polar MILSATCOM (Space).....	Volume 2 - 49
32	04	0603438F	Space Control Technology.....	Volume 2 - 57
33	04	0603742F	Combat Identification Technology.....	Volume 2 - 71
34	04	0603790F	NATO Cooperative R&D.....	Volume 2 - 89
35	04	0603791F	International Space Cooperative R&D.....	Volume 2 - 119
36	04	0603830F	Space Protection Program.....	Volume 2 - 125
37	04	0603850F	Integrated Broadcast Service (DEM/VAL).....	Volume 2 - 133
38	04	0603851F	ICBM - DEM/VAL.....	Volume 2 - 141
39	04	0603854F	Wideband MILSATCOM (Space).....	Volume 2 - 167
40	04	0603859F	Pollution Prevention.....	Volume 2 - 181
41	04	0603860F	Joint Precision Approach and Landing Systems - Dem/Val.....	Volume 2 - 185
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49	04	0604436F	Next-Generation MILSATCOM Technology.....	Volume 2 - 243
50	04	0604635F	Ground Attack Weapons Fuze Development.....	Volume 2 - 249
51	04	0604775F	DEFENSE RAPID INNOVATION PROGRAM.....	Volume 2 - 255
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53	04	0604830F	Automated Air-to-Air Refueling.....	Volume 2 - 263
54	04	0604857F	Operationally Responsive Space.....	Volume 2 - 267
55	04	0604858F	Technical Transition Program.....	Volume 2 - 279
56	04	0305164F	NAVSTAR Global Positioning System User Equipment Space.....	Volume 2 - 285
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59	05	0604222F	Nuclear Weapons Support.....	Volume 2 - 305
60	05	0604233F	Specialized Undergraduate Pilot Training.....	Volume 2 - 325
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62	05	0604280F	JOINT TACTICAL RADIO SYSTEMS (JTRS).....	Volume 2 - 359
63	05	0604281F	TACTICAL DATA NETWORKS ENTERPRISE.....	Volume 2 - 365
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TACTICAL DATA NETWORKS ENTERPRISE	0604281F	63	05.....	Volume 2 - 365
Technical Transition Program	0604858F	55	04.....	Volume 2 - 279
Technology Transfer	0604317F	44	04.....	Volume 2 - 205
Test and Evaluation Support	0605807F	100	06.....	Volume 2 - 751
Threat Simulator Development	0604256F	95	06.....	Volume 2 - 721
Weather Satellite Follow-On	0604422F	48	04.....	Volume 2 - 237
Wideband MILSATCOM (Space)	0603854F	39	04.....	Volume 2 - 167

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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 Mssile (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	
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>

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced 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
Total Program Element	4.993	4.013	3.866	-	3.866	3.983	4.378	4.404	8.923	Continuing	Continuing
643479: <i>Advanced Sensor Exploitation</i>	1.807	0.773	0.401	-	0.401	0.552	0.575	0.748	1.772	Continuing	Continuing
643480: <i>Automated Imagery Exploitation</i>	0.904	0.919	2.452	-	2.452	1.575	1.206	1.006	2.031	Continuing	Continuing
643481: <i>Knowledge Based Tech For Intelligence</i>	1.564	1.596	0.542	-	0.542	0.790	1.210	1.768	3.563	Continuing	Continuing
643482: <i>Science & Tech Intelligence Methodology</i>	0.718	0.725	0.471	-	0.471	1.066	1.387	0.882	1.557	Continuing	Continuing

A. Mission Description and Budget Item Justification

(U) Intelligence Advanced Development (IAD) demonstrates and validates advanced technologies required to support warfighter needs for timely all-source intelligence information. IAD research supports global awareness, consistent battlespace knowledge, precision information, and the execution of time-critical missions. IAD projects provide better on-time information to the warfighter by using new and existing data sources, streamlining data analyses, reducing the required intelligence footprint, and by extending the life of sensors in place as well as enhancing their performance. The Air Force Research Laboratory, Rome Research Site, Information and Intelligence Exploitation Division (AFRL/RIE) works directly with users, employing a rapid prototyping evolutionary approach, and then integrating finished modules directly into the field. The programs are oriented towards specific shortfalls and deficiencies as documented by the major commands, combatant commands, and intelligence organizations in their mission and functional area plans. The goal of this activity is to expedite technology transition from the laboratory to operational use via rapid prototyping. This activity is focused on technology insertion to correct Air Force intelligence deficiencies at tactical and operational levels. The effort bridges the transition of new technologies from Advanced Technology Demonstrations and Integrated Technology Thrust Programs into current/new systems, and also supports the associated Defense Technology Objectives. IAD may reallocate existing resources to support out-of-cycle new/updated warfighter requirements.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</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	5.019	4.013	3.859	-	3.859
Current President's Budget	4.993	4.013	3.866	-	3.866
Total Adjustments	-0.026	-	0.007	-	0.007
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-0.026	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	0.007	-	0.007

Change Summary Explanation

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>	PROJECT 643479: <i>Advanced Sensor Exploitation</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
	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					
643479: <i>Advanced Sensor Exploitation</i>	1.807	0.773	0.401	-	0.401	0.552	0.575	0.748	1.772	Continuing	Continuing					
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0							

A. Mission Description and Budget Item Justification

The project objectives are to develop, demonstrate and evaluate a near-real-time all source correlation/fusion capability by applying state-of-the-art data processing techniques for the receipt, correlation, templating, and analysis of battlefield information. Capabilities will be developed in an open systems architecture environment allowing for the greatest efficiency in terms of integrating or interfacing with other systems. There are Air Force, DoD, and Coalition needs to correlate various sources of intelligence information (Communications Intelligence - COMINT, Electronic Intelligence - ELINT, Imagery Intelligence - IMINT and Measurement and Signature Intelligence - MASINT) within seconds/minutes as opposed to hours/days with current manual and semi-automated methods. The project includes development of data correlation and predictive intelligence algorithms as well as target analysis and prioritization, air order of battle update, and tactical analysis techniques. This computerized approach will speed up the correlation of data from diverse sources of intelligence information, including COMINT, ELINT, IMINT and MASINT; providing faster situational awareness and threat assessment, and replace manual systems with automated capabilities. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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

	FY 2011	FY 2012	FY 2013
Title: Smart Target Folders	1.807	0.773	0.401
Description: Develops capability to automatically and continuously develop target folders, a cohesive picture of adversaries and their intent, in order to provide actionable intel to operations component.			
FY 2011 Accomplishments: Initiated development of the capability to automatically and continuously develop target folders, a cohesive picture of adversaries and their intent, in order to provide actionable intel to operations component.			
FY 2012 Plans: Deliver Spiral 1.0 and initiate development of Spiral 1.1			
FY 2013 Plans: Will continue the development of Spiral 1.1			
Accomplishments/Planned Programs Subtotals	1.807	0.773	0.401

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>	PROJECT 643479: <i>Advanced Sensor Exploitation</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>
• 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

D. Acquisition Strategy

Requirements for new advanced sensor exploitation technologies are gathered and prioritized by the Air Force Intelligence, Surveillance, and Reconnaissance Agency (AFISRA), formerly the Air Intelligence Agency. Development of the new / improved capabilities to meet the requirements is managed by AF Research Laboratory (Rome Research Site). Prototype products (usually software), once evaluated by the users, are fielded in incremental capability spirals. All contracts within this project 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>	PROJECT 643479: <i>Advanced Sensor Exploitation</i>



Intelligence Advanced Development Program – Advanced Sensor Exploitation Program Schedule (BPAC 643479)

	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Smart Target Folders (STF)	▲	Field STF Spiral 1.0 ◆	Field STF Spiral 1.1 ◆			Field STF Spiral 1.2 ◆	

Design / development / roll out initial tool, or spiral
 Initiate
 Complete
 Key events

FY13 PB R-Docs

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>	PROJECT 643479: <i>Advanced Sensor Exploitation</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Initiated Smart Target Folders (STF)	1	2011	4	2017
Field STF Spiral 1.0	2	2012	2	2012
Field STF Spiral 1.1	2	2014	2	2014
Field STF Spiral 1.2	4	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>				PROJECT 643480: <i>Automated Imagery Exploitation</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
643480: <i>Automated Imagery Exploitation</i>	0.904	0.919	2.452	-	2.452	1.575	1.206	1.006	2.031	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project demonstrates and validates the capability to more accurately and quickly interpret digital imagery and video by developing/evaluating computer-assisted techniques to manipulate and overlay imagery, cartographic data, signals intelligence (SIGINT), and on-line intelligence data. The result of this effort will be more precise target locations and identifications, precise target reference scenes, and more accurate damage assessments for the operator; all developed for easy supportability on low-cost, commercially-available computer workstations. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Advanced Component Development & Prototypes (ACD&P), Budget Activity 4, because it demonstrates and validates advanced technology which enhances information / intelligence systems' capabilities and techniques.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Persistent Surveillance</p> <p>Description: Integrates emerging technologies to seamlessly mesh and optimize various ISR sources to achieve persistent surveillance over the battlefield.</p> <p>FY 2011 Accomplishments: Fielded Spiral 2.0 and initiated Spiral 3.0 development</p> <p>FY 2012 Plans: Continue Spiral 3.0 development</p> <p>FY 2013 Plans: Will field Spiral 3.0</p>	0.230	0.111	0.750
<p>Title: Digital Library Input Processing System (DLIPS)</p> <p>Description: Updates current DLIPS configuration (Text-to-Text translation only) to process foreign language audio or video input into English in support of open-source analysts.</p> <p>FY 2011 Accomplishments:</p>	0.074	0.111	0.900

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>	PROJECT 643480: <i>Automated Imagery Exploitation</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Fielded Spiral 1.0 and initiated Spiral 2.0 development FY 2012 Plans: Continue Spiral 2 development FY 2013 Plans: Will field Spiral 2.0 will initiate Spiral 3.0 development				
Title: Emitter Location Systems Modeling (ELSM) Description: Initiates enhancement of modeling capability of next generation US, Allied, and adversary RF emitters on the battlefield to allow for enhanced EW performance and vulnerability assessments. FY 2011 Accomplishments: Initiated development of Spiral 1.0 capability FY 2012 Plans: Continue Spiral 1.0 development FY 2013 Plans: Will field spiral 1.0 capability and will initiate development of spiral 2.0 capability		0.300	0.397	0.502
Title: Rapid Electronic Attack Assessment For Protection, Exploitation, and Reprogramming (REAPER) Description: Initiates capability to provide rapid assessment of adversary Electronic Attack (EA) signals, which supports pilot training and the development of EA protection and countermeasures systems. FY 2011 Accomplishments: Initiated development of Spiral 1.0 capability FY 2012 Plans: Continue development of Spiral 1.0 capability FY 2013 Plans: Will field Spiral 1.0 capability and will initiate development of Spiral 2.0 capability		0.300	0.300	0.300
Accomplishments/Planned Programs Subtotals		0.904	0.919	2.452

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>	PROJECT 643480: <i>Automated Imagery Exploitation</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>
• 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

D. Acquisition Strategy

Requirements for new computer assisted techniques for interpretation of digital imagery and video are gathered and prioritized by the Air Force Intelligence, Surveillance, and Reconnaissance Agency (AFISRA), formerly the Air Intelligence Agency. Development of new / improved capabilities to meet these requirements is managed by AF Research Laboratory (Rome Research Site). The prototype products (usually software), once evaluated by the users, are fielded in incremental capability spirals. All major contracts within this project are awarded after full and open competition.

E. Performance Metrics

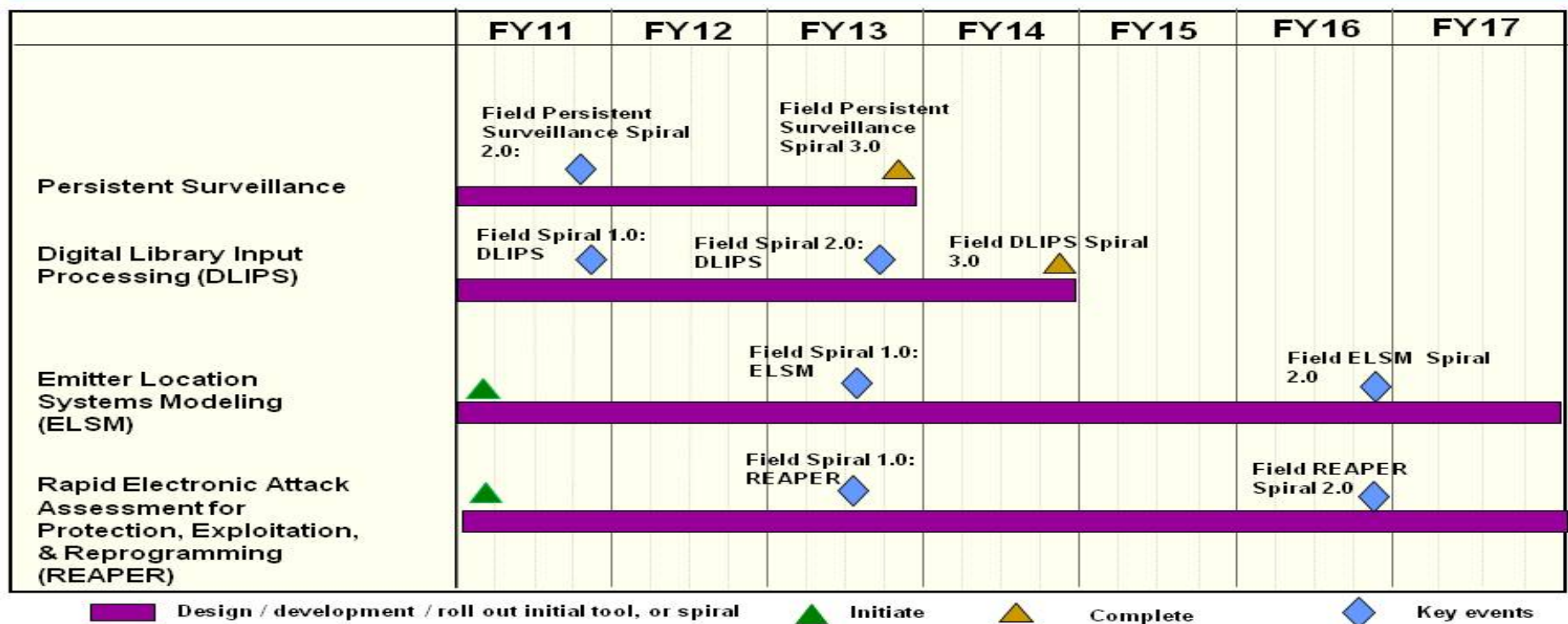
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>	PROJECT 643480: <i>Automated Imagery Exploitation</i>



Intelligence Advanced Development Program – Advanced Automated Imagery Exploitation Schedule (BPAC 643480)



FY13 PB R-Docs

Depicted by installation/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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>	PROJECT 643480: <i>Automated Imagery Exploitation</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Persistent Surveillance	1	2011	4	2013
Digital Library Input Processing System (DLIPS)	1	2011	4	2014
Emitter Location Systems Modeling (ELSM)	1	2011	4	2017
Rapid Electronic Attack Assessment for Protection, Exploitation, and Reprogramming (REAPER)	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>	PROJECT 643481: <i>Knowledge Based Tech For Intelligence</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
643481: <i>Knowledge Based Tech For Intelligence</i>	1.564	1.596	0.542	-	0.542	0.790	1.210	1.768	3.563	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project improves Global Awareness, Dynamic Planning, and Execution by providing knowledge bases and inference engines to exploit collected data for nine major commands and Air Force (AF) intelligence organizations. The development of the analytical aids is based on artificial intelligence techniques. The increased timeliness, efficiency and effectiveness derived will provide enhanced warning time and accuracy, allowing national/military authorities a greater range of options to avert, diminish or control a crisis. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Advanced Component Development & Prototypes (ACD&P), Budget Activity 4, because it demonstrates and validates advanced technology which enhances information/intelligence systems' capabilities and techniques.

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

	FY 2011	FY 2012	FY 2013
Title: Dynamic ISR for Non-Traditional Adversarial Methods	1.564	1.596	0.542
Description: Continues integration of emerging technologies to dynamically allocate, monitor, and task all ISR assets to combat non-traditional warfare methods within an urban environment			
FY 2011 Accomplishments: Fielded Spiral 1.0 capability and initiated Spiral 2.0 capability			
FY 2012 Plans: Continue development of Spiral 2.0 capability			
FY 2013 Plans: Will field spiral 2.0 capability and will initiate spiral 3.0 capability			
Accomplishments/Planned Programs Subtotals	1.564	1.596	0.542

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

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>	PROJECT 643481: <i>Knowledge Based Tech For Intelligence</i>

D. Acquisition Strategy

Requirements for new / improved analytical aids to exploit collected intelligence data are gathered and prioritized by the Air Force Intelligence, Surveillance and Reconnaissance Agency (AFISRA), formerly the Air Intelligence Agency. Development of new / improved capabilities to meet the requirements is managed by AF Research Laboratory (Rome Research Site). Prototype products (usually software), once evaluated by the users, are fielded in incremental capability spirals. All major contracts within this project 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>	PROJECT 643481: <i>Knowledge Based Tech For Intelligence</i>



Intelligence Advanced Development Program – Knowledge Based Tech for Intelligence Schedule (BPAC 643481)

	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Dynamic ISR for Non-Traditional Adversarial Methods (DINT-AM)	Field DINT-AM Spiral V1.0 ◆	Field DINT-AM Spiral V2.0 ◆	Field DINT-AM Spiral V3.0 ◆			Field DINT-AM Spiral V4.0 ◆	

Design / development / roll out initial tool, or spiral
 Initiate
 Complete
 Key events

FY13 PB R-Docs

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>	PROJECT 643481: <i>Knowledge Based Tech For Intelligence</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Dynamic ISR for Non-Traditional Adversarial Methods	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>				PROJECT 643482: <i>Science & Tech Intelligence Methodology</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
643482: <i>Science & Tech Intelligence Methodology</i>	0.718	0.725	0.471	-	0.471	1.066	1.387	0.882	1.557	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The project demonstrates and validates intelligence methodologies and techniques for operational employment of simulation models in support of Air Force Intelligence, Surveillance, and Reconnaissance Agency (AFISRA), formerly the Air Intelligence Agency, requirements. The methods and techniques will help AFISRA improve their analysis of current and future foreign weapon systems, and prevent technological surprises to our warfighters with regard to the capabilities of these systems. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Advanced Component Development & Prototypes (ACD&P), Budget Activity 4, because it demonstrates and validates advanced technology which enhances information / intelligence systems' capabilities and techniques.

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

	FY 2011	FY 2012	FY 2013
Title: Real Time Intelligence Situational Awareness	0.718	0.725	0.471
Description: Continues effort to provide machine "learning" capability, which simulates a real-time interactive environment that results in an heightened sense of intel awareness.			
FY 2011 Accomplishments: Fielded Spiral 1.0 and initiated development of Spiral 2.0 capability			
FY 2012 Plans: Continue development of spiral 2.0 capability			
FY 2013 Plans: Will field spiral 2.0 capability and will initiate development of spiral 3.0 capability			
Accomplishments/Planned Programs Subtotals			0.471

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

			FY 2013	FY 2013	FY 2013					Cost To	
Line Item	FY 2011	FY 2012	Base	OCO	Total	FY 2014	FY 2015	FY 2016	FY 2017	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

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>	PROJECT 643482: <i>Science & Tech Intelligence Methodology</i>

D. Acquisition Strategy

Requirements for new / improved techniques for operational employment of simulation models are gathered and prioritized by the Air Force Intelligence, Surveillance, and Reconnaissance Agency (AFISRA), formerly the Air Intelligence Agency. Development of the new / improved capabilities to meet the requirements is managed by AF Research Laboratory (Rome Research Site). Prototype products (usually software), once evaluated by the users, are fielded in incremental capability spirals. All major contracts within this project 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: *Research, Development, Test & Evaluation, Air Force*
 BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE

PE 0603260F: *Intelligence Advanced Development*

PROJECT

643482: *Science & Tech Intelligence Methodology*



Intelligence Advanced Development Program –Science & Tech Intelligence Methodology Schedule (BPAC 643482)

	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Real Time Intelligence Situational Awareness (RTISA)	Field RTISA Spiral V1.0		Field RTISA Spiral V2.0			Field RTISA Spiral 3.0	
	◆		◆			◆	

Design / development / roll out initial tool, or spiral
 Initiate
 Complete
 Key events

FY13 PB R-Docs

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603260F: <i>Intelligence Advanced Development</i>	PROJECT 643482: <i>Science & Tech Intelligence Methodology</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Real Time Intelligence Situational Awareness	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603287F: <i>Physical Security Equipment</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	0.967	3.586	3.704	-	3.704	3.874	3.975	4.084	4.197	Continuing	Continuing
645121: <i>Physical Security Equipment</i>	0.967	3.586	3.704	-	3.704	3.874	3.975	4.084	4.197	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 is a budget activity level 4 based on the concept/technology development activities ongoing within the program. The purpose of this program is to develop, demonstrate, and test Physical Security Equipment (PSE) systems, to include Force Protection. This program supports the protection of tactical, fixed, and nuclear weapons systems, AF personnel and AF facilities. The PSE program is organized to provide PSE RDT&E for Air Force specific needs but as a complement to and in conjunction with the PSE RDT&E programs funded by the DOD Physical Security Equipment Action Group (PSEAG). As such this program will develop, demonstrate, and test PSE in the same manner and to the same standards and architecture as PSEAG funded projects to ensure interoperability with PSEAG developed PSE. In development of PSE, this RDT&E program includes RF frequency and communication security (cyber) requirements. This Program Element also includes funding for Force Protection Commercial-Off-The-Shelf (FP COTS) evaluation and testing. The FP COTS testing applies to all available technologies, which are considered effective for AF physical security use. This program supports the maintenance and test support at Site C-3 and the Cold Weather Test Site (CWTS), as annotated in DoD Directive 3200.11, listing the 46TW as a Major Range and Test facility, conducting developmental and operational testing as the primary mission.

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	3.576	3.586	3.749	-	3.749
Current President's Budget	0.967	3.586	3.704	-	3.704
Total Adjustments	-2.609	-	-0.045	-	-0.045
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.028	-			
• Other Adjustments	-2.581	-	-0.045	-	-0.045

Change Summary Explanation

FY11 Congressional General Reduction of 0.005M in Other Adjustment row.

FY11 Congressional Directed Reduction of 2.576M in Other Adjustment 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603287F: <i>Physical Security Equipment</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
<p>Title: PHYSICAL SECURITY EQUIPMENT</p> <p>Description: FORCE PROTECTION/TACTICAL SECURITY EQUIPMENT - Develop, demonstrate, and test Physical Security Equipment (PSE) systems, to include Force Protection.</p> <p>FY 2011 Accomplishments: Refine, research, and test technology for automated entry control systems. - Continue TASS P3I efforts including improvements to the annunciator. - Continue to manage, develop, evaluate, and test Delay/Denial products. - Continue to manage sensor and assessment product developments and tests. - Continue to research technological advances at DoD, DoE, University Labs, DARPA, within industry, etc., with PSE utility. - Continue to prepare operational systems improvement plans; develop technology roadmap, update system architecture. - Continue to test, develop, and integrate equipment to improve security and access to facilities. - Develop a Security Forces Management Information System (SFMIS)module. - Conduct System Effectiveness Assessment (SEA) of the Nuclear Environment. - Continue Integrated Defense Command and Control Common Operating Picture (IDC2COP). - Develop Physical Security Alarm Systems. - Force Protection Commercial Off The Shelf (COTS) evaluation and testing. - Develop internal denial options for the Nuclear Storage environment.</p> <p>FY 2012 Plans: Refine, research, and test technology for automated entry control systems. - Continue TASS P3I efforts including improvements to the annunciator. - Continue to manage, develop, evaluate, and test Delay/Denial products. - Continue to manage sensor and assessment product developments and tests. - Continue to research technological advances at DoD, DoE, University Labs, DARPA, within industry, etc., with PSE utility. - Continue to prepare operational systems improvement plans; develop technology roadmap, update system architecture. - Continue to test, develop, and integrate equipment to improve security and access to facilities. - Develop a Security Forces Management Information System (SFMIS)module. - Conduct System Effectiveness Assessment (SEA) of the Nuclear Environment. - Continue Integrated Defense Command and Control Common Operating Picture (IDC2COP). - Develop Physical Security Alarm Systems. - Force Protection Commercial Off The Shelf (COTS) evaluation and testing.</p>	0.967	3.586	3.704

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603287F: <i>Physical Security Equipment</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> - Develop internal delay, denial, and detection options for the Nuclear Storage environment. - Develop external delay, denial, and detection options for the Nuclear Storage environment. - Supports the maintenance and test support at Site C-3 and the Cold Weather Test Site (CWTS), as annotated in DoD Directive 3200.11, listing the 46TW as a Major Range and Test facility, conducting developmental and operational testing as the primary mission. <p><i>FY 2013 Plans:</i> Refine, research, and test technology for automated entry control systems.</p> <ul style="list-style-type: none"> - Continue TASS P3I efforts including improvements to the annunciator. - Continue to manage, develop, evaluate, and test Delay/Denial products. - Continue to manage sensor and assessment product developments and tests. - Continue to research technological advances at DoD, DoE, University Labs, DARPA, within industry, etc., with PSE utility. - Continue to prepare operational systems improvement plans; develop technology roadmap, update system architecture. - Continue to test, develop, and integrate equipment to improve security and access to facilities. - Develop a Security Forces Management Information System (SFMIS)module - Conduct System Effectiveness Assessment (SEA) of the Nuclear Environment - Continue Integrated Defense Command and Control Common Operating Picture (IDC2COP). - Develop Physical Security Alarm Systems. - Force Protection Commercial Off The Shelf (COTS) evaluation and testing. - Develop internal delay, denial, and detection options for the Nuclear Storage environment. - Develop external delay, denial, and detection options for the Nuclear Storage environment. - Supports the maintenance and test support at Site C-3 and the Cold Weather Test Site (CWTS), as annotated in DoD Directive 3200.11, listing the 46TW as a Major Range and Test facility, conducting developmental and operational testing as the primary mission. 			
Accomplishments/Planned Programs Subtotals	0.967	3.586	3.704

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	Total Cost
			Base	OCO	Total					Complete	
• 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	0.000

E. Acquisition Strategy
Not Applicable

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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 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE

PE 0603287F: *Physical Security Equipment*

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 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0603287F: Physical Security Equipment

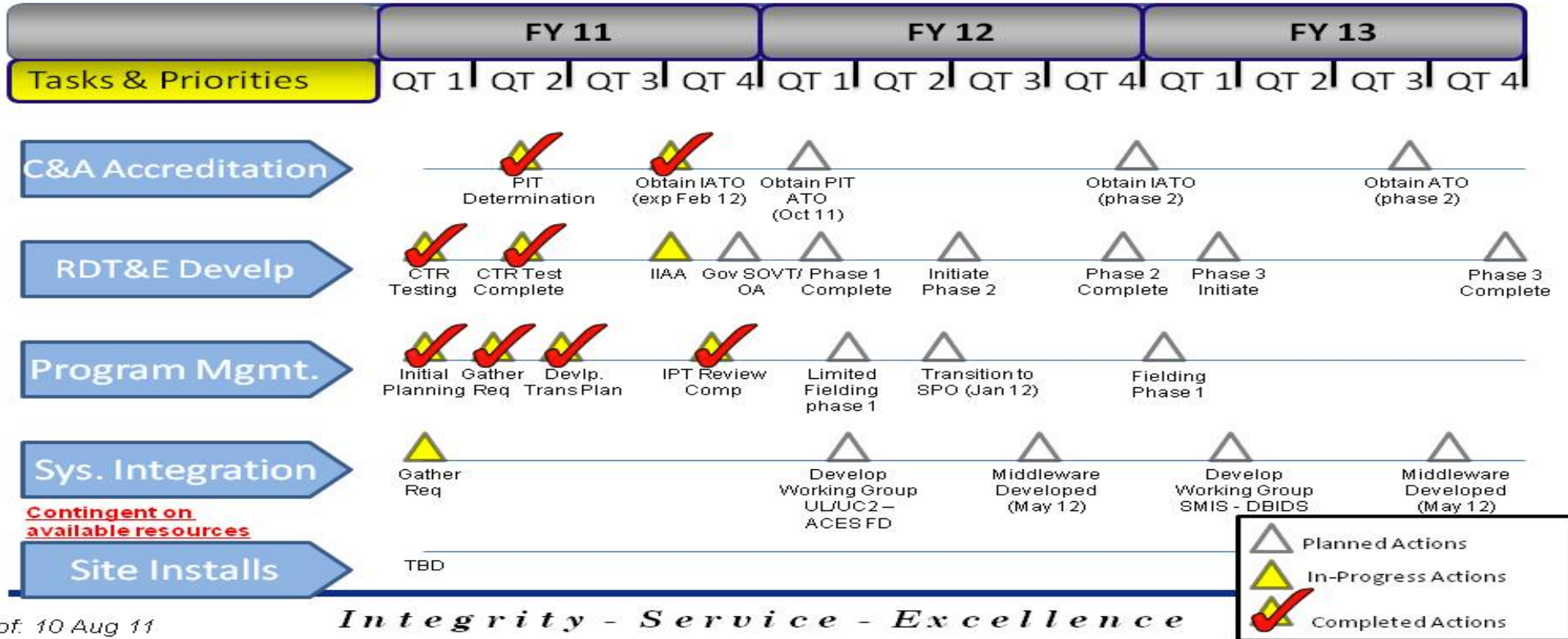
PROJECT

645121: Physical Security Equipment



U.S. AIR FORCE

IDC2COP – Milestones (FY)



As of: 10 Aug 11

Integrity - Service - Excellence

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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 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0603287F: Physical Security Equipment

PROJECT

645121: Physical Security Equipment



Plan of Action & Milestones (COTS)



	FY 11	FY 12	FY 13	FY 14
Wide Area Detection		RFI (Yellow Triangle Up), Test Start (Blue Triangle Up)	Test Finish (Orange Triangle Down), FPS2 List (Blue Triangle Up)	
Interior Video Motion Detection	RFI (Green Triangle Up)	Test Start (Blue Triangle Up), Test Finish (Orange Triangle Down)	FPS2 List (Blue Triangle Up)	
Video Management System	RFI (FY 10) (Green Triangle Up)	Test Start (Blue Triangle Up), Test Finish (Orange Triangle Down)	FPS2 List (Blue Triangle Up)	
Fence Sensor CWT	RFI (FY 10) (Green Triangle Up)	Test Start (Blue Triangle Up), FPS2 List (Blue Triangle Up)		
Predator Elite Upgrade		Equipment Install (Green Triangle Up), Test Start (Blue Triangle Up), Test Finish (Orange Triangle Down)	FPS2 List (Blue Triangle Up)	
Interior Ceiling Sensor		RFI (Yellow Triangle Up), Test Start (Blue Triangle Up), Test Finish (Orange Triangle Down)	FPS2 List (Blue Triangle Up)	
WSTI & LRTI Refresh		RFI (Yellow Triangle Up), Test Start (Blue Triangle Up), Test Finish (Orange Triangle Down)	FPS2 List (Blue Triangle Up)	
Door Sensor/Balance Mag. Switch			RFI (Yellow Triangle Up), Test Start (Blue Triangle Up), Test Finish (Orange Triangle Down)	FPS2 List (Blue Triangle Up)
Break Beam/Active Infrared Sensor	FY13 & FY14 projects TBD based on identified capability gaps, life cycle management, etc.		RFI (Yellow Triangle Up), Test Start (Blue Triangle Up), Test Finish (Orange Triangle Down)	FPS2 List (Blue Triangle Up)
Passport Verification			RFI (Yellow Triangle Up), Test Start (Blue Triangle Up), Test Finish (Orange Triangle Down)	FPS2 List (Blue Triangle Up)

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603287F: <i>Physical Security Equipment</i>	PROJECT 645121: <i>Physical Security Equipment</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Continue TASS P3I efforts including the annunciator	1	2012	4	2014
Conduct a Leap Ahead assessment of current PSE technology	1	2011	4	2012
COTS Testing	1	2011	4	2014
Develop SFMIS Module	1	2012	4	2013
IDC2COP Integration	1	2011	4	2014
Develop Physical Security Alarm Systems	1	2011	4	2014
Conduct System Effectiveness Assessment of Nuclear Environment	1	2012	4	2013
Maintain C-3 and Cold Weather Test Site (RDT&E Testing Facility)	1	2011	4	2014
Develop Internal and External Delay/Denial/Detection options for Nuclear Storage environment	1	2012	4	2014

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				PE 0603430F: <i>Advanced (EHF MILSATCOM (Space))</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	385.033	397.446	229.171	-	229.171	153.857	139.034	120.365	100.087	Continuing	Continuing
644050: <i>Advanced MILSATCOM</i>	385.033	276.675	175.578	-	175.578	64.357	38.167	-	-	Continuing	Continuing
64A030: <i>Evolved AEHF MILSATCOM</i>	-	120.771	53.593	-	53.593	89.500	100.867	120.365	100.087	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

Develop and acquire Advanced Extremely High Frequency (AEHF) Military Satellite Communications (MILSATCOM) satellites, mission control segment and cryptography for survivable, anti-jam, worldwide, secure communications for the strategic and tactical warfighters. AEHF satellites will replenish the existing EHF system (Milstar) providing much higher capacity and data rate (5x increase over Milstar II) capabilities. AEHF is a cooperative program that includes International Partners (Canada, the United Kingdom, and the Kingdom of the Netherlands).

Space Vehicle-1 (SV-1) launched on 14 August 2010. SV-1 experienced a propulsion anomaly and was raised to its geostationary orbit using alternative orbit raising techniques. The original plan was to begin SV-1 on-orbit checkout in FY11, but in order to conserve fuel SV-1 arrived at its on-orbit checkout location on 24 October 2011. SV-2 has an April 2012 projected launch.

With SV-1 launched and SV-2 scheduled to launch in April 2012, the AEHF program has nearly completed its development phase and is now addressing obsolescence, production continuity, supplier stability and industrial base issues. Future AEHF satellites will be procured using the Department of Defense (DoD) Efficient Space Procurement (ESP) concept, formerly known as Evolutionary Acquisition for Space Efficiency (EASE). The ESP concept is a procurement approach which seeks stable production and efficient sub-contractor product management through the block buy of two space vehicles at one time (please see Advanced EHF MILSATCOM P-40 Exhibit).

In addition, the ESP concept includes use of RDT&E funding for a MILSATCOM Space Modernization Initiative (SMI), formerly known as the Capability and Affordability Insertion Program (CAIP), to fund engineering activities to reduce future production costs through manufacturing and producibility enhancements, improve capabilities through insertion of new technologies, and replace obsolete parts, crypto and materials. The SMI efforts will provide opportunities for competition to develop potential technology upgrades at the component and system level for future satellites of the current or any follow-on system. SMI efforts will include obsolescence management and mitigation efforts, technology maturation, qualification of new components, subsystem and component prototyping, architecture and system concept studies (to include hosted payloads), and pathfinder efforts to address MILSATCOM capability gaps identified in the Joint Space Communications Layer (JSCL) Initial Capabilities Document (ICD) and the forthcoming "Resilient Basis for SATCOM in Joint Operations" study.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space))</i>
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The FY13 request funds efforts such as SV-2 on-orbit test & operations support, incremental Mission Control Segment (MCS) development including ground mobile command and control, test/fielding and support, and studies/analyses as required. The FY13 request funds Interim Contractor Support (ICS). As SV-2 completes on-orbit test and incrementally developed MCS becomes operational, ICS sustains the AEHF system until Initial Operational Capability (IOC) declaration, projected late FY14. Additionally, the FY13 request funds preliminary design for the transition of the AEHF Key Management Architecture from the Electronic Key Management System (EKMS) to the Key Management Infrastructure (KMI). The EKMS and KMI are cryptography key management systems that enable transmission and communications security for the Protected SATCOM enterprise. The FY13 request also funds continued parts obsolescence studies and redesign, and risk reduction on MILSATCOM technologies.

This program is in Budget Activity 4, Advanced Component Development and Prototypes, since it funds Advanced EHF technology validation and modeling.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	351.817	421.687	392.884	-	392.884
Current President's Budget	385.033	397.446	229.171	-	229.171
Total Adjustments	33.216	-24.241	-163.713	-	-163.713
• Congressional General Reductions	-	-4.241			
• Congressional Directed Reductions	-	-20.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-5.625	-			
• Other Adjustments	38.841	-	-163.713	-	-163.713

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

Project: 644050: *Advanced MILSATCOM*

Congressional Add: *AEHF Capabilities Insertion Program (CIP)*

Congressional Add Subtotals for Project: 644050

Congressional Add Totals for all Projects

	FY 2011	FY 2012
	39.700	-
	39.700	-
	39.700	-

Change Summary Explanation

FY11: Other Adjustment row: -\$4.159M Congressional General Reductions, +\$43.000M Congressional Add for Capability Insertion Program

FY13: Other Adjustment row: -\$180.213M for reallocation of funding to higher Department priorities; +\$1.5M to integrate operationally responsive space lessons learned; +\$15.0M for preliminary design for the AEHF crypto transition

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space))</i>	PROJECT 644050: <i>Advanced MILSATCOM</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
644050: <i>Advanced MILSATCOM</i>	385.033	276.675	175.578	-	175.578	64.357	38.167	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Develop and acquire Advanced Extremely High Frequency (AEHF) Military Satellite Communications (MILSATCOM) satellites, mission control segment and cryptography for survivable, anti-jam, worldwide, secure communications for the strategic and tactical warfighters. AEHF satellites will replenish the existing EHF system (Milstar) providing much higher capacity and data rate (5x increase over Milstar II) capabilities.

AEHF is a cooperative program that includes International Partners (Canada, the United Kingdom, and the Kingdom of the Netherlands).

Space Vehicle-1 (SV-1) launched on 14 August 2010. SV-1 experienced a propulsion anomaly and was raised to its geostationary orbit using alternative orbit raising techniques. SV-1 reached its on-orbit checkout location on 24 October 2011. SV-2 has an April 2012 launch availability.

The FY13 request funds efforts such as SV-2 on-orbit test & operations support, incremental Mission Control Segment (MCS) development/sustainment including ground mobile command and control, test/fielding and support, and studies/analyses as required. Also, the FY13 request funds Interim Contractor Support (ICS). As SV-1-2 complete on-orbit test and incrementally developed MCS becomes operational, ICS sustains the AEHF system until Initial Operational Capability (IOC) declaration, projected lated FY14. Additionally, the FY13 request funds preliminary design for the transition of the AEHF Key Management Architecture from the Electronic Key Management System (EKMS) to the Key Management Infrastructure (KMI). The EKMS and KMI are cryptography key management systems that enable transmission and communications security for the Protected SATCOM enterprise.

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

	FY 2011	FY 2012	FY 2013
Title: AEHF SVs 1-2, MCS	345.333	276.675	160.578
Description: Develop and acquire AEHF MILSATCOM satellites, mission control segment, and cryptography			
FY 2011 Accomplishments: In FY 2011, continued SV-1 orbit raising and maintained SV-2 in environmentally-controlled storage. Delivered MCS Increment 5 and completed MCS Increment 7. Conducted Interim Contractor Support, continued program office support and related activities, continued technology needs forecasting, and obsolescence studies.			
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space)</i>	PROJECT 644050: <i>Advanced MILSATCOM</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
In FY 2012, initiate SV-1 on-orbit test and operations. Complete SV-2 launch readiness, launch, and initiate on-orbit test/operations. Deliver MCS Increment 7. Conduct Interim Contractor Support, continue program office support and related activities, and conduct studies/analyses, as required. FY 2013 Plans: In FY 2013, continue SV-1 operations and SV-2 on-orbit test/operations. Conduct Interim Contractor Support for satellites and Mission Control Segment, continue program office support and related activities, and conduct studies/analyses, as required.				
Title: AEHF Key Management Infrastructure (KMI) transition Description: Transition of the AEHF Key Management Architecture from Electronic Key Management System (EKMS) to KMI FY 2011 Accomplishments: Not applicable. FY 2012 Plans: Not applicable. FY 2013 Plans: Funds preliminary design for transition of AEHF Crypto Key Management Architecture (KMA) from Electronic Key Management System to Key Management Infrastructure.		-	-	15.000
Accomplishments/Planned Programs Subtotals		345.333	276.675	175.578
		FY 2011	FY 2012	
Congressional Add: AEHF Capabilities Insertion Program (CIP) FY 2011 Accomplishments: In June 2011, awarded the AEHF CIP Phase B extension to continue architecture development and risk reduction efforts for AEHF CIP 1a. AEHF CIP 1a is a software upgrade to increase the number of users that AEHF can support and increase data rates to disadvantaged terminals and improves operational flexibility through coverage areas and modes of operation that support downlink frequency reuse. Analyze CIP 1a payload/Mission Control Segment (MCS) architecture, refine 1a system changes with MCS and terminal segments, and develop a test and evaluation infrastructure.		39.700	-	
Congressional Adds Subtotals		39.700	-	

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space))</i>	PROJECT 644050: <i>Advanced MILSATCOM</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>
• P-15: <i>MPAF, PE 0303604F, Advanced EHF MILSATCOM</i>	256.863	551.458	557.205	0.000	557.205	543.036	487.802	698.306	1,039.230	Continuing	Continuing
• R--39: <i>RDT&E AF, PE 0603854F, Wideband Global SATCOM (Space), Project #644870, CCS-C</i>	18.174	12.692	12.027	0.000	12.027	13.948	16.918	17.371	18.327	Continuing	Continuing
• R-180: <i>RDT&E AF, PE 0303601F, MILSATCOM Terminals</i>	298.736	236.581	107.237	0.000	107.237	157.787	58.209	8.202	8.310	Continuing	Continuing

D. Acquisition Strategy

The Advanced MILSATCOM, also known as Advanced EHF (AEHF), program is a sole source acquisition to a contractor team comprised of Lockheed Martin (prime/integrator) and Northrop-Grumman (provider of the satellite payload). This team will perform the Advanced Component Development and Prototypes (ACD&P) and Systems Development and Demonstration (SDD) of two RDT&E-funded satellites and associated mission command and control ground capabilities under Cost Plus Award Fee line items on the contract. AEHF will incorporate lessons learned and improvements from Milstar and commercial SATCOM practices into the next generation EHF secure, anti-jam military communications satellite system.

E. Performance Metrics

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

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space))</i>	PROJECT 644050: <i>Advanced MILSATCOM</i>
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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	
Cryptographic Development	MIPR	NSA:Camden, NJ	252.730	-		-		-		-	0.000	252.730	252.730
Crypto Interim Contractor Support	MIPR	CPSG:San Antonio, TX	9.713	11.367	Mar 2012	10.942	Mar 2013	-		10.942	3.724	35.746	0.000
AEHF Key Management Architecture transition	Various	Various:Various,	-	-		15.000	Dec 2012	-		15.000	Continuing	Continuing	0.000
Terminals Engineering	C/CPFF	JTEO:San Diego, CA	15.491	-		-		-		-	0.000	15.491	15.491
MILSATCOM Technology Validation	SS/CPAF	MIT/LL:Lexington, MA	21.538	-		-		-		-	0.000	21.538	21.538
AEHF Capabilities Insertion Program	Various	Various:Various,	39.700	-		-		-		-	0.000	39.700	0.000
Technical Support	SS/CPAF	MITRE:Bedford, MA	0.779	-		-		-		-	0.000	0.779	0.779
Processing Subsystem Engineering Model	Various	Hughes:El Segundo, CA	67.175	-		-		-		-	0.000	67.175	67.175
Processing Subsystem Engineering Model (2)	Various	TRW:Redondo Beach, CA	62.083	-		-		-		-	0.000	62.083	62.083
Technical Projects	Various	Various:Various,	66.659	-		-		-		-	0.000	66.659	66.659
Pre-EMD	Various	Lockheed Martin:Sunnyvale, CA	225.011	-		-		-		-	0.000	225.011	225.011
SDD	Various	Lockheed Martin:Sunnyvale, CA	4,849.777	129.233	Dec 2011	-		-		-	0.000	4,979.010	4,979.010
AEHF Interim Contractor Support	SS/CPIF	Lockheed Martin:Sunnyvale, CA	143.997	73.815	Dec 2011	103.000	Dec 2012	-		103.000	50.200	371.012	0.000
GFP	Various	Various:Various,	35.856	27.165	Dec 2011	22.604	Dec 2012	-		22.604	33.000	118.625	0.000
Radiation Hardened parts developers	Various	Various:Various	117.480	-		-		-		-	0.000	117.480	0.000
Subtotal			5,907.989	241.580		151.546		-		151.546			5,690.476

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space))</i>	PROJECT 644050: <i>Advanced MILSATCOM</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
Various	Various	Various:Various	123.696	-		-		-		-	0.000	123.696	0.000
AEHF FFRDC (PMA)	Various	Various:Various,	118.072	13.494	Dec 2011	-		-		-	0.000	131.566	146.066
AEHF Program Office Support (PMA)	Various	Various:Various,	137.379	16.763	Dec 2011	-		-		-	0.000	154.142	170.307
AEHF Systems Engineering & Integration	C/TBD	TBD:TBD,	-	-		0.100	Dec 2012	-		0.100	0.200	0.300	0.000
Advanced Concepts Directorate technology needs forecasting FFRDC (PMA)	Various	Various:Various,	9.698	-		-		-		-	0.000	9.698	0.000
Advanced Concepts Directorate technology needs forecasting Program Office Support (PMA)	Various	Various:Various,	13.727	-		-		-		-	0.000	13.727	0.000
Subtotal			402.572	30.257		0.100		-		0.100	0.200	433.129	316.373

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
Development Test and Evaluation support	Various	Various:Various,	22.814	4.838	Dec 2011	2.567	Dec 2012	-		2.567	0.300	30.519	30.519
Subtotal			22.814	4.838		2.567		-		2.567	0.300	30.519	30.519

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
AEHF FFRDC (PMA)	Various	Various:Various,	-	-		6.400	Dec 2012	-		6.400	8.100	14.500	0.000
AEHF Program Office Support (PMA)	Various	Various:Various,	-	-		10.965	Dec 2012	-		10.965	4.900	15.865	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force	DATE: February 2012
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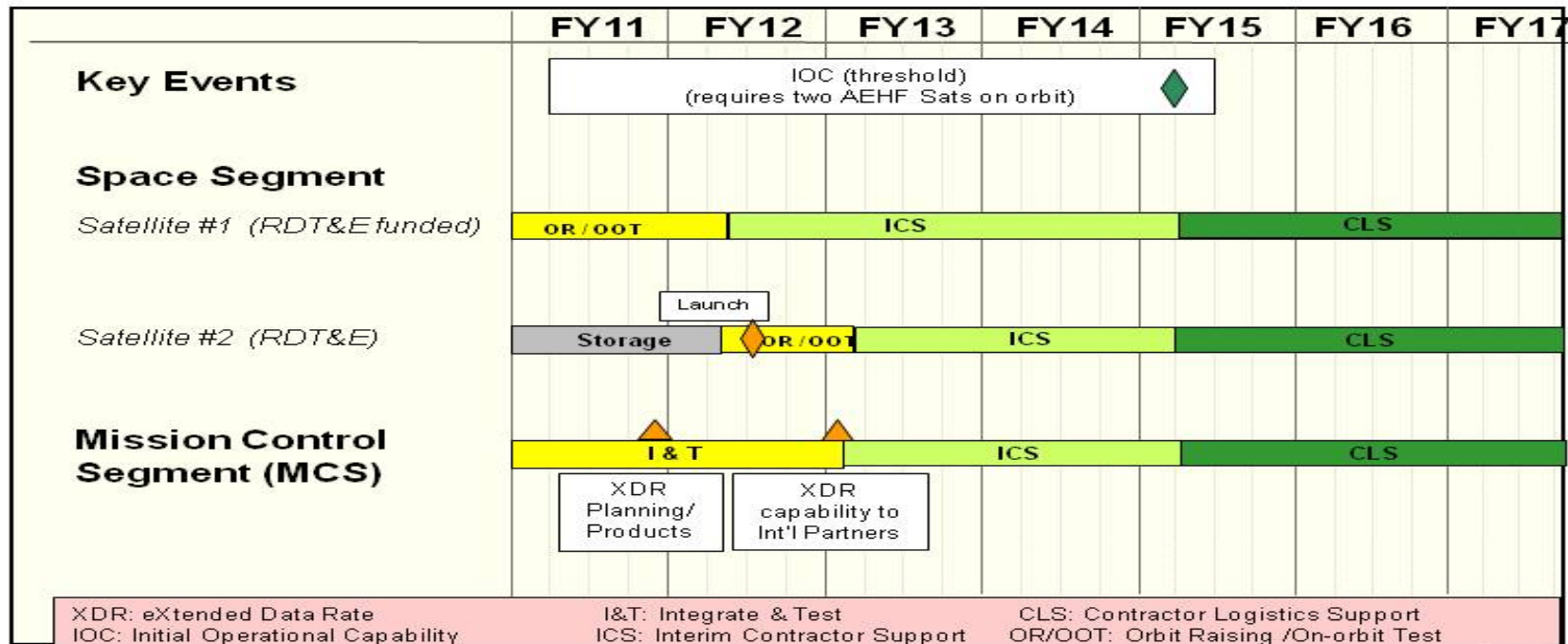
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603430F: Advanced (EHF MILSATCOM (Space)	PROJECT 644050: Advanced MILSATCOM
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Management 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
Business Operating Support Services & Acquisition Mission Support (PMA)	Various	Various:Various,	-	-		4.000	Dec 2012	-		4.000	2.100	6.100	6.100
Subtotal			-	-		21.365		-		21.365	15.100	36.465	6.100
			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			6,333.375	276.675		175.578		-		175.578			6,043.468

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space)</i>	PROJECT 644050: <i>Advanced MILSATCOM</i>



△◇ 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space)</i>	PROJECT 644050: <i>Advanced MILSATCOM</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Field Ground Segment Software Increment 5 (eXtended Data Rate)	4	2011	4	2011
Launch second AEHF satellite	3	2012	3	2012
Field Ground Segment Software Increment 7 (eXtended Data Rate capability to International Partners)	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space)</i>				PROJECT 64A030: <i>Evolved AEHF MILSATCOM</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
64A030: <i>Evolved AEHF MILSATCOM</i>	-	120.771	53.593	-	53.593	89.500	100.867	120.365	100.087	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project funds a MILSATCOM Space Modernization Initiative, (SMI), formerly the Capability and Affordability Insertion Program (CAIP), which includes engineering activities that assess promising new components and systems to confirm their suitability (capable, affordable, and producible) for the MILSATCOM mission across the payload, terminal and network segments. SMI pursues evolutionary or alternative MILSATCOM technologies and concepts to reduce obsolescence risks and improve affordability, resiliency, and responsiveness of replenishment programs, and identifies relevant commercial opportunities for potential hosted payload developments to demonstrate proof of concept for operations and future distributed architecture. In addition, SMI begins rapid acquisition capabilities supporting concept definitions and demos for small protected tactical hosted payloads or commercial-based free-flyer satellites, anti-jam enhanced theater antennas, and increased military Ka-band coverage and capacity.

The FY13 funds efforts such as parts obsolescence studies and redesign, crypto repackaging and risk reduction on MILSATCOM technologies. Additionally, FY13 funds System Engineering and Program Management to include Program Office support such as Federally Funded Research and Development Center (FFRDC) analyses, System Engineering Technical Assistance (SETA) and Systems Engineering and Integration (SE&I) to support Protected Broad Agency Announcements, Resilient Basis Study efforts, Remotely Piloted Aircraft concept definition, radiation-hardened parts productization and qualification, protected MILSATCOM Test Bed development, and affordable Information Assurance approach efforts.

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

	FY 2011	FY 2012	FY 2013
Title: AEHF Crypto & Parts Obsolescence	-	13.800	25.000
Description: AEHF parts obsolescence redesign effort and studies			
FY 2011 Accomplishments: Not applicable.			
FY 2012 Plans: Funds efforts such as parts obsolescence redesign to include SV-6 crypto redevelopment, and a study to assess aspects that affect the longer term stability of the AEHF product line.			
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space)</i>	PROJECT 64A030: <i>Evolved AEHF MILSATCOM</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Continues efforts such as parts obsolescence redesign to include SV-6 crypto redevelopment, and the redesign study to assess aspects that affect the longer term stability of the AEHF product line.				
Title: AEHF Capabilities Insertion Program (CIP) 1a Description: AEHF capacity improvement: Software development/implementation FY 2011 Accomplishments: Not applicable. FY 2012 Plans: Not Applicable. FY 2013 Plans: Release sole source AEHF CIP 1a Request for Proposal and award contract 4QFY13.		-	-	1.738
Title: Radiation Hardened parts Description: Qualification and productization of radiation-hardened components FY 2011 Accomplishments: Not applicable. FY 2012 Plans: Funds qualification and productization of radiation-hardened components for USAF/DOD space programs. FY 2013 Plans: Not applicable.		-	20.000	-
Title: Remotely Piloted Aircraft (RPA) Concept Definition Description: Develop architecture and design concepts to meet the warfighter's RPA communication needs. FY 2011 Accomplishments: Not applicable. FY 2012 Plans: Develop space and ground segment architecture, design concepts and requirements for RPA. Include requirements as a contract option within an ongoing solicitation. FY 2013 Plans:		-	2.700	-

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space)</i>	PROJECT 64A030: <i>Evolved AEHF MILSATCOM</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Not applicable.				
<p>Title: Protected MILSATCOM "Design for Affordability"</p> <p>Description: Perform design for affordability studies, demonstrations, and technology risk reduction on critical technology elements for the space payload, terminals and networking segments, small protected tactical hosted payloads, and anti-jam enhanced theater antennas to significantly reduce the cost of protected SATCOM.</p> <p>FY 2011 Accomplishments: Not applicable.</p> <p>FY 2012 Plans: A Broad Area Announcement (BAA) will be released in February 2012. A local competitive evaluation team will select and award contracts in May 2012 timeframe to various companies that meet the BAA requirements. Efforts will include architecture and system design to include Space, Ground, Terminal, Information Assurance, performance trades, affordability assessments, waveform development, and demonstrations.</p> <p>FY 2013 Plans: Options on selected contracts will be awarded to further continue efforts from FY12 that will increase fidelity of architecture design, demonstrate critical components, and lower the risk on next generation protected MILSATCOM systems.</p>		-	58.672	8.375
<p>Title: Hosted Payload BAA</p> <p>Description: Validate affordable business approaches and reduce risk for commercial/hosted payload alternatives such as commercial-based free-flyer satellites, increased military Ka-band coverage and capacity, and other candidate system designs for hosted payloads on commercial satellites.</p> <p>FY 2011 Accomplishments: Not applicable.</p> <p>FY 2012 Plans: A BAA will be released in March 2012. Responses will be due in 30 days. A local competitive selection evaluation team will select and award contracts of various amounts to different companies that meet the requirements in the BAA. Period of Performance for each of these companies will vary depending on the level of effort.</p> <p>FY 2013 Plans: Not applicable.</p>		-	4.000	-
Title: MILSATCOM Architecture and support		-	21.599	18.480

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space))</i>	PROJECT 64A030: <i>Evolved AEHF MILSATCOM</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Description: Conduct System Engineering and Program Management to include Program Office support such as Federally Funded Research and Development Center (FFRDC) analyses, System Engineering Technical Assistance (SETA), Systems Engineering and Integration (SE&I) and other related activities.</p> <p>FY 2011 Accomplishments: Not applicable.</p> <p>FY 2012 Plans: Funds efforts such as refining the ongoing MILSATCOM architectures, Remote Piloted Aircraft study, and Resilient Basis Study (RBS) products including affordable Information Assurance approaches, supportive terminal payload concepts, and commercial product contributions. Funds program office support and Federally Funded Research and Development Center (FFRDC) support for above efforts.</p> <p>FY 2013 Plans: Funds efforts such as refining the ongoing MILSATCOM architectures including affordable Information Assurance approaches, supportive terminal payload concepts, and commercial product contributions. Funds program office support and Federally Funded Research and Development Center (FFRDC) support for above efforts.</p>			
Accomplishments/Planned Programs Subtotals	-	120.771	53.593

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-49: <i>RDT&E AF, PE 0604436F, Next Generation MILSATCOM Technology</i>	19.898	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	69.689
• P-15: <i>MPAF, PE 0303604F, Advanced EHF MILSATCOM</i>	256.863	551.458	557.205	0.000	557.205	543.036	487.802	698.306	1,039.230	Continuing	Continuing

D. Acquisition Strategy

MILSATCOM SMI will include parts obsolescence redesign and incremental capability upgrades for potential future block buys contracted with current Prime contractor team. Architecture studies, system design for affordability, and risk reduction efforts for next generation capabilities will include full and open competition 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space)</i>	PROJECT 64A030: <i>Evolved AEHF MILSATCOM</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-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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space))</i>	PROJECT 64A030: <i>Evolved AEHF MILSATCOM</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
AEHF Capabilities Insertion Program (CIP) 1a	SS/CPFF	Lockheed Martin:Sunnyvale, CA	-	-		1.738	Jun 2013	-		1.738	Continuing	Continuing	0.000
AEHF Crypto and Parts Obsolescence	Various	Various:Various,	-	13.800	Feb 2012	25.000	Dec 2012	-		25.000	Continuing	Continuing	0.000
Radiation Hardened Parts developers	Various	Various:,	-	20.000	Feb 2012	-		-		-	0.000	20.000	0.000
Remotely Piloted Aircraft Concept Definition	Various	Various:Various,	-	2.700	Feb 2012	-		-		-	0.000	2.700	0.000
Protected MILSATCOM "Design for Affordability"	C/FFP	TBD:TBD,	-	58.672	May 2012	8.375	Dec 2012	-		8.375	Continuing	Continuing	0.000
Hosted Payload Broad Area Announcement studies	C/FFP	TBD:TBD,	-	4.000	May 2012	-		-		-	0.000	4.000	0.000
Subtotal			-	99.172		35.113		-		35.113			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 to support MILSATCOM Architecture studies and Protected MILSATCOM Testbed (PMA)	Various	Various:Various,	-	18.579	Feb 2012	-		-		-	0.000	18.579	0.000
Program Office Support & Other Related Activities (PMA)	Various	Various:Various,	-	3.020	Feb 2012	-		-		-	0.000	3.020	0.000
Subtotal			-	21.599		-		-		-	0.000	21.599	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

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

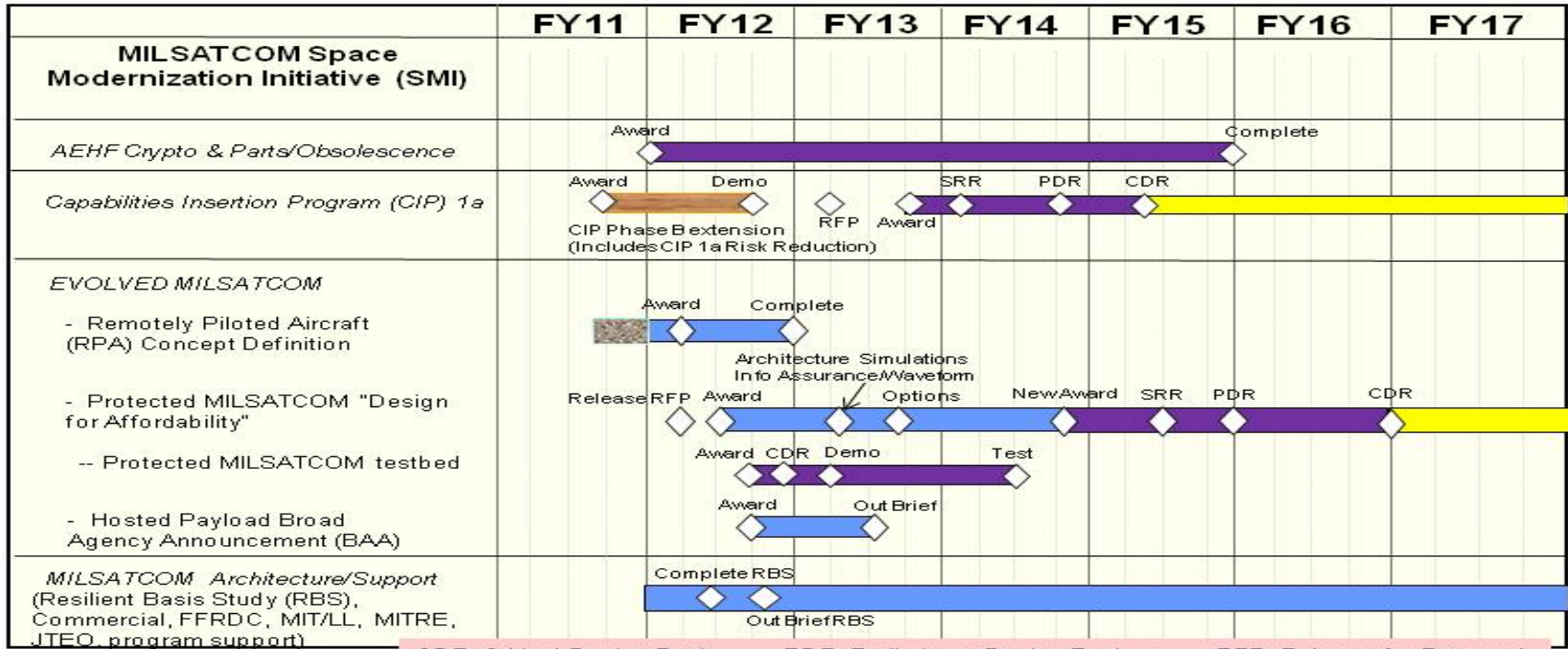
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space)</i>	PROJECT 64A030: <i>Evolved AEHF MILSATCOM</i>
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Management Services (\$ 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	
FFRDC to support MILSATCOM Architecture studies and Protected MILSATCOM Testbed (PMA)	Various	Various:Various,	-	-		12.161	Dec 2012	-		12.161	Continuing	Continuing	0.000
Program Office Support & Other Related Activities (PMA)	Various	Various:Various,	-	-		2.705	Dec 2012	-		2.705	Continuing	Continuing	0.000
Business Operating Support Services & Acquisition Mission Support (PMA)	Various	Various:Various,	-	-		3.614	Dec 2012	-		3.614	Continuing	Continuing	0.000
Subtotal			-	-		18.480		-		18.480			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			-	120.771		53.593		-		53.593			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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space))</i>	PROJECT 64A030: <i>Evolved AEHF MILSATCOM</i>



CDR: Critical Design Review PDR: Preliminary Design Review RFP: Release for Proposal
SRR: System Requirements Review

- Concept activities
- Design / development
- Integration / test
- Funded in BPAC 644050, Advanced MILSATCOM
- Funded in PE 64436F, Next Generation MILSATCOM Technology
- 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603430F: <i>Advanced (EHF MILSATCOM (Space)</i>	PROJECT 64A030: <i>Evolved AEHF MILSATCOM</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Award AEHF CIP Phase B extension contract	3	2011	3	2011
Release Broad Area Announcement (BAA) for Protected MILSATCOM "Design for Affordability"	2	2012	2	2012
Award Hosted Payload BAA	3	2012	3	2012
Award contracts for Protected MILSATCOM "Design for Affordability"	3	2012	3	2012
Resilient Basis for SATCOM in Joint Operations Study Complete	3	2012	3	2012
Award options on selected Protected MILSATCOM "Design for Affordability" contracts	3	2013	4	2013
Award AEHF Capabilities Insertion Program (CIP) 1a contract	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603432F: <i>Polar MILSATCOM (Space)</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	138.051	101.348	120.676	-	120.676	124.805	96.782	73.402	52.244	Continuing	Continuing
644052: <i>Polar Satellite Communications</i>	138.051	101.348	120.676	-	120.676	124.805	96.782	73.402	52.244	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

This program element acquires the Polar Military Satellite Communications (MILSATCOM) system that provides protected communications (anti-jam and low probability of intercept and detection) for users in the north polar region.

Through FY05, Polar Satellite Communications had funded three low data rate (LDR) Milstar packages on three classified host satellites as an expedited, interim solution for protected connectivity requirements in the north polar region (i.e., Interim Polar System (IPS)). Two satellites with hosted packages are required to provide the necessary 24-hour coverage. The third package went into operations in November 2008 to sustain the 24-hour coverage.

In FY06, the DoD began funding the next generation Polar Satellite Communications capability with two more polar packages via the same type host vehicle (i.e., Enhanced Polar System (EPS)). The host spacecraft and the polar communications packages require design modifications to replace obsolete components and take advantage of the more capable Advanced Extremely High Frequency (AEHF) technology including the eXtended Data Rate (XDR) waveform. The EPS Capability Development Document (CDD), Joint Requirements Oversight Council approved in September 2006, is based on a two-package, hosted XDR program with operational availability in CY15 and CY17. The EPS system is intended to be comprised of four segments: Payload, Ground Control, Gateway, and Terminal (acquired by each Service's Terminal Program Office).

In FY11, the EPS CDD was updated to provide a stand-alone ground capability that was no longer fully integrated with AEHF. The restructured program will deliver "IPS-like" capability with the XDR waveform, and a connection to the defense network. An EPS system-level Preliminary Design Review (PDR) will be held 3QFY2013 and a Milestone B review will be held 4QFY2013.

FY13 funds will continue integration of the two EPS packages (payloads) onto the host satellites. Following award of the ground Control and Planning Segment (CAPS) in late FY12, the program office will begin development of the ground CAPS. The program office will conduct a PDR of the ground CAPS. Additionally, the program office will conduct a Critical Design Review (CDR) of the Navy-developed ground Gateway segment.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603432F: <i>Polar MILSATCOM (Space)</i>
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The Polar MILSATCOM program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	164.232	122.991	121.419	-	121.419
Current President's Budget	138.051	101.348	120.676	-	120.676
Total Adjustments	-26.181	-21.643	-0.743	-	-0.743
• Congressional General Reductions	-	-1.643			
• Congressional Directed Reductions	-	-20.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-3.615	-			
• SBIR/STTR Transfer	-20.590	-			
• Other Adjustments	-1.976	-	-0.743	-	-0.743

Change Summary Explanation

FY11: -\$3.615M reprogrammed for higher Department priorities; -\$20.590M SBIR; Other Adjustment Row: -\$1.976M Congressional General Reductions

FY12: -\$1.643M Congressional General Reductions; -\$20M Congressional Directed Reduction due to development schedule delay

FY13: -\$0.743M for reallocation of funding to higher Department priorities

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: EPS</p> <p>Description: Develop and acquire EPS MILSATCOM</p> <p>FY 2011 Accomplishments: In FY2011: Acquired the payload engineering model test bed from the Developer to support intersegment testing and complete integration of both payload #1 and #2 subsystems. Initiated architecture development of the Gateway segment and planned the development of a scaled down ground control segment, known as the Control and Planning Segment (CAPS).</p> <p>FY 2012 Plans: In FY2012: Deliver two payloads to the host and initiate integration of payloads onto host satellites. Conduct the CAPS source selection and award the contract. Continue development of the Gateway segment and conduct the Preliminary Design Review.</p> <p>FY 2013 Plans:</p>	138.051	101.348	120.676

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603432F: <i>Polar MILSATCOM (Space)</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
In FY2013: Will continue integration of the two EPS payloads onto the host satellites. Will conduct the CAPS Preliminary Design Review and will conduct the Gateway segment Critical Design Review			
Accomplishments/Planned Programs Subtotals	138.051	101.348	120.676

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

The Enhanced Polar System (EPS) is the follow-on to the currently operational Interim Polar System (IPS) and is a component of the Extremely High Frequency SATCOM architecture providing secure, protected communications to worldwide users. The EPS acquisition consists of four segments (Payload, Ground Control, Gateway, and Terminal) acquired by separate procurement actions. The EPS payloads will be hosted on a classified satellite and acquired by the organization hosting the EPS payloads. The MILSATCOM System Directorate will procure the Ground Control and Gateway segments. The Terminals which will use EPS will be acquired by each Service's Terminal Program Office.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603432F: <i>Polar MILSATCOM (Space)</i>	PROJECT 644052: <i>Polar Satellite Communications</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
Classified	TBD	TBD:TBD,	299.594	-		-		-		-	0.000	299.594	0.000
EPS Requirement Analyses and Design Trade Studies	Various	Various:Various,	76.187	-		-		-		-	0.000	76.187	0.000
Ground study and Emulator development	SS/CPAF	Johns Hopkins University/Applied Physics Lab:Columbia, MD	11.146	2.911	Dec 2011	3.000	Dec 2012	-		3.000	0.000	17.057	0.000
Control and Planning Segment (aka Mission Operations System)	C/FPIF	TBD:TBD,	-	1.000	Aug 2012	57.063	Dec 2012	-		57.063	157.370	215.433	0.000
Gateway architecture development	MIPR	SPAWAR:San Diego, CA	5.400	11.176	Dec 2011	13.527	Dec 2012	-		13.527	42.946	73.049	0.000
EPS Design/Development Contract	SS/CPAF	NGAS:Redondo Beach, CA	553.053	53.809	Dec 2011	12.073	Dec 2012	-		12.073	51.635	670.570	0.000
Mission Control Segment Design Trade Studies	SS/CPAF	Lockheed Martin:Sunnyvale, CA	29.509	-		-		-		-	0.000	29.509	0.000
Cryptographic Modifications	MIPR	NSA:Camden, NJ	6.845	1.147	Dec 2011	-		-		-	0.000	7.992	0.000
Subtotal			981.734	70.043		85.663		-		85.663	251.951	1,389.391	0.000

Remarks
Classified Contract Method/Type/Activity and Location are classified

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 (PMA)	Various	Various:Various,	47.567	11.355	Dec 2011	-		-		-	0.000	58.922	0.000
Program Office Support (PMA)	Various	Various:Various,	76.898	18.550	Dec 2011	-		-		-	0.000	95.448	0.000
Systems Engineering & Integration	Various	Linquest:Los Angeles, CA	-	-		6.684	Dec 2012	-		6.684	22.153	28.837	0.000
Govt Furnished Property (PMA)	Various	Various:Various,	10.957	1.400	Dec 2011	2.294		-		2.294	0.000	14.651	0.000

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603432F: <i>Polar MILSATCOM (Space)</i>	PROJECT 644052: <i>Polar Satellite Communications</i>
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Support (\$ 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			
Subtotal			135.422	31.305		8.978		-		8.978	22.153	197.858	0.000

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			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

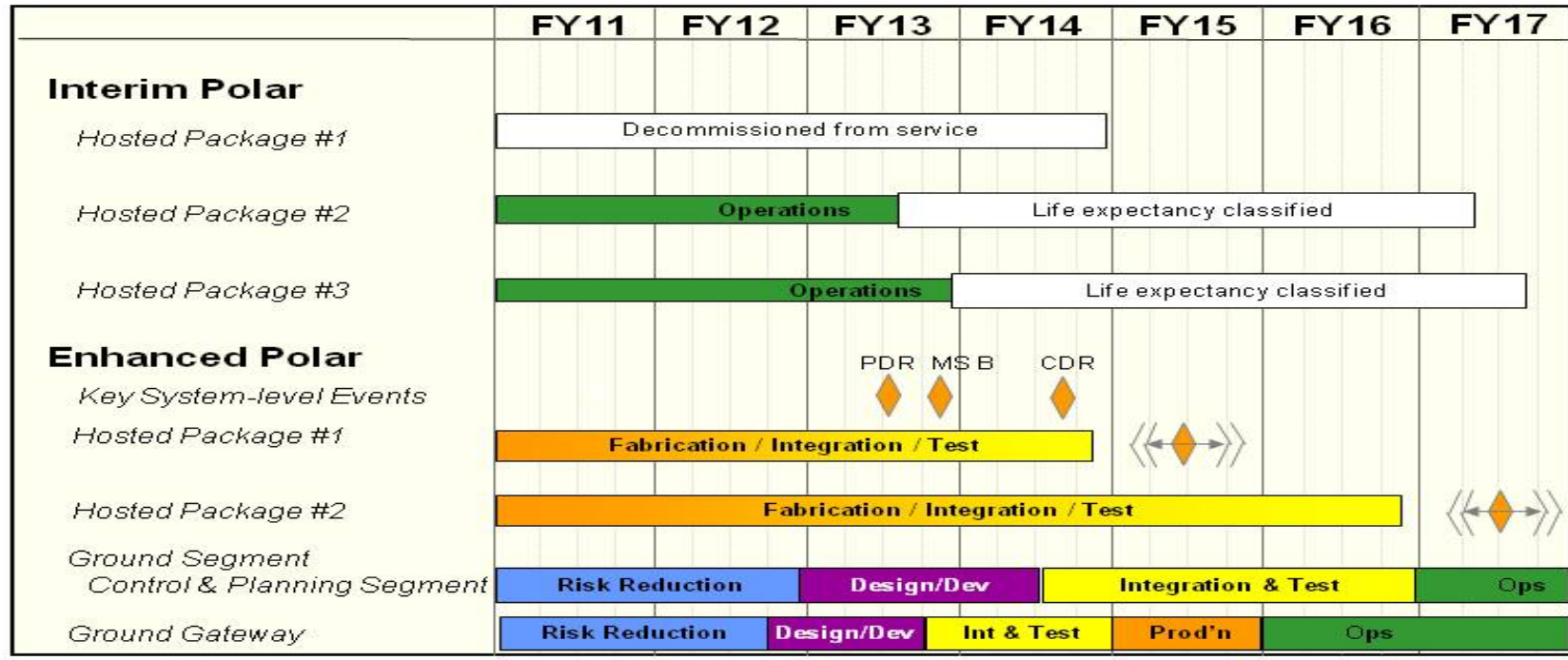
Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
FFRDC (PMA)	Various	Various:Various,	-	-		10.463	Dec 2012	-		10.463	30.252	40.715	0.000
Travel/Business Ops Support Services/Acquisition Mission Support (PMA)	Various	Various:Various,	-	-		15.572	Dec 2012	-		15.572	42.877	58.449	0.000
Subtotal			-	-		26.035		-		26.035	73.129	99.164	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		
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost					
Project Cost Totals		1,117.156		101.348		120.676		-		120.676	347.233	1,686.413	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 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603432F: Polar MILSATCOM (Space)	PROJECT 644052: Polar Satellite Communications



CDR: Critical Design Review PDR: Preliminary Design Review MS: Milestone

- Concept activities
- Production / fielding
- Design / development
- Operations / sustainment
- Integration / test
- Launch / Key Event

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603432F: <i>Polar MILSATCOM (Space)</i>	PROJECT 644052: <i>Polar Satellite Communications</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Ground Control Emulator Review	2	2011	2	2011
Deliver payloads and begin integration onto host satellites	2	2012	2	2012
Control and Planning Segment Preliminary Design Review	2	2013	2	2013
Ground Gateway Critical Design Review	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603438F: <i>Space Control Technology</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	63.310	44.635	25.144	-	25.144	25.159	26.190	27.053	27.882	Continuing	Continuing
642611: <i>Technology Insertion Planning and Analysis</i>	45.666	25.595	5.799	-	5.799	5.560	6.176	6.481	7.039	Continuing	Continuing
64A007: <i>Space Range</i>	17.644	19.040	19.345	-	19.345	19.599	20.014	20.572	20.843	Continuing	Continuing

Note
 FY 2011 funding totals include \$16.0M appropriated for Overseas Contingency Operations.

A. Mission Description and Budget Item Justification

This program supports a range of activities including technology planning, development, demonstrations and prototyping, as well as modeling, simulations and exercises to support development of tactics and procedures in the Space Control mission area. The types of Space Control activities accomplished are Space Situational Awareness (SSA), Defensive Counterspace (DCS), Offensive Counterspace (OCS) and Command and Control and Battle Management. For use in the Space Control mission area, SSA includes monitoring, detecting, identifying, tracking, assessing, verifying, categorizing, and characterizing, objects and events in space and terrestrial based space capabilities. DCS includes defensive activities to protect U.S. and friendly space-systems assets, resources, and operations from enemy attempts to negate or interfere and prevention activities that limit or eliminate an adversary's ability to use U.S. space systems and services for purposes hostile to U.S. national security interests. OCS activities disrupt, deny, degrade or destroy space systems, or the information they provide, which may be used for purposes hostile to U.S. national security interests. Consistent with DOD policy, the negation efforts of this program currently focus on negation technologies which have temporary, localized, and reversible effects. Command & Control efforts include identifying technology solutions to enable fusion of data for use in multi-level security environments, near-real-time data delivery and decision support to war fighter needs. Rapid Reaction Capabilities in response to immediate war fighter needs are developed within this program.

Funding in FY11/12/13 also supports the development of the technology and infrastructure for space control elements of the Space Test and Training Range (STTR). This includes development and demonstration of test assets, special test equipment, capabilities and systems required to test, validate, and verify performance of integrated space control systems. Additionally, this program supports the development of test range assets required to support developmental and operational test, exercises, training, and tactics development for space control systems. A collaborative command & control capability will be integrated into several range systems to provide real time communications during test event scenarios.

Spacetrack Integration Node Global Enhanced Reporting (STINGER) project converts an enhanced processing capability developed for missile warning radar to use for the space situation awareness program radars.

These projects are in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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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 0603438F: <i>Space Control Technology</i>
BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	61.012	45.755	56.121	-	56.121
Current President's Budget	63.310	44.635	25.144	-	25.144
Total Adjustments	2.298	-1.120	-30.977	-	-30.977
• Congressional General Reductions	-	-1.120			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.528	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.230	-	-30.977	-	-30.977

Change Summary Explanation

Due to OSD DTIC rules, FY2011 adjustments are reflected in BY1 Other Adjustment Row.

FY11: -\$0.230M for Congressional General Reductions
 +\$2.528M for Electromagnetic Interference Detection (EMI) JUON

FY12: -\$1.120M for Congressional General Reductions

FY13: -\$32.977M reallocation of funding to higher Department priorities
 +\$2.000M to transition Operationally Responsive Space architecture activities

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603438F: <i>Space Control Technology</i>				PROJECT 642611: <i>Technology Insertion Planning and Analysis</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
642611: <i>Technology Insertion Planning and Analysis</i>	45.666	25.595	5.799	-	5.799	5.560	6.176	6.481	7.039	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 supports a range of activities including technology planning, development, demonstrations and prototyping, as well as modeling, simulations and exercises to support development of tactics and procedures for a responsive and resilient Space Control mission area. The types of Space Control activities accomplished are Space Situational Awareness (SSA), Defensive Counterspace (DCS), Offensive Counterspace (OCS) and Command and Control and Battle Management. For use in the Space Control mission area, SSA includes monitoring, detecting, identifying, tracking, assessing, verifying, categorizing, and characterizing, objects and events in space and terrestrial based space capabilities. DCS includes defensive activities to protect U.S. and friendly space-systems assets, resources, and operations from enemy attempts to negate or interfere and prevention activities that limit or eliminate an adversary's ability to use U.S. space systems and services for purposes hostile to U.S. national security interests. OCS activities disrupt, deny, degrade or destroy space systems, or the information they provide, which may be used for purposes hostile to U.S. national security interests. Analysis to support vulnerability and survivability studies and projects. Consistent with DOD policy, the negation efforts of this program currently focus on negation technologies which have temporary, localized, and reversible effects. Command & Control efforts include identifying technology solutions to enable fusion of data for use in multi-level security environments, near-real-time data delivery and decision support to war fighter needs. Rapid Reaction Capabilities in response to immediate war fighter needs are developed within this program.

Funding also supports the development of the technology and infrastructure for space control elements of the space test and training range. This includes development and demonstration of test assets, special test equipment, capabilities and systems required to test, validate, and verify performance of integrated space control systems. Additionally, this program supports the development of test range assets required to support developmental and operational test, exercises, training, and tactics development for space control systems. A collaborative command & control capability will be integrated into several range systems to provide real time communications during test event scenarios.

Spacetrack Integration Node Global Enhanced Reporting (STINGER) project converts an enhanced processing capability developed for missile warning radar to use for the space situation awareness program radars.

These projects are in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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

	FY 2011	FY 2012	FY 2013
Title: SSA	3.526	10.112	-

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603438F: <i>Space Control Technology</i>	PROJECT 642611: <i>Technology Insertion Planning and Analysis</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Description: Space Situational Awareness efforts such as key space situational awareness enabling technologies, space sensor value modeling and architecture analysis for responsive and resilient SSA.</p> <p>FY 2011 Accomplishments: SSA- Continued optical sensor evaluations to augment the Space Surveillance Network, and Space Object identification missions. Develop proximity Indications and Warning (I & W) prototypes. Planning for qualification and flight testing.</p> <p>FY 2012 Plans: SSA- Continue optical sensor evaluations to augment the Space Surveillance Network, and Space Object identification missions. Develop proximity Indications and Warning prototypes. Planning for qualification and flight testing.</p>				
<p>Title: Survivability</p> <p>Description: Analysis to support vulnerability and survivability studies and projects.</p> <p>FY 2011 Accomplishments: Developed and delivered vulnerability report database.</p> <p>FY 2012 Plans: Developing and will release database improvements and conduct C2 analysis.</p>		1.123	1.200	-
<p>Title: DCS</p> <p>Description: Provides asymmetric threat vulnerability and analysis in support of Space and Missile Center and partnered acquisition developments.</p> <p>FY 2011 Accomplishments: Completed risk reduction for laser indications and warning (I&W) technology concept. Completed first fabrication run on test focal plane.</p>		1.000	-	-
<p>Title: C2</p> <p>Description: Develop C2 technologies for the counterspace mission area.</p> <p>FY 2011 Accomplishments: Delivered prototype satellite tracking and orbit determination software. Completed analysis of space control mission needs for continued C2 efforts in support of the transition to operations.</p>		0.584	-	-
<p>Title: Rapid Reaction Branch (RRB)</p>		22.151	5.206	3.470

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603438F: <i>Space Control Technology</i>	PROJECT 642611: <i>Technology Insertion Planning and Analysis</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Description: Developing advanced capabilities in response to the warfighter Urgent Operational Needs (UONs) and Joint Urgent Operational Needs (JUONs). Conducts prototyping, demonstration, testing, and rapid transition of technology and techniques to space control systems in response to warfighter urgent needs.</p> <p>FY 2011 Accomplishments: Developed advanced capabilities in response to the warfighter JUONs. Integrated and tested new advanced techniques and technologies. Evaluated methods and techniques to answer new USSTRATCOM Evaluation Request Messages (EReqMs). Developed techniques and Technologies for further expansion of current warfighter capabilities. Replenished deployed assets with \$16M of OCO funds.</p> <p>FY 2012 Plans: Developing and testing quick reaction capabilities to satisfy the UONs, JUONs and EReqMs received from USSTRATCOM and other warfighting commands.</p> <p>FY 2013 Plans: Develop and test quick reaction capabilities to satisfy the UONs, JUONs and EReqMs received from USSTRATCOM and other warfighting commands.</p>				
<p>Title: Electromagnetic Interference Detection (EMI) JUON</p> <p>Description: Develop a rapid reaction capability to satisfy the warfighter immediate need for EMI detection and geolocation.</p> <p>FY 2011 Accomplishments: Assisted in the development and fielding of a rapid reaction capability to satisfy the warfighter's urgent need for EMI detection and geolocation.</p>		2.528	-	-
<p>Title: SASSA</p> <p>Description: Self Awareness Space Situational Awareness (SASSA). Development of payload capability for an on-orbit demonstration of space protection capabilities.</p> <p>FY 2011 Accomplishments: Completed payload development for an on-orbit demonstration of space protection capabilities. Delivered SASSA payload for integration.</p>		6.293	-	-
<p>Title: STINGER</p>		0.500	0.439	-

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603438F: <i>Space Control Technology</i>	PROJECT 642611: <i>Technology Insertion Planning and Analysis</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Description: Spacetrack Integration Node Global Enhanced Reporting (STINGER). Conversion of enhanced processing capability, developed for missile warning radar to use for the Space Situational Awareness program radars.</p> <p>FY 2011 Accomplishments: Began conversion of enhanced processing capability, developed for missile warning radar to use for the Space Situational Awareness program radars.</p> <p>FY 2012 Plans: Continuing conversion of enhance processing capability, developed for missile warning radar to use for the Space Situational Awareness program radars.</p>			
<p>Title: Other Program, Architecture and Program Office Support</p> <p>Description: Provide program office and other technical support including system engineering and architectural support.</p> <p>FY 2011 Accomplishments: Provided program office and other technical support including system engineering and architectural support.</p> <p>FY 2012 Plans: Provide program office and other technical support including system engineering and architectural support.</p> <p>FY 2013 Plans: Provide program office and other technical support including system engineering and architectural support. Assist space control programs to develop increasingly responsive, resilient and affordable capabilities via architectures emphasizing hostable payloads, small satellites, interface standards and government/commercial hosting opportunities.</p>	7.961	8.638	2.329
Accomplishments/Planned Programs Subtotals	45.666	25.595	5.799

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>
• 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 contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible. Program consists of numerous small projects.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603438F: <i>Space Control Technology</i>	PROJECT 642611: <i>Technology Insertion Planning and Analysis</i>

E. Performance Metrics

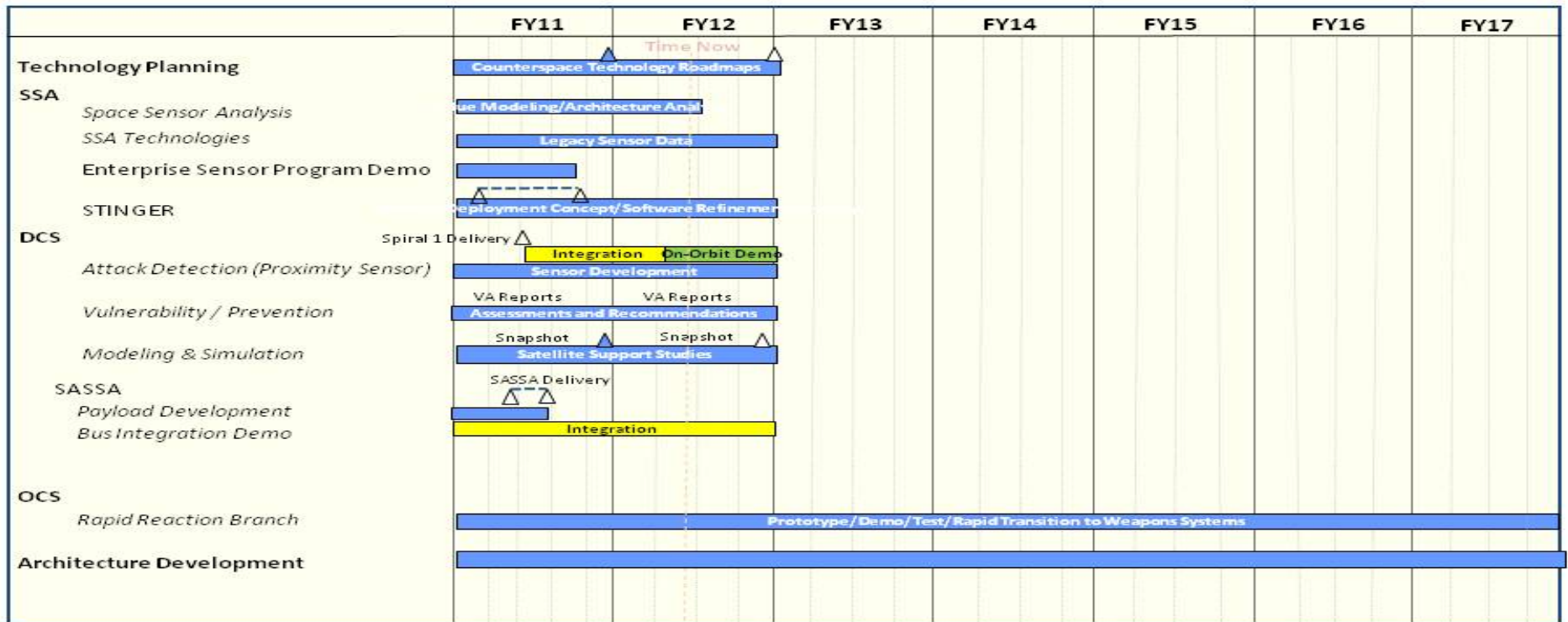
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603438F: <i>Space Control Technology</i>	PROJECT 642611: <i>Technology Insertion Planning and Analysis</i>

SCT

Technology Insertion Schedule



1 ■ Concept activities ■ Integration / test ■ 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603438F: <i>Space Control Technology</i>	PROJECT 642611: <i>Technology Insertion Planning and Analysis</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SSA - Continue sensor development	1	2011	4	2012
SSA - Sensor development Critical Design Review	1	2013	1	2013
DCS - DCS technology development and evaluation	1	2011	4	2011
Command and Control	1	2011	4	2011
Command and Control Delivery	4	2011	4	2011
Survivability - Vulnerability Assessments/Technology Analysis	1	2011	4	2012
Rapid Prototyping	1	2011	4	2017
Architecture Development	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603438F: <i>Space Control Technology</i>	PROJECT 64A007: <i>Space Range</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
	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					
64A007: <i>Space Range</i>	17.644	19.040	19.345	-	19.345	19.599	20.014	20.572	20.843	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 supports the development of Space Test and Training Range (STTR) capabilities required to support developmental and operational test, training, exercises and tactics development for Space Control systems and related architecture. This includes development and demonstration of test assets, special test equipment, capabilities and systems required to test, validate, and verify performance of integrated space control systems. Additionally, this program supports the development of test range assets required to support developmental and operational test, exercises, training, and tactics development for space control systems. A collaborative command & control capability will be integrated into several range systems to provide real time communications during test event scenarios.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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

	FY 2011	FY 2012	FY 2013
Title: Range Control	12.442	14.575	13.410
Description: Range Control -- Development and acquisition of mobile, transportable, and fixed range monitoring and communications capabilities for the space range.			
FY 2011 Accomplishments: Transitioned from Space Range Operations Center (SROC) test-bed into the SROC. Conducted DT and integrated the capability to prepare the new system for operational test. Delivered the fixed range Signal Monitoring Unit (SMU) test-bed prototype. Delivered the first phase of the Space-Center Scheduling Enterprise (S-CSE).			
FY 2012 Plans: Conducting SROC Operational Test and preparing to make the new system operational. Transitioning from the SMU test-bed into fully operationally tested and accepted COTS/GOTS inside the SROC. Kicking off SROC Spiral II for X- and Ka-band capabilities. Beginning work on the deployable range/deployable SMU effort to deliver 4 deployable Signal Monitoring Unit systems.			
FY 2013 Plans: Continues progress toward initial delivery of transportable range system and signal monitoring units. Continues second phase of S-CSE implementation.			
Title: Bandwidth Support	2.094	1.357	3.160

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603438F: <i>Space Control Technology</i>	PROJECT 64A007: <i>Space Range</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Description: Space Test and Training Range (STTR) Leased Bandwidth</p> <p>FY 2011 Accomplishments: Provided required space range satellite communications bandwidth for exercise, testing and training of both offensive and defensive space control systems on the space range.</p> <p>FY 2012 Plans: Providing required space range satellite communications bandwidth for exercise, testing and training of both offensive and defensive space control systems on the space range.</p> <p>FY 2013 Plans: Will provide required space range satellite communications bandwidth for exercise, testing and training of both offensive and defensive space control systems on the space range</p>			
<p>Title: Program Office Support</p> <p>Description: Provides Program Office and other technical support including systems engineering and architectural support.</p> <p>FY 2011 Accomplishments: Provided Program Office and other technical support including systems engineering and architectural support.</p> <p>FY 2012 Plans: Providing Program Office and other technical support including systems engineering and architectural support.</p> <p>FY 2013 Plans: Will provide Program Office and other technical support including systems engineering and architectural support.</p>	3.108	3.108	2.775
Accomplishments/Planned Programs Subtotals	17.644	19.040	19.345

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> Continuing	<u>Total Cost</u> Continuing
• N/A: None	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		

D. Acquisition Strategy
All contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603438F: <i>Space Control Technology</i>	PROJECT 64A007: <i>Space Range</i>

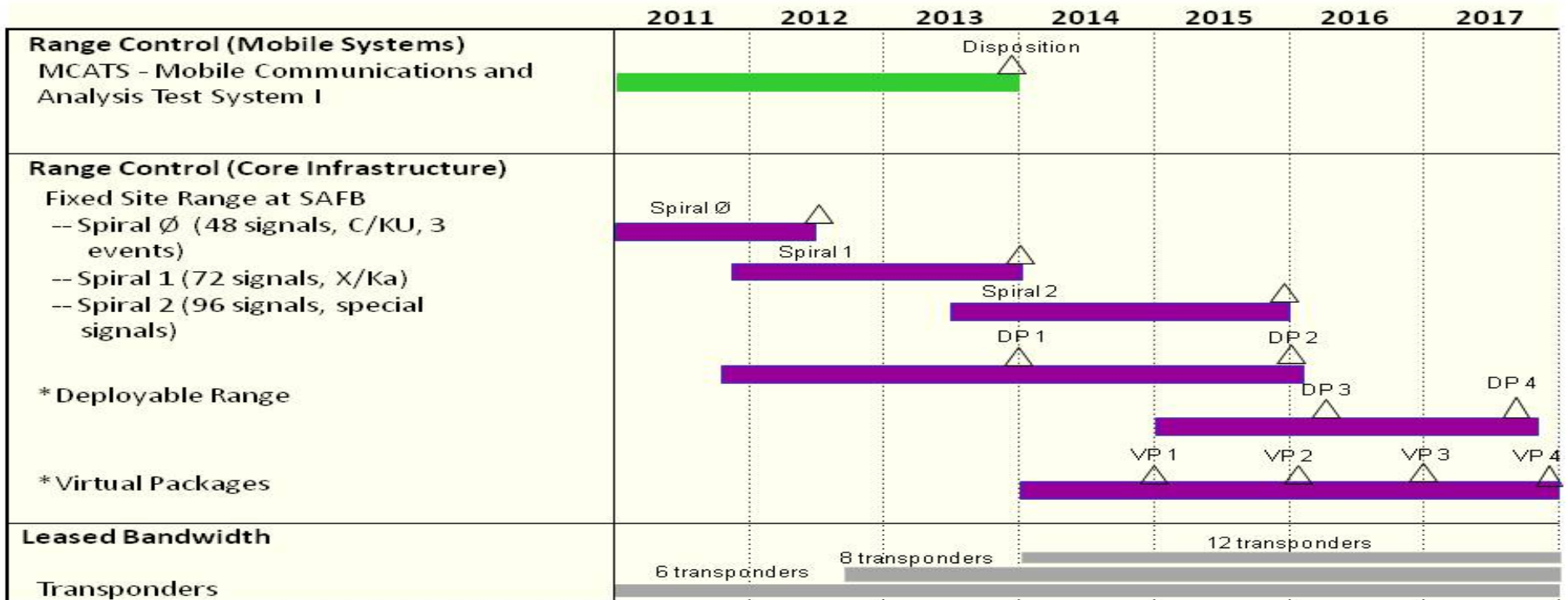
E. Performance Metrics

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603438F: <i>Space Control Technology</i>	PROJECT 64A007: <i>Space Range</i>

SCT STTR 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603438F: <i>Space Control Technology</i>	PROJECT 64A007: <i>Space Range</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Operate Mobile Communications and Analysis Test System (MCATS) 1	1	2011	4	2013
Space Test and Training Range (STTR) Core Fixed Site development Spiral 0	1	2011	2	2012
STTR Core Fixed Site development Spiral 1	3	2011	4	2013
STTR Core Fixed Site development Spiral 2	3	2013	4	2015
Deployable Range Development	4	2011	3	2017
Deployable Range 1 Delivery	4	2013	4	2013
Deployable Range 2 Delivery	1	2016	1	2016
Deployable Range 3 Delivery	1	2016	1	2016
Deployable Range 4 Delivery	3	2017	3	2017
Virtual Package Development	1	2014	4	2017
Virtual Package 1 Delivery	1	2015	1	2015
Virtual Package 2 Delivery	1	2016	1	2016
Virtual Package 3 Delivery	1	2017	1	2017
Virtual Package 4 Delivery	4	2017	4	2017
Purchase Commercial Satellite Bandwidth	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603742F: <i>Combat Identification Technology</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	35.208	38.447	32.243	-	32.243	25.052	25.564	26.274	26.621	Continuing	Continuing
642597: <i>Noncooperative Identification Subsystems</i>	20.722	36.356	22.879	-	22.879	23.178	23.654	24.311	24.632	Continuing	Continuing
642599: <i>Cooperative Identification Techniques</i>	14.486	2.091	9.364	-	9.364	1.874	1.910	1.963	1.989	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Combat Identification (CID) Technology program element analyzes, develops, demonstrates and evaluates promising target identification technologies to facilitate platform transition decisions prior to System Development and Demonstration (SDD). Numerous joint needs statements, operational documents, lessons learned, and NATO requirements state the need for positive CID. High confidence CID increases combat effectiveness, prevents fratricide, and reduces collateral damage. It also enables combatant commanders to effectively command and control their forces in all weather, day or night. This program element focuses on the cooperative and non-cooperative technologies that have the capability to positively identify surface and air targets in both air-to-surface and air-to-air engagements.

In order to rapidly make available promising CID technologies for platform SDD decisions, the program element funds design studies, engineering analysis, non-recurring engineering, and other efforts associated with integration and modification of CID related technologies and systems on platforms. It also supports the development, testing, and implementation of international standards (to include NATO standardization agreements) to ensure joint, Allied, and coalition interoperability.

Non-cooperative CID employs a number of sensing technologies and signal processing techniques. The observations may be compared to a database of known objects to identify surface or air threats from air platforms. These technologies include: (1) Laser Vision, an Electro-Optical/Infrared (EO/IR) imaging system that significantly increases ID ranges and includes exploiting synergies between non-cooperative and cooperative identification systems (radio, millimeter wave, infrared, and laser). The Laser Vision Program is working on performance improvements, laser vibrometry development, 3-dimensional laser detection and ranging, laser radar, Synthetic Aperture Laser (SAL) radar, hyper spectral phenomenology exploitation, aided/automatic target recognition, image fusion and studies to support decisions on future EO/IR technologies; (2) Radar Vision, an air-to-ground radar imaging technique to identify stationary and moving targets using their radar signatures; (3) Hydra Vision (formerly Fusion Vision), a balanced (robust) amalgamation of sensor data from multiple sources to provide warfighters with higher confidence CID results on surface or air targets potentially including fusion with intelligence sources, identification of non-traditional targets, fusion to counter camouflage, concealment and deception (CCD), and multi-phenomenology features for sustainable databases and (4) X-Patch, a validated set of prediction codes and analysis tools that use the Shooting-and-Bouncing Ray (SBR) method to predict realistic far-field radar signatures from 3D target models in order to predict 1D and/or 2D data. X-Patch is vital for development of radar signatures of potential high-threat weapons systems; it is a critical capability of database production centers which support Joint Sensors Signature Database (JSSD) pathfinders.

Cooperative CID employs technologies required to rapidly identify friendly platforms. The program develops, integrates and evaluates technologies that provide AF platforms with a means of positively identifying an air or ground platform as a friendly, via active or passive cooperative ID capabilities. Development funded by this

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603742F: <i>Combat Identification Technology</i>

program element ensures availability of a Mode 5 upgrade path for implementing ground and air platforms across the Air Force fleet. Within the air-to-air domain, programs funded to meet this intent include: (1) Mode 5 Technology Insertion Program (TIP): The program element funds preliminary RDT&E for Mark XIIA, the next generation Identification Friend or Foe (IFF) standard for the DoD and NATO. Mark XIIA represents a substantial enhancement to the Mark XII IFF system. It is expected to achieve joint initial operational capability in 2014. The "A" denotes the addition of Mode 5 (an encrypted challenge-and-reply mode) to the other Mark XII system modes (Modes 1, 2, 3/A, C, S, and 4). The Mode 5 secure IFF program is a DoD-wide, Navy-led development and acquisition program. The Mode 5 TIP specifically addresses implementing air platforms. (2) Automatic Dependent Surveillance-Broadcast (ADS-B)TIP: This program element will fund preliminary RDT&E for integration of ADS-B architecture into the APX-119 Mark XIIA transponder. The ADS-B TIP will develop ADS-B "In" and "Out" capability which leverages synergies between ADS-B and Mode 5 Level 2 (M5L2) to achieve M5L2 "In" capability. The ADS-B TIP specifically addresses implementing air platforms. (3) Digital IFF Control Panel: This program element is developing a Digital IFF Control Panel (DCP) to support Mode 5 and ADS-B insertion programs into Air Force platforms with an Aeronautics Research Incorporated (ARINC) 429 based avionics architecture. The DCP will provide a standard control panel for AF aircraft with growth capability for ADS-B and beyond.

Within the air-to-ground domain, development funded by this program element ensures development, integration, test and evaluation of friendly identification systems focused on reducing air-to-ground fratricide. A potential program to meet this intent includes: (1) Radio Based Combat Identification: An active challenge reply system leveraging Single Channel Ground and Airborne Radio System (SINCGARS) capable ground and aircraft targeting pod mounted radios for air-to-ground friendly identification.

This program element also funds the Air Traffic Control Beacon Systems Identification Friend or Foe Mark XII/XIIA Systems (AIMS) Program Office. The DoD International AIMS PO has system level interoperability management responsibilities for the present Mark XII system, development and integration of Mark XIIA (Mode 5) and transition to Mark XIIA Mode S 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 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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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 0603742F: <i>Combat Identification Technology</i>
BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	26.172	38.496	24.683	-	24.683
Current President's Budget	35.208	38.447	32.243	-	32.243
Total Adjustments	9.036	-0.049	7.560	-	7.560
• Congressional General Reductions	-	-0.049			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.749	-			
• Other Adjustments	9.785	-	7.560	-	7.560

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

Project: 642597: *Noncooperative Identification Subsystems*

Congressional Add: *Fast Steering Mirror*

Congressional Add Subtotals for Project: 642597

Congressional Add Totals for all Projects

	FY 2011	FY 2012
	-	-
	-	-
	-	-

Change Summary Explanation

FY11 Congressional Add of 9.785M for ADS-B in Other Adjustment row.

FY12 Congressional General Reduction (FFRDC, Sec. 8023) of 0.049M.

FY13 funding increase associated with the development of the ADS-B Technology Insertion Program for the APX-119 transponder.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603742F: <i>Combat Identification Technology</i>				PROJECT 642597: <i>Noncooperative Identification Subsystems</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
642597: <i>Noncooperative Identification Subsystems</i>	20.722	36.356	22.879	-	22.879	23.178	23.654	24.311	24.632	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Non-cooperative Combat Identification (CID) employs a number of sensing technologies and signal processing techniques. The observations may be compared to a database of known objects to identify surface or air threats from air platforms. These technologies include: (1) Laser Vision, an electro-optical/infrared (EO/IR) imaging system that significantly increases identification ranges and includes exploiting synergies between non-cooperative and cooperative ID systems (radio, millimeter wave, infrared, and laser). The Laser Vision Program is working on performance improvements, laser vibrometry development, 3-dimensional laser detection and ranging, laser radar, synthetic aperture laser (SAL) radar, hyper spectral phenomenology exploitation, aided/automatic target recognition, image fusion and studies to support decisions on future EO/IR technologies; (2) Radar Vision, an air-to-ground radar imaging technique to identify stationary and moving targets using their radar signatures; (3) Hydra Vision (formerly Fusion Vision), a balanced (robust) amalgamation of sensor data from multiple sources to provide warfighters with higher confidence CID results on surface or air targets potentially including fusion with intelligence sources, identification of non-traditional targets, fusion to counter camouflage, concealment and deception (CCD), and multi-phenomenology features for sustainable databases; and (4) X-Patch, a validated set of prediction codes and analysis tools that use the shooting-and-bouncing ray (SBR) method to predict realistic far-field radar signatures from 3D target models in order to predict 1D and/or 2D data. X-Patch is vital for development of radar signatures of potential high-threat weapons systems; it is a critical capability of database production centers which support Joint Sensors Signature Database (JSSD) pathfinders.

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

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Laser Vision	0.912	0.226	-	-	-
Description: Laser Vision, a family of Electro-Optical (EO) systems that significantly increases ID ranges. Provides the demonstration and evaluation data necessary to support decisions on future EO technologies supporting CID.					
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603742F: <i>Combat Identification Technology</i>	PROJECT 642597: <i>Noncooperative Identification Subsystems</i>				
B. Accomplishments/Planned Programs (\$ in Millions)						
		FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Continued efforts to put EO polarization and improved Electro-Optical/ Infrared (EO/IR) imaging into a targeting pod as a low cost CID discriminator. FY 2012 Plans: Complete development of emerging EO/IR technologies that could be installed into platforms like targeting pods and RPAs. FY 2013 Base Plans: N/A FY 2013 OCO Plans: N/A						
Title: Siren Description: Provides the demonstration and evaluation data necessary to support laser vibrometry into a targeting pod as a low cost CID discriminator. FY 2011 Accomplishments: Continued pod and system assessment. Acquired pod shell for demonstrator. FY 2012 Plans: Initiate sensor design and procure long lead items. FY 2013 Base Plans: Will complete sensor design and conduct critical design review. Will begin component and system fabrication. FY 2013 OCO Plans: N/A		1.208	2.553	4.590	-	4.590
Title: Advanced Concepts Description: (Formerly 3D Ladar Sensor) 3-Dimensional laser detection and ranging, laser radar, Synthetic Aperture Laser (SAL) radar, aided/automatic target recognition, image fusion and studies to support decisions on future EO/IR technologies. FY 2011 Accomplishments: N/A FY 2012 Plans:		-	0.431	2.625	-	2.625

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603742F: <i>Combat Identification Technology</i>		PROJECT 642597: <i>Noncooperative Identification Subsystems</i>	
B. Accomplishments/Planned Programs (\$ in Millions)					
Continue 3-D laser detection and ranging, image fusion studies to support future EO/IO technologies.					
FY 2013 Base Plans: Will complete 3-D lidar detection and ranging sensor evaluations and will begin integration into targeting pods and RPAs. Will develop and integrate visualization (3D Advanced Mode Processing), automatic target recognition, and image fusion for flight demonstrations.					
FY 2013 OCO Plans: N/A					
Title: Radar Vision					
Description: The Radar Vision (RV) technology applies Aided Target Recognition (ATR) algorithms to Radar Imagery and Radar Signature returns which puts target ID labels on the radar imagery and tracks using a common database of target signatures. Develop technologies that can utilize new wide area radar sensors and signal processing.					
FY 2011 Accomplishments: Continued Increment 5 moving and stationary ATR development efforts.					
FY 2012 Plans: Perform final airborne demonstration of real-time combined fixed and moving target combat identification capability. Develop technologies that can utilize new wide area radar sensors and signal processing for improved all weather day night combat identification					
FY 2013 Base Plans: Will complete detailed final performance evaluation of combined fixed and moving target combat identification capability including algorithms and real sensor data. Will develop and implement technologies that will utilize wide area radar identification					
FY 2013 OCO Plans: N/A					
Title: Hydra Vision					
Description: Hydra Vision (Multi Sensor Enhanced ID; formerly Fusion Vision) a balanced (robust) amalgamation of sensor data from multiple sources to provide warfighters with higher confidence CID results on surface or air targets.					
	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
	9.315	6.808	2.437	-	2.437
	4.141	7.921	8.627	-	8.627

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603742F: <i>Combat Identification Technology</i>	PROJECT 642597: <i>Noncooperative Identification Subsystems</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> Air to air efforts development continued leading to a feature fusion demonstration. Air to ground efforts designed a system architecture and developed ATR fusion elements and interfaces.</p> <p><i>FY 2012 Plans:</i> Air to air efforts continue to refine fusion algorithms to maximize performance. Air to Ground efforts integrate ATR fusion elements into a complete system followed by a lab demonstration.</p> <p><i>FY 2013 Base Plans:</i> Air to air efforts will conduct a flight demonstration of fusion ATR performance. Air to Ground efforts will conduct a flight demonstration of near-real time ATR fusion capability.</p> <p><i>FY 2013 OCO Plans:</i> N/A</p>						
<p><i>Title:</i> Studies <i>Description:</i> Conduct CID-related studies/demos and conferences.</p> <p><i>FY 2011 Accomplishments:</i> Continued AFIT CID related projects.</p> <p><i>FY 2012 Plans:</i> Continue AFIT related CID projects and Enhanced Combat Identification (ECID) study.</p> <p><i>FY 2013 Base Plans:</i> AFIT will continue to encourage CID related studies and will continue the ECIDs study.</p> <p><i>FY 2013 OCO Plans:</i> N/A</p>		0.368	1.246	1.439	-	1.439
<p><i>Title:</i> X-Patch <i>Description:</i> X-Patch consists of software code refinement based on feedback from the X-Patch user community.</p> <p><i>FY 2011 Accomplishments:</i></p>		3.178	3.168	3.161	-	3.161

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603742F: <i>Combat Identification Technology</i>		PROJECT 642597: <i>Noncooperative Identification Subsystems</i>	
B. Accomplishments/Planned Programs (\$ in Millions)					
N/A					
FY 2013 Base Plans:					
N/A					
FY 2013 OCO Plans:					
N/A					
Title: Automatic Dependent Surveillance-Broadcast (ADS-B)					
Description: Automatic Dependent Surveillance-Broadcast (ADS-B) Technology Insertion Program (TIP): This program element will fund preliminary RDT&E for integration of ADS-B architecture into the APX-119 Mark XIIA transponder. The ADS-B TIP will develop ADS-B "In" and "Out" capability which leverages synergies between ADS-B and Mode 5 Level 2(M5L2) to achieve M5L2 "In" capability. The ADS-B TIP specifically addresses implementing air platforms.					
FY 2011 Accomplishments:					
ADS-B TIP: This program element funded preliminary RDT&E for integration of ADS-B architecture into the APX-119 Mark XIIA transponder. Contract Phase IA awarded in FY11.					
FY 2012 Plans:					
Continue ADS-B TIP development of hardware and software into the APX-119 transponder. Award contracts Phase IB and II.					
FY 2013 Base Plans:					
ADS-B will continue to be inserted into the APX-119 transponder as part of the ADS-B TIP Program.					
FY 2013 OCO Plans:					
N/A					
Accomplishments/Planned Programs Subtotals					
	20.722	36.356	22.879	-	22.879
Congressional Add: Fast Steering Mirror					
	-	-			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603742F: <i>Combat Identification Technology</i>	PROJECT 642597: <i>Noncooperative Identification Subsystems</i>
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	FY 2011	FY 2012
FY 2011 Accomplishments: Continued to insert Fast Steering Mirror technology into the Northrop Litening pod.		
FY 2012 Plans: Complete Fast Steering Mirror technology insertion into the Northrop Litening pod.		
Congressional Adds Subtotals	-	-

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	Continuing Continuing

D. Acquisition Strategy

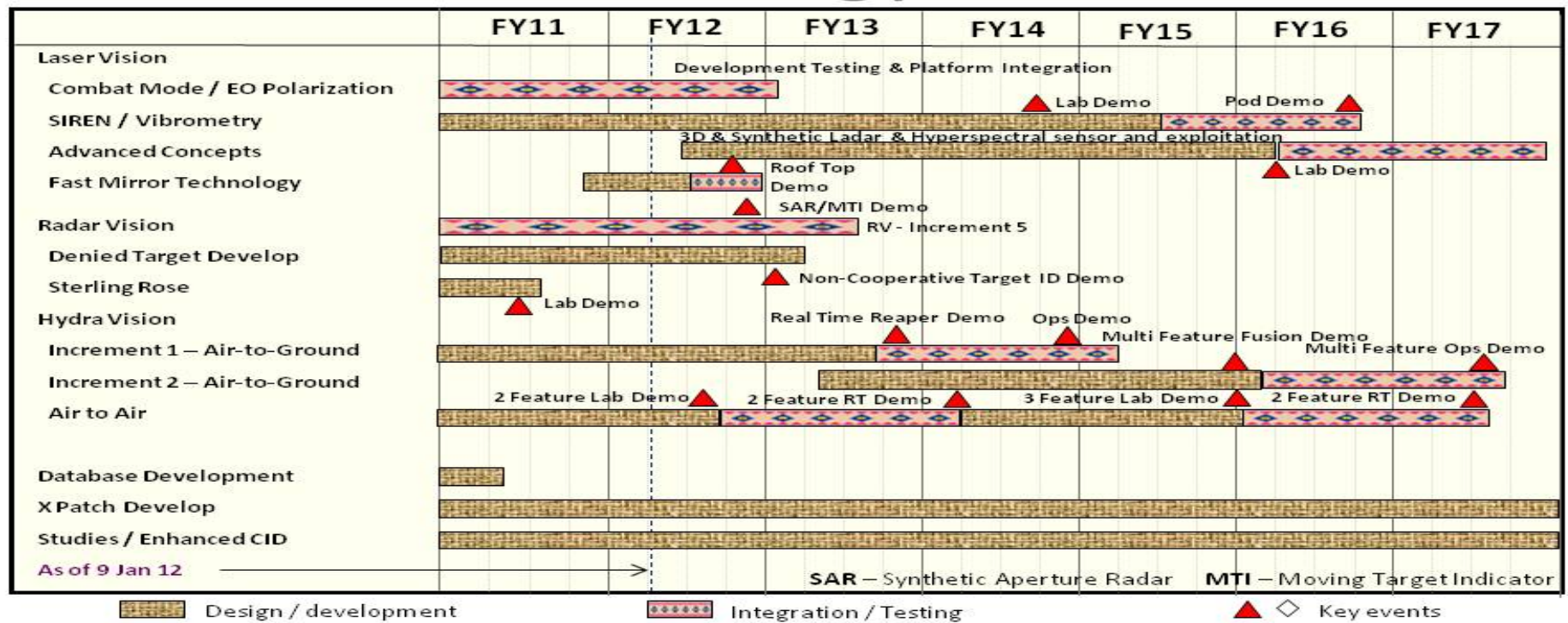
Award multiple, competitive contract vehicles emphasizing off-the-shelf technology and maximizing the use of non-developmental items (NDIs).

E. Performance Metrics

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

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 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603742F: Combat Identification Technology	PROJECT 642597: Noncooperative Identification Subsystems

Non-Cooperative CID Technology 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603742F: <i>Combat Identification Technology</i>	PROJECT 642597: <i>Noncooperative Identification Subsystems</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
LASER VISION - Combat Mode / EO Polarization	1	2011	1	2013
LASER VISION - Siren / Vibrometry	1	2011	4	2016
LASAR VISION - Advanced Concepts (formerly 3D Ladar Sensor)	2	2012	4	2017
LASER VISION - Fast Mirror Technology Insertion	3	2011	4	2012
RADAR VISION - Radar Vision Increment 5	1	2011	3	2013
RADAR VISION - Denied Target Development	1	2011	1	2013
RADAR VISION - Sterling Rose	1	2011	3	2011
Hydra VISION - Increment 1 - Air-to-Ground	1	2011	1	2015
Hydra VISION - Increment 2 - Air-to-Ground	2	2013	3	2017
Hydra VISION - Air-to-Air	1	2011	3	2017
Database Development	1	2011	2	2011
X-Patch Development	1	2011	4	2017
Studies / Enhanced CID (ECID)	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603742F: <i>Combat Identification Technology</i>				PROJECT 642599: <i>Cooperative Identification Techniques</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
642599: <i>Cooperative Identification Techniques</i>	14.486	2.091	9.364	-	9.364	1.874	1.910	1.963	1.989	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Cooperative Combat Identification (CID) employs technologies required to rapidly identify friendly platforms. The program develops, integrates and evaluates technologies that provide AF platforms with a means of positively identifying an air or ground platform as a friendly, via active or passive cooperative identification capabilities. Development funded by this program element ensures availability of a Mode 5 upgrade path for implementing ground and air platforms across the Air Force fleet. Within the air-to-air domain, programs funded to meet this intent include: (1) Mode 5 Technology Insertion Program (TIP): The Program Element (PE) funds preliminary RDT&E for Mark XIIA, the next generation Identification Friend or Foe (IFF) standard for the DoD and NATO. Mark XIIA represents a substantial enhancement to the Mark XII IFF system. It is expected to achieve Joint Initial Operational Capability in 2014. The "A" denotes the addition of Mode 5 (an encrypted challenge-and-reply mode) to the other Mark XII system modes (Modes 1, 2, 3/A, C, S, and 4). The Mode 5 secure IFF program is a DoD-wide, Navy-led development and acquisition program. The Mode 5 TIP specifically addresses implementing air platforms. (2) Automatic Dependent Surveillance-Broadcast (ADS-B) Technology Insertion Program (TIP): This PE will fund preliminary RDT&E for integration of ADS-B architecture into the APX-119 Mark XIIA transponder. The ADS-B TIP will develop ADS-B "In" and "Out" capability which leverages synergies between ADS-B and Mode 5 Level 2 (M5L2) to achieve M5L2 "In" capability. The ADS-B TIP specifically addresses implementing air platforms. (3) Digital IFF Control Panel: This PE is developing a Digital IFF Control Panel (DCP) to support Mode 5 and ADS-B insertion programs into Air Force platforms with an ARINC 429 based avionics architecture. The DCP will provide a standard control panel for AF aircraft with built in capability for IFF support of ADS-B and beyond.

Within the air-to-ground domain, development funded by this program element ensures development, integration, test and evaluation of friendly identification systems focused on reducing air-to-ground fratricide. A potential program to meet this intent includes: (1) Radio Based Combat Identification: An active challenge reply system leveraging Single Channel Ground and Airborne Radio System (SINCGARS) capable ground and aircraft targeting pod mounted radios for air-to-ground friendly identification.

This PE also funds the Air Traffic Control Radar Beacon Systems Identification Friend or Foe Mark XII/XIIA System (AIMS) Program Office. The DoD International AIMS PO has system level interoperability management responsibilities for the present Mark XII system, development and integration of Mark XIIA (Mode 5) and transition to Mark XIIA Mode S systems.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603742F: <i>Combat Identification Technology</i>	642599: <i>Cooperative Identification Techniques</i>			
B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: Mode 5 Technology Insertion Program</p> <p>Description: Continue the Mode 5 upgrade to the APX-119 transponder, the APX-114 interrogator, and the APX-113 Combined Interrogator/Transponder (CIT).</p> <p>FY 2011 Accomplishments: Completed the testing and certification of the APX-113 and continue with aircraft integration support.</p> <p>FY 2012 Plans: N/A</p> <p>FY 2013 Base Plans: N/A</p> <p>FY 2013 OCO Plans: N/A</p>	2.735	-	-	-	-
<p>Title: ADS-B TIP</p> <p>Description: Automatic Dependent Surveillance-Broadcast (ADS-B) TIP: This program element will fund preliminary RDT&E for integration of ADS-B architecture into the APX-119 Mark XIIA transponder. The ADS-B TIP will develop ADS-B "In" and "Out" capability which leverages synergies between ADS-B and Mode 5 Level 2(M5L2) to achieve M5L2 "In" capability. The ADS-B TIP specifically addresses implementing air platforms.</p> <p>FY 2011 Accomplishments: Began ADS-B TIP program into the APX-119 transponder.</p> <p>FY 2012 Plans: Continue ADS-B TIP development of software and hardware into the APX-119 transponder.</p> <p>FY 2013 Base Plans: ADS-B TIP will continue development of software and hardware into the APX-119 transponder.</p> <p>FY 2013 OCO Plans: N/A</p>	9.969	-	7.500	-	7.500
<p>Title: AIMS Program Office</p>	1.782	2.091	1.864	-	1.864

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603742F: <i>Combat Identification Technology</i>		PROJECT 642599: <i>Cooperative Identification Techniques</i>	
B. Accomplishments/Planned Programs (\$ in Millions)					
Description: Fund Air Traffic Control Radar Beacon Systems Identification Friend or Foe Mark XIIA System (AIMS) Program Office. The DoD International AIMS PO has system level interoperability management responsibilities for the present Mark XII system, development and integration of Mark XIIA (Mode 5) and transition to Mark XIIA Mode S systems.					
FY 2011 Accomplishments: Continued to fund AIMS for interoperability testing, FAA liason, and support of Mode 4 / Mode 5 equipment.					
FY 2012 Plans: Continue to fund AIMS for interoperability testing, FAA liason, and support of Mode 4 / Mode 5 equipment.					
N/A					
FY 2013 Base Plans: Will continue to fund AIMS for interoperability testing, FAA liason, and support of Mode 4 / Mode 5 equipment.					
FY 2013 OCO Plans: N/A					
Title: Digital IFF Control Panel					
Description: A Digital IFF Control Panel (DCP) is being developed to support Mode 5 and ADS-B insertion programs into Air Force platforms with an ARINC 429 based avionics architecture. The DCP will provide a standard control panel for AF aircraft with built in capability for IFF support of ADS-B and beyond.					
FY 2011 Accomplishments: Developed the DCP in support of the Mode 5 TIP and ADS-B TIP programs.					
FY 2012 Plans: Develop the DCP in support of the Mode 5 TIP and ADS-B TIP programs.					
FY 2013 Base Plans: N/A					
FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals					
	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
	14.486	2.091	9.364	-	9.364

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603742F: <i>Combat Identification Technology</i>	PROJECT 642599: <i>Cooperative Identification Techniques</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 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>
• 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

Award multiple, competitive contract vehicles emphasizing off-the-shelf technology and maximizing the use of non-developmental items (NDIs).

E. Performance Metrics

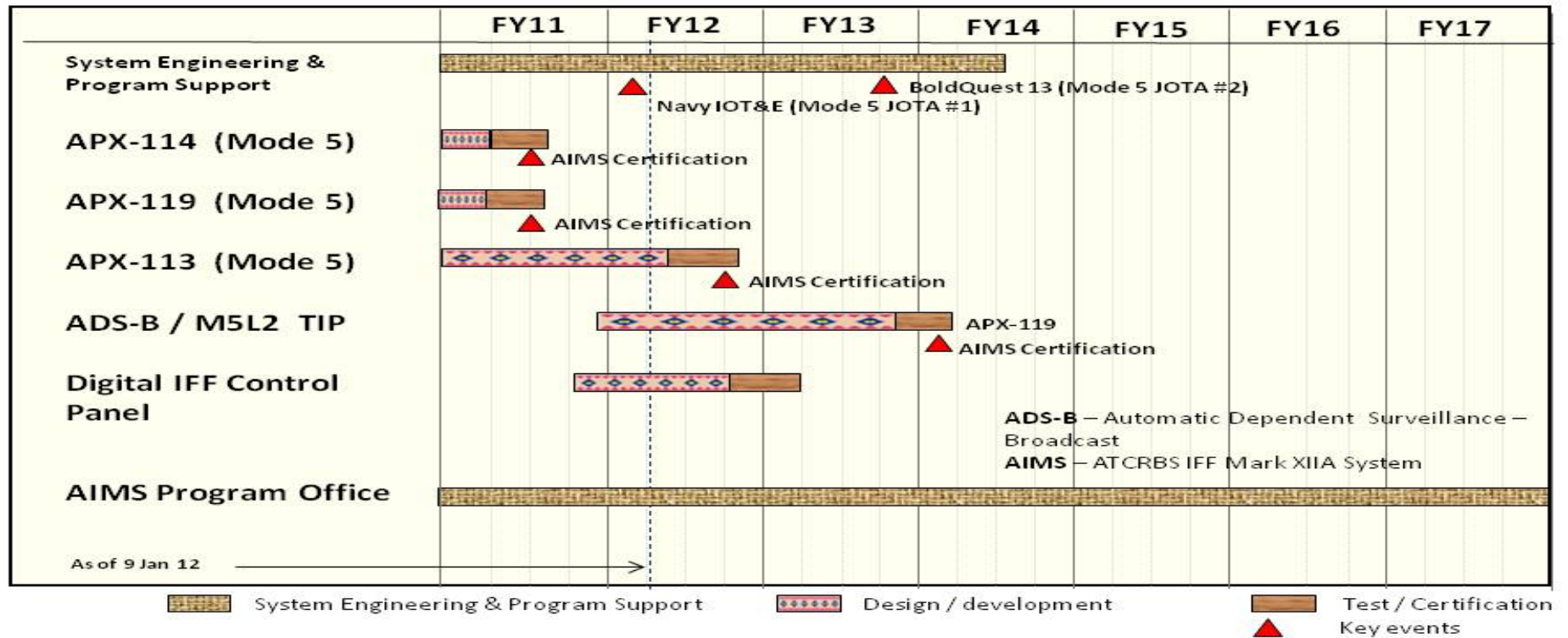
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE
 PE 0603742F: Combat Identification
 Technology

PROJECT
 642599: Cooperative Identification Techniques

Cooperative CID Technology 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603742F: <i>Combat Identification Technology</i>	PROJECT 642599: <i>Cooperative Identification Techniques</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Mode 5 System Engineering and Program Support	1	2011	3	2014
Mode 5 TIP (APX-114 Design Development)	1	2011	3	2011
Mode 5 TIP (APX-119 Design Development)	1	2011	3	2011
Mode 5 TIP (APX-113 Design Development)	1	2011	4	2012
ADS-B / M5L2 TIP	4	2011	1	2014
Digital IFF Control Panel	4	2011	1	2013
AIMS Program Office 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790F: <i>NATO Cooperative R&D</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	4.265	4.424	4.507	-	4.507	4.568	4.661	4.791	4.854	Continuing	Continuing
64NATO: <i>Nato Coop R&D</i>	4.265	4.424	4.507	-	4.507	4.568	4.661	4.791	4.854	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

These funds will be used to initiate international cooperative research, and development (ICR&D) agreements with North Atlantic Treaty Organization (NATO) member states, major non-NATO allies and friendly foreign countries. Each of the selected programs and projects are required to have a concluded IA, prior to funds being released, that implements the provisions of Title 10 U.S. Code, Section 2350a. The legislation (Title 10 U.S. Code, Section 2350) authorizes funds to significantly improve U.S. and allied conventional defense capabilities by leveraging the best defense technologies, eliminating costly duplication of R&D efforts, accelerating the availability of defense systems, and promoting US and allied interoperability or commonality. These funds will not be used for government civilian salaries, permanent construction, or spent overseas. This program element funds the implementation of Air Force ICR&D agreements in (1) Basic Research (2) Applied Research (3) Advanced Technology Development (4) Advanced Component Development and Prototypes (5) System Development and Demonstration and (6) RDT&E Management Support.

This PE is designated in Budget Activity 4 because most of the ICR&D projects support specific systems, include all efforts necessary to evaluate integrated technologies in as realistic an operating environment as possible to assess the performance or cost reduction potential of advanced technology, and help expedite technology transition from the laboratory to operational use.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	4.372	4.424	4.499	-	4.499
Current President's Budget	4.265	4.424	4.507	-	4.507
Total Adjustments	-0.107	-	0.008	-	0.008
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.085	-			
• Other Adjustments	-0.022	-	0.008	-	0.008

Change Summary Explanation

FY11: Congressional General Reductions (-)\$0.022, are reflected in Other Adjustment Row.

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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790F: <i>NATO Cooperative R&D</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>Title: Image Gyro (AFRL and Japan)</p> <p>Description: Image Gyro (AFRL and Japan). Cooperative project to develop a new image-based motion sensor known as the "Image Gyro".</p> <p>FY 2011 Accomplishments: Continue the Image Gyro will be a low-cost, lightweight and highly accurate device that will achieve equivalent or higher precision drift free capabilities than that of today's accurate and more expensive inertial navigation systems. In addition to GPS free precision navigation, the Image Gyro will provide capabilities such as: passive moving target indication (MTI), 3D scene reconstruction (3D structure from motion), obstacle/collision avoidance, and automatic target recognition.</p> <p>FY 2012 Plans: N/A</p>	0.300	-	-	-	-
<p>Title: Durability Assessment and Probabilistic Life Prediction of Titanium Alloys (AFRL and India)</p> <p>Description: Durability Assessment and Probabilistic Life Prediction of Titanium Alloys (AFRL and India).</p> <p>FY 2011 Accomplishments: Continue cooperative project to research technical areas as related to titanium alloys: (1) Fundamental information on the microstructure of titanium alloys as affected by the conditions of their fabrication and their composition to include simulation and modeling to allow prediction of their properties. (2) Methods for life prediction of titanium alloys in service as a function of exposure conditions and fatigue, fracture and damage models in order to fully utilize those alloys for aeronautical structures and components.</p> <p>FY 2012 Plans: N/A</p>	0.100	-	-	-	-
<p>Title: Aging Systems Materials and Process Technologies (AFRL and Australia)</p> <p>Description: Aging Systems Materials and Process Technologies (AFRL and Australia).</p> <p>FY 2011 Accomplishments: Continue cooperative project to develop and/or optimize techniques aimed at improving aircraft structural and electrical integrity. When implemented, these techniques will reduce life-cycle costs associated with legacy,</p>	0.050	-	-	-	-

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
emerging, and future aircraft as well as improve aircraft availability and safety. Project focus will be on bonded joints and aircraft wiring. FY 2012 Plans: N/A					
Title: Military Aircraft Survivability Through Improved Composite Structures (USAF 46th Test Wing and Germany) Description: Military Aircraft Survivability Through Improved Composite Structures (USAF 46th Test Wing and Germany). FY 2011 Accomplishments: N/A FY 2012 Plans: N/A	-	-	-	-	-
Title: Flapping Wing Micro Air Vehicle Collaborative Development (AFRL and Korea) Description: Flapping Wing Micro Air Vehicle Collaborative Development (AFRL and Korea). FY 2011 Accomplishments: Continue cooperative project to design, develop and test a prototype micro air vehicle. FY 2012 Plans: N/A	0.100	-	-	-	-
Title: Ultrahigh Temperature Ceramics (AFRL and UK) Description: Ultrahigh Temperature Ceramics (AFRL and UK). FY 2011 Accomplishments: Continue cooperative project to accelerate understanding and development of ultrahigh temperature ceramic materials for system transition. FY 2012 Plans: N/A	0.250	-	-	-	-
Title: Compact Penetrating Weapons for the Defeat of Hardened Targets (AFRL - UK)	0.376	-	-	-	-

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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: Compact Penetrating Weapons for the Defeat of Hardened Targets (AFRL - UK).</p> <p>FY 2011 Accomplishments: Cooperative project to improve maximum penetration and lethal effectiveness capability in weapons for use with advanced fighter aircraft and other aircraft.</p> <p>FY 2012 Plans: N/A</p>					
<p>Title: Dynamic Network Visualization Techniques for Cyberspace (AFRL - Singapore)</p> <p>Description: Dynamic Network Visualization Techniques for Cyberspace (AFRL - Singapore).</p> <p>FY 2011 Accomplishments: Cooperative project to develop visualization and interaction techniques for showing dynamic network information for cyberspace operations.</p> <p>FY 2012 Plans: N/A</p>	0.400	-	-	-	-
<p>Title: Assessment of Military Operations in Urban Terrain (AFRL - Germany)</p> <p>Description: Assessment of Military Operations in Urban Terrain (AFRL - Germany).</p> <p>FY 2011 Accomplishments: Cooperative project to investigate the lethality of an array of munitions against military operations against urban terrain targets.</p> <p>FY 2012 Plans: N/A</p>	0.300	-	-	-	-
<p>Title: Thermal Barrier Coating Health and Turbine Temperature Sensing (AFRL and UK).</p> <p>Description: Thermal Barrier Coating Health and Turbine Temperature Sensing (AFRL and UK).</p> <p>FY 2011 Accomplishments:</p>	0.350	-	-	-	-

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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603790F: <i>NATO Cooperative R&D</i>				
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Cooperative project to test thermal barrier coating in suitable environments where common nomenclature, test specification, data format, standardization, and interoperability can be established. FY 2012 Plans: N/A						
Title: Efficacy of Vibrotactile Stimulation in Simulated Operational Conditions (AFRL and The Netherlands) Description: Efficacy of Vibrotactile Stimulation in Simulated Operational Conditions (AFRL and The Netherlands). FY 2011 Accomplishments: N/A FY 2012 Plans: N/A		-	-	-	-	-
Title: Next Generation Advanced Composite Processing Science (AFRL and Canada) Description: Next Generation Advanced Composite Processing Science (AFRL and Canada). FY 2011 Accomplishments: Cooperative project to develop and validate the next generation process models to aid in the manufacturing of advanced polymer matrix composite and hybrid materials in an effort to maximize their affordable and efficient use for aerospace applications. FY 2012 Plans: N/A		0.050	-	-	-	-
Title: Command and Control Interoperability Program (AFRL and UK) Description: Command and Control Interoperability Program (AFRL and UK). FY 2011 Accomplishments: Cooperative project to develop, experiment, demonstrate and provide a report into a capability to effectively, efficiently and seamlessly exchange space planning, replanning and information products between and amongst coalition warfighters. FY 2012 Plans:		0.300	-	-	-	-

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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: Machine Translation for International Security Assistance Force (711 HPW/RHX). Description: Machine Translation for International Security Assistance Force (711 HPW/RHX). FY 2011 Accomplishments: Cooperative project to build prototype machine translation system for English and German to Dari to support coalition operations in Afghanistan. FY 2012 Plans: Continuation of cooperative project to build prototype machine translation system for English and German to Dari to support coalition operations in Afghanistan.	0.100	0.100	-	-	-
N/A					
Title: Live, Virtual and Constructive Immersive Decision Making Environments (711 HPW/RHA and Canada) Description: Live, Virtual and Constructive Immersive Decision Making Environments (711 HPW/RHA and Canada). FY 2011 Accomplishments: Cooperative project to significantly improve cost and effectiveness of LVC technology, focusing on UAV, Homeland Defense and Electronic Warfare training, rehearsal and advanced threat modeling. FY 2012 Plans: Continuation of cooperative project to significantly improve cost and effectiveness of LVC technology, focusing on UAV, Homeland Defense and Electronic Warfare training, rehearsal and advanced threat modeling.	0.300	0.300	-	-	-
N/A					
Title: Robust Solid State Materials for Optical Sensors Protection (AFRL and Sweden) Description: Robust Solid State Materials for Optical Sensors Protection (AFRL and Sweden). FY 2011 Accomplishments:	0.200	0.200	-	-	-

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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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Cooperative project will develop solid state glassy solids for sensor protection against threat pulsed laser radiation. Will measure limiting performance by a battery of characterization techniques and deliver a series of solids to be placed in optical system platforms.					
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<p>FY 2012 Plans: Continuation of cooperative project will develop solid state glassy solids for sensor protection against threat pulsed laser radiation. Will measure limiting performance by a battery of characterization techniques and deliver a series of solids to be placed in optical system platforms.</p> <p>N/A</p>					
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<p>Title: Common Coalition Airborne Access Portal (551 ELSW and NATO). Description: Common Coalition Airborne Access Portal (551 ELSW and NATO).</p> <p>FY 2011 Accomplishments: Cooperative project will connect US/European lab sites and airborne IP networks via a common access portal that provides interoperability and multinational security.</p> <p>FY 2012 Plans: Continuation of cooperative project will connect US/European lab sites and airborne IP networks via a common access portal that provides interoperability and multinational security.</p> <p>N/A</p>	0.295	0.400	-	-	-
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<p>Title: Radio Frequency (RF) Modeling and Simulation Experimentation for Distributed Electronic Warfare, Situational Awareness and Response (DEWSAR) Project (AFRL/Ry and Australia) Description: Radio Frequency (RF) Modeling and Simulation Experimentation for Distributed Electronic Warfare, Situational Awareness and Response (DEWSAR) Project (AFRL/Ry and Australia).</p> <p>FY 2011 Accomplishments: Cooperative project will evaluate distributed electronic support and electronic attack architectures.</p> <p>FY 2012 Plans: Continuation of cooperative project will evaluate distributed electronic support and electronic attack architectures.</p>	0.294	0.400	-	-	-
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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: Advanced Ladar Imaging Analysis System (AFRL and France)</p> <p>Description: Advanced Ladar Imaging Analysis System (AFRL and France).</p> <p>FY 2011 Accomplishments: Cooperative project will develop techniques for enhanced imaging for combat identification. The effort will focus on the development, test and evaluation of algorithms for 3-D laser, advanced ladar modes and coherent aperture synthesis.</p> <p>FY 2012 Plans: Continuation of cooperative project will develop techniques for enhanced imaging for combat identification. The effort will focus on the development, test and evaluation of algorithms for 3-D laser, advanced ladar modes and coherent aperture synthesis.</p>	0.150	0.150	-	-	-
N/A					
<p>Title: Molecular Basis of Stress Responses Using In Vitro Neuronal Models (AFRL and India)</p> <p>Description: Molecular Basis of Stress Responses Using In Vitro Neuronal Models (AFRL and India).</p> <p>FY 2011 Accomplishments: Cooperative project will enhance warfighter performance optimization through the controlling and monitoring of molecular analytes corresponding to cognitive function and its stressors.</p> <p>FY 2012 Plans: Continuation of cooperative project will enhance warfighter performance optimization through the controlling and monitoring of molecular analytes corresponding to cognitive function and its stressors.</p>	0.050	0.050	-	-	-
N/A					
<p>Title: Synthesis, Formulation and Characterization of Structural Nano-Energetics (AFRL and Singapore)</p> <p>Description: Synthesis, Formulation and Characterization of Structural Nano-Energetics (AFRL and Singapore).</p> <p>FY 2011 Accomplishments:</p>	0.300	0.400	-	-	-

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Cooperative project will develop structural nano-energetic material to transition for replacement of current structural components on micro-munitions and UAVs and enhanced blast effects. FY 2012 Plans: Continuation of cooperative project will develop structural nano-energetic material to transition for replacement of current structural components on micro-munitions and UAVs and enhanced blast effects. N/A					
Title: Monitoring and Controlling Multiple Assets Within Complex Environments (AFRL, Australia and UK) Description: Cooperative project to design, develop, and evaluate new methods of visualizing the operational environment and controlling sensor inputs leveraging automation where best applicable. FY 2012 Plans: Cooperative project to design, develop, and evaluate new methods of visualizing the operational environment and controlling sensor inputs leveraging automation where best applicable. N/A FY 2013 Base Plans: Continuation of cooperative project to design, develop, and evaluate new methods of visualizing the operational environment and controlling sensor inputs leveraging automation where best applicable. FY 2013 OCO Plans: N/A	-	0.200	0.200	-	0.200
Title: Closed Loop Alternative Navigation Demonstration (AFRL and Australia) Description: Cooperative project to develop an integrated estimation and control vision based navigation system and integrate the closed-loop vision-based navigation system into an unmanned aerial vehicle (UAV). FY 2012 Plans: Cooperative project to develop an integrated estimation and control vision based navigation system and integrate the closed-loop vision-based navigation system into an unmanned aerial vehicle (UAV).	-	0.200	0.300	-	0.300

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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 Base Plans: Continuation of cooperative project to develop an integrated estimation and control vision based navigation system and integrate the closed-loop vision-based navigation system into an unmanned aerial vehicle (UAV). FY 2013 OCO Plans: N/A					
Title: Joint and Coalition Training, Rehearsal, and Exercise Research (AFRL and Australia, Canada, New Zealand, and UK) Description: Cooperative project to enhance technologies, processes, and strategies for routing, persistent, and seamless Live, Virtual, and Constructive (LVC) simulations, and distributed, collaborative methods for joint and coalition training FY 2012 Plans: Cooperative project to enhance technologies, processes, and strategies for routing, persistent, and seamless Live, Virtual, and Constructive (LVC) simulations, and distributed, collaborative methods for joint and coalition training N/A FY 2013 Base Plans: Continuation of cooperative project to enhance technologies, processes, and strategies for routing, persistent, and seamless Live, Virtual, and Constructive (LVC) simulations, and distributed, collaborative methods for joint and coalition training FY 2013 OCO Plans: N/A	-	0.250	0.250	-	0.250
Title: Life Prediction for Metallic Aircraft Structure (AFRL and France) Description: Cooperative project to develop and demonstrate state-of-the-art life prediction approaches suitable for use in aging aircraft applications allowing for more effective system sustainment leading to improved asset availability, reduced maintenance and manpower requirements, and the elimination of technical surprise driven by unanticipated structural deficiencies.	-	0.300	0.325	-	0.325

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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 2012 Plans:</i> Cooperative project to develop and demonstrate state-of-the-art life prediction approaches suitable for use in aging aircraft applications allowing for more effective system sustainment leading to improved asset availability, reduced maintenance and manpower requirements, and the elimination of technical surprise driven by unanticipated structural deficiencies.</p> <p>N/A</p> <p><i>FY 2013 Base Plans:</i> Continuation of cooperative project to develop and demonstrate state-of-the-art life prediction approaches suitable for use in aging aircraft applications allowing for more effective system sustainment leading to improved asset availability, reduced maintenance and manpower requirements, and the elimination of technical surprise driven by unanticipated structural deficiencies.</p> <p><i>FY 2013 OCO Plans:</i> N/A</p>					
<p><i>Title:</i> Aero Advisory and NOTAMS tools (AMC and Canada)</p> <p><i>Description:</i> Cooperative project to provide the ability to visualize airspace advisories in tabular or graphic format relevant to route of flight for mission planning purposes.</p> <p><i>FY 2012 Plans:</i> Cooperative project to provide the ability to visualize airspace advisories in tabular or graphic format relevant to route of flight for mission planning purposes.</p> <p>N/A</p> <p><i>FY 2013 Base Plans:</i> Continuation of cooperative project to provide the ability to visualize airspace advisories in tabular or graphic format relevant to route of flight for mission planning purposes.</p> <p><i>FY 2013 OCO Plans:</i> N/A</p>	-	0.250	0.250	-	0.250
<p><i>Title:</i> Cultural Radar for Human Terrain Effects (AFRL and Canada)</p>	-	0.100	0.125	-	0.125

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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: Cooperative project to develop mathematical/computational models of information diffusion to characterize how information flows through a population with various types of connectivity, communication patterns, and population characteristics.</p> <p>FY 2012 Plans: Cooperative project to develop mathematical/computational models of information diffusion to characterize how information flows through a population with various types of connectivity, communication patterns, and population characteristics.</p> <p>N/A</p> <p>FY 2013 Base Plans: Continuation of cooperative project to develop mathematical/computational models of information diffusion to characterize how information flows through a population with various types of connectivity, communication patterns, and population characteristics.</p> <p>FY 2013 OCO Plans: N/A</p>					
<p>Title: Computational Multi-Scale Modeling of Explosives (AFRL and Germany)</p> <p>Description: Cooperative project to develop techniques to incorporate grain level damage mechanisms into modeling the thermo-mechanical behavior of explosive composites.</p> <p>FY 2012 Plans: Cooperative project to develop techniques to incorporate grain level damage mechanisms into modeling the thermo-mechanical behavior of explosive composites.</p> <p>N/A</p> <p>FY 2013 Base Plans: Continuation of cooperative project to develop techniques to incorporate grain level damage mechanisms into modeling the thermo-mechanical behavior of explosive composites.</p> <p>FY 2013 OCO Plans:</p>	-	0.390	0.200	-	0.200

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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: High Speed Penetrator Cases (AFRL and Germany)</p> <p>Description: Cooperative project to investigate High Speed Penetrators to determine the best means to defeat Hard and Deeply Buried Targets (HDBTs), develop and/or validate modeling and simulation tools for the analysis of weapons concepts and issues appropriate for HDBTs, and conduct research to address new warhead technologies to yield performance enhancements to warheads for penetration and survivability.</p> <p>FY 2012 Plans: Cooperative project to investigate High Speed Penetrators to determine the best means to defeat Hard and Deeply Buried Targets (HDBTs), develop and/or validate modeling and simulation tools for the analysis of weapons concepts and issues appropriate for HDBTs, and conduct research to address new warhead technologies to yield performance enhancements to warheads for penetration and survivability.</p> <p>N/A</p> <p>FY 2013 Base Plans: Continuation of cooperative project to investigate High Speed Penetrators to determine the best means to defeat Hard and Deeply Buried Targets (HDBTs), develop and/or validate modeling and simulation tools for the analysis of weapons concepts and issues appropriate for HDBTs, and conduct research to address new warhead technologies to yield performance enhancements to warheads for penetration and survivability.</p> <p>FY 2013 OCO Plans: N/A</p>	-	0.435	0.200	-	0.200
<p>Title: Team Based Metric Development in Distributed Net-Centric Operations (AFRL and UK)</p> <p>Description: Cooperative project to develop conceptual software applications which would allow the monitoring, management, and mitigation of distributed team workload and situational awareness.</p> <p>FY 2012 Plans: Cooperative project to develop conceptual software applications which would allow the monitoring, management, and mitigation of distributed team workload and situational awareness.</p>	-	0.299	0.189	-	0.189

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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 <i>FY 2013 Base Plans:</i> Cooperative project to develop conceptual software applications which would allow the monitoring, management, and mitigation of distributed team workload and situational awareness. <i>FY 2013 OCO Plans:</i> N/A					
<i>Title:</i> Surveillance by Thermal Hyperspectral Imaging (HSI) Exploitation and Validation of Technology (AFRL and Canada, UK, Australia, New Zealand) <i>Description:</i> Cooperative effort utilizing all sources of LWIR (Long-wave Infrared) HSI data to evaluate the range of products which can be derived from exploitation of the data and of this day-night surveillance capability <i>FY 2013 Base Plans:</i> Cooperative effort utilizing all sources of LWIR (Long-wave Infrared) HSI data to evaluate the range of products which can be derived from exploitation of the data and of this day-night surveillance capability <i>FY 2013 OCO Plans:</i> N/A	-	-	0.400	-	0.400
<i>Title:</i> Unmanned Aircraft Systems (UAS) Heavy Fuel Operations (AFRL and UK) <i>Description:</i> Cooperative effort to develop and demonstrate use of low octane heavy fuel (i.e.JP-8) in small Unmanned Aircraft Systems (UAS) engines as an alternative to the high octane AVGAS the currently require, but which is not logistically supported in the field. <i>FY 2013 Base Plans:</i> Cooperative effort to develop and demonstrate use of low octane heavy fuel (i.e.JP-8) in small Unmanned Aircraft Systems (UAS) engines as an alternative to the high octane AVGAS the currently require, but which is not logistically supported in the field. <i>FY 2013 OCO Plans:</i> N/A	-	-	0.310	-	0.310
<i>Title:</i> Background Oriented Schlieren Comparison (BOSComp) (AEDC and Australia)	-	-	0.100	-	0.100

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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>Description: Cooperative effort to characterize and improve Background Oriented Schlieren (BOS) flow visualization technique for use in transonic wind tunnels with limited optical access.</p>					
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<p>FY 2013 Base Plans: Cooperative effort to characterize and improve Background Oriented Schlieren (BOS) flow visualization technique for use in transonic wind tunnels with limited optical access.</p>					
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<p>FY 2013 OCO Plans: N/A</p>					
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<p>Title: GPS / Inertial / Vision Integrated Navigation System (GIVINS) (AFRL and Singapore)</p>	-	-	0.225	-	0.225
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<p>Description: Cooperative effort to develop a unique approach to vision-aided inertial navigation that is potentially simpler than existing solutions</p>					
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<p>FY 2013 Base Plans: Cooperative effort to develop a unique approach to vision-aided inertial navigation that is potentially simpler than existing solutions</p>					
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<p>FY 2013 OCO Plans: N/A</p>					
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<p>Title: Fire and Explosion Vulnerability Assessment (FEVA) AFRL, UK and Australia)</p>	-	-	0.350	-	0.350
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<p>Description: Cooperative effort to investigate and establish a common architecture for fire M&S capabilities to reduce fires & ullage explosions, which are considered main contributors to loss of platforms.</p>					
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<p>FY 2013 Base Plans: Cooperative effort to investigate and establish a common architecture for fire M&S capabilities to reduce fires & ullage explosions, which are considered main contributors to loss of platforms.</p>					
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<p>FY 2013 OCO Plans: N/A</p>					
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<p>Title: Multi-Interoperability Experiment for Enhanced ISR Applications (MIEEIA) (AFRL and Australia)</p>	-	-	0.508	-	0.508
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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: Cooperative effort to develop/implement data sharing standards; create open architecture for application collaboration; and demonstrate enhanced ISR capabilities through live exercises to allow CENTCOM and partner nations to seamlessly share data and algorithm results across networks</p> <p>FY 2013 Base Plans: Cooperative effort to develop/implement data sharing standards; create open architecture for application collaboration; and demonstrate enhanced ISR capabilities through live exercises to allow CENTCOM and partner nations to seamlessly share data and algorithm results across networks</p> <p>FY 2013 OCO Plans: N/A</p>					
<p>Title: Command and Control Information Synergy for Combined Space Operations (UNITY) (AFRL, Canada, UK and Australia)</p> <p>Description: Cooperative effort to develop, experiment, demonstrate and provide a transitionable operational capability which facilitates sharing of space C2 information and products between 4-Eyes space mission partners in accordance with the tenets of the JSpOC Mission System (JMS) and Combined Space Operations Center (CSpOC) constructs</p> <p>FY 2013 Base Plans: Cooperative effort to develop, experiment, demonstrate and provide a transitionable operational capability which facilitates sharing of space C2 information and products between 4-Eyes space mission partners in accordance with the tenets of the JSpOC Mission System (JMS) and Combined Space Operations Center (CSpOC) constructs</p> <p>FY 2013 OCO Plans: N/A</p>	-	-	0.450	-	0.450
<p>Title: SiC / SiC-UHTC Composites (AFRL and Italy)</p> <p>Description: Cooperative effort to develop hybrid fiber-reinforced silicon carbide - ultra high temperature ceramic composites and evaluate performance in arc jet and other simulated hypersonic environments</p>	-	-	0.125	-	0.125

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790F: <i>NATO Cooperative R&D</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<i>FY 2013 Base Plans:</i> Cooperative effort to develop hybrid fiber-reinforced silicon carbide - ultra high temperature ceramic composites and evaluate performance in arc jet and other simulated hypersonic environments <i>FY 2013 OCO Plans:</i> N/A					
Accomplishments/Planned Programs Subtotals	4.265	4.424	4.507	-	4.507

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

E. Acquisition Strategy

A principal goal of the NATO Cooperative R&D program is to effectively utilize the aggregate resources invested by the US and our allies in conventional defense R&D. This program element provides the critical funding incentive needed to pursue ICRD&A agreements and helps to (a) leverage USAF and allied resources through cost sharing and economies of scale; (b) exploit the best US and allied technologies for equipping coalition forces; (c) demonstrate areas of commonality or interoperability with our allies; and (d) accelerate the availability of defense technology and systems. Candidate projects are reviewed and approved by the USD(AT&L). An international agreement defining project objectives, responsibilities and costs is required prior to release of funds. To obtain these funds and ensure service commitment, projects are selected from existing or new RDT&E programs funded in the Future Years Defense Plan (FYDP). Project offices must show matching funds and contributions from associated program elements and equitable allied funding. As appropriate, funding responsibility for out-year requirements and follow-on efforts are transferred to the project office and associated program elements. Any new contracts are awarded after 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: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603790F: <i>NATO Cooperative R&D</i>		PROJECT 64NATO: <i>Nato Coop R&D</i>
Project Title	Start		End	
Development of Animal Models to Assess the Inhalation Exposure of Engineered Nanomaterials				
- Signed Agreement	1Q	2009	1Q	2009
- Research, Development, Test and Evaluation	2Q	2009	3Q	2011
- Final Report	3Q	2011	4Q	2011
Modulation of Immune Response by Inhaled Engineered Nanoparticles				
- Signed Agreement	1Q	2009	1Q	2009
- Research, Development, Test and Evaluation	2Q	2009	3Q	2011
- Final Report	3Q	2011	4Q	2011
Image Gyro				
- Signed Agreement	1Q	2009	1Q	2009
- Research, Development, Test and Evaluation	2Q	2009	3Q	2013
- Final Report	3Q	2013	4Q	2013
Durability Assessment and Probabilistic Life Prediction of Titanium Alloys				
- Signed Agreement	1Q	2009	1Q	2009
- Research, Development, Test and Evaluation	2Q	2009	3Q	2012
- Final Report	3Q	2012	4Q	2012
Aging Systems Materials and Process Technologies				
- Signed Agreement	1Q	2009	1Q	2009
- Research, Development, Test and Evaluation	2Q	2009	3Q	2013
- Final Report	3Q	2013	4Q	2013

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Exhibit R-4, RDT&E Schedule Profile: 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603790F: <i>NATO Cooperative R&D</i>	64NATO: <i>Nato Coop R&D</i>		
Military Aircraft Survivability Through Improved Composite Structures				
- Signed Agreement	1Q	2010	1Q	2010
- Research, Development, Test and Evaluation	2Q	2010	3Q	2012
- Final Report	3Q	2012	4Q	2012
Flapping Wing Micro Air Vehicle Collaborative Development				
- Signed Agreement	1Q	2010	1Q	2010
- Research, Development, Test and Evaluation	2Q	2010	3Q	2014
- Final Report	3Q	2014	4Q	2014
Ultrahigh Temperature Ceramics				
- Signed Agreement	1Q	2010	1Q	2010
- Research, Development, Test and Evaluation	2Q	2010	3Q	2013
- Final Report	3Q	2013	4Q	2013
Compact Penetrating Weapons for the Defeat of Hardened Targets				
- Signed Agreement	1Q	2010	1Q	2010
- Research, Development, Test and Evaluation	2Q	2010	3Q	2014
- Final Report	3Q	2014	4Q	2014
Dynamic Network Visualization Techniques for Cyberspace				
- Signed Agreement	1Q	2010	1Q	2010
- Research, Development, Test and Evaluation	2Q	2010	3Q	2013
- Final Report	3Q	2013	4Q	2013
Assessment of Military Operations in Urban Terrain				
- Signed Agreement	1Q	2010	1Q	2010
- Research, Development, Test and Evaluation	2Q	2010	3Q	2016
- Final Report	3Q	2016	4Q	2016
Thermal Barrier Coating Health and Turbine Temperature Sensing				
- Signed Agreement	1Q	2010	1Q	2010
- Research, Development, Test and Evaluation	2Q	2010	3Q	2012
- Final Report	3Q	2012	4Q	2012

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790F: <i>NATO Cooperative R&D</i>	PROJECT 64NATO: <i>Nato Coop R&D</i>		
Efficacy of Vibrotactile Stimulation in Simulated Operational Conditions				
- Signed Agreement	1Q	2010	1Q	2010
- Research, Development, Test and Evaluation	2Q	2010	3Q	2011
- Final Report	3Q	2011	4Q	2011
Next Generation Advanced Composite Processing Science				
- Signed Agreement	1Q	2010	1Q	2010
- Research, Development, Test and Evaluation	3Q	2010	3Q	2013
- Final Report	3Q	2013	4Q	2013
Machine Translation for International Security Assistance Force				
- Signed Agreement	1Q	2011	1Q	2011
- Research, Development, Test and Evaluation	3Q	2011	3Q	2012
- Final Report	3Q	2012	4Q	2012
Live, Virtual and Constructive Immersive Decision Making Environments				
- Signed Agreement	1Q	2011	1Q	2011
- Research, Development, Test and Evaluation	2Q	2011	3Q	2016
- Final Report	3Q	2016	4Q	2016
Robust Solid State Materials for Optical Sensors Protection				
- Signed Agreement	1Q	2011	1Q	2011
- Research, Development, Test and Evaluation	2Q	2011	3Q	2012
- Final Report	3Q	2012	4Q	2012
Common Coalition Airborne Access Portal				
- Signed Agreement	1Q	2011	1Q	2011
- Research, Development, Test and Evaluation	2Q	2011	3Q	2013
- Testing and Evaluation	3Q	2013	4Q	2013

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790F: <i>NATO Cooperative R&D</i>	PROJECT 64NATO: <i>Nato Coop R&D</i>		
Rado Frequency Modeling and Simulation for Distributed Electronic Warfare, Situational Awareness and Response				
- Signed Agreement	1Q	2011	1Q	2011
- Research, Development, Test and Evaluation	2Q	2011	3Q	2014
- Testing and Evaluation	3Q	2014	4Q	2014
Advanced Ladar and Imaging Analysis System				
- Signed Agreement	1Q	2011	1Q	2011
- Research, Development, Test and Evaluation	2Q	2011	3Q	2016
- Testing and Evaluation	3Q	2016	4Q	2016
Molecular Basis of Stress Responses Using In Vitro Neuronal Models				
- Signed Agreement	1Q	2011	1Q	2011
- Research, Development, Test and Evaluation	2Q	2011	3Q	2013
- Testing and Evaluation	3Q	2013	4Q	2013
Synthesis, Formulation and Characterization of Structural Nano-Energetics				
- Signed Agreement	1Q	2011	1Q	2011
- Research, Development, Test and Evaluation	2Q	2011	3Q	2016
- Testing and Evaluation	3Q	2016	4Q	2016

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790F: <i>NATO Cooperative R&D</i>	PROJECT 64NATO: <i>Nato Coop R&D</i>

Monitoring and Controlling Multiple Assets Within Complex Environments				
-Signed Agreement	1Q		2012 1Q	2012
- Testing and Evaluation	2Q		2012 2Q	2015
- Final Report	3Q		2015 4Q	2015
Closed Loop Alternative Navigation Demonstration				
-Signed Agreement	1Q		2012 1Q	2012
- Testing and Evaluation	2Q		2012 2Q	2015
- Final Report	3Q		2015 4Q	2015
Joint and Coalition Training, Rehearsal, and Exercise Research				
-Signed Agreement	1Q		2012 1Q	2012
- Testing and Evaluation	2Q		2012 2Q	2017
- Final Report	3Q		2017 4Q	2017
Life Prediction for Metallic Aircraft Structure				
-Signed Agreement	1Q		2012 1Q	2012
- Testing and Evaluation	2Q		2012 2Q	2013
- Final Report	3Q		2013 4Q	2013
Aero Advisory and NOTAMS tools				
-Signed Agreement	1Q		2012 1Q	2012
- Testing and Evaluation	2Q		2012 2Q	2014
- Final Report	3Q		2014 4Q	2014

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790F: <i>NATO Cooperative R&D</i>	PROJECT 64NATO: <i>Nato Coop R&D</i>

Cultural Radar for Human Terrain Effects				
-Signed Agreement	1Q		2012 1Q	2012
- Testing and Evaluation	2Q		2012 2Q	2016
- Final Report	3Q		2016 4Q	2016
Computational Multi-Scale Modeling of Explosives				
-Signed Agreement	1Q		2012 1Q	2012
- Testing and Evaluation	2Q		2012 2Q	2016
- Final Report	3Q		2016 4Q	2016
High Speed Penetrator Cases				
-Signed Agreement	1Q		2012 1Q	2012
- Testing and Evaluation	2Q		2012 2Q	2016
- Final Report	3Q		2016 4Q	2016
Team Based Metric Development in Distributed Net-Centric Operations				
-Signed Agreement	1Q		2012 1Q	2012
- Testing and Evaluation	2Q		2012 2Q	2016
- Final Report	3Q		2016 4Q	2016

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790F: <i>NATO Cooperative R&D</i>	PROJECT 64NATO: <i>Nato Coop R&D</i>

Surveillance by Thermal Hyper-Spectral Imaging Exploitation and Validation of Technology				
-Signed Agreement	1Q	2013	1Q	2013
- Testing and Evaluation	2Q	2013	4Q	2014
- Final Report	4Q	2014	4Q	2014
Unmanned Aircraft Systems (UAS) Heavy Fuel Operations				
-Signed Agreement	1Q	2013	1Q	2013
- Testing and Evaluation	2Q	2014	3Q	2014
- Final Report	4Q	2014	4Q	2014
Background Oriented Schlieren Comparasin (BOSComp)				
-Signed Agreement	1Q	2013	1Q	2013
- Testing and Evaluation	2Q	2013	3Q	2014
- Final Report	4Q	2014	4Q	2014

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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GPS/Inertial/Vision Integrated Navigation System (GIVINS)				
-Signed Agreement	1Q	2013	1Q	2013
- Testing and Evaluation	3Q	2013	2Q	2016
- Final Report	4Q	2016	4Q	2016
Fire and Explosion Vulnerability Assessment (FEVA)				
-Signed Agreement	1Q	2013	1Q	2013
- Testing and Evaluation	2Q	2013	4Q	2013
- Final Report	1Q	2014	1Q	2014
Multi-Interoperability Experiment for Enhanced ISR Applications (MIEEIA)				
-Signed Agreement	1Q	2013	1Q	2013
- Testing and Evaluation	1Q	2014	4Q	2014
- Final Report	1Q	2015	1Q	2015

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790F: <i>NATO Cooperative R&D</i>	PROJECT 64NATO: <i>Nato Coop R&D</i>
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Command and Control Information Synergy for Combined Space Operations (UNITY)				
-Signed Agreement	1Q	2013	1Q	2013
- Testing and Evaluation	1Q	2013	4Q	2014
- Final Report	4Q	2014	4Q	2014
SiC/SiC-UHTC Composites				
-Signed Agreement	1Q	2013	1Q	2013
- Testing and Evaluation	2Q	2013	4Q	2014
- Final Report	4Q	2014	4Q	2014

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790F: <i>NATO Cooperative R&D</i>	PROJECT 64NATO: <i>Nato Coop R&D</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
- Testing and Analysis (3)	1	2011	2	2011
- Final Report (3)	3	2011	4	2011
- Testing and Analysis (4)	1	2011	2	2011
- Final Report (4)	3	2011	4	2011
- Testing and Analysis (5)	1	2011	2	2011
- Final Report (5)	3	2011	4	2011
- Testing and Analysis (6)	1	2011	2	2011
- Final Report (6)	3	2011	4	2011
- Testing and Analysis (7)	1	2011	2	2011
- Final Report (7)	3	2011	4	2011
- Testing and Analysis (8)	1	2011	2	2011
- Final Report (8)	3	2011	4	2011
- Testing and Analysis (9)	1	2011	2	2011
- Final Report (9)	3	2011	4	2011
- Testing and Analysis (10)	1	2011	2	2011
- Final Report (10)	3	2011	4	2011
- Testing and Analysis (11)	1	2011	2	2011
- Final Report (11)	3	2011	4	2011
Machine Translation for International Security Assistance Force	1	2011	1	2011
- Signed Agreement (12)	2	2011	2	2011
Live, Virtual and Constructive Immersive Decision Making Environments	1	2011	1	2011
- Signed Agreement (13)	2	2011	2	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790F: <i>NATO Cooperative R&D</i>	PROJECT 64NATO: <i>Nato Coop R&D</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
- Test and Evaluation	2	2011	4	2011
Robust Solid State Materials for Optical Sensors Protection	1	2011	1	2011
- Signed Agreement (14)	2	2011	2	2011
- Testing and Evaluation	2	2011	4	2011
Common Coalition Airborne Access Portal	1	2011	1	2011
- Signed Agreement (15)	2	2011	2	2011
- Testing and Evaluation (1)	2	2011	4	2011
Rado Frequency Modeling and Simulation for Distributed Electronic Warfare, Situational Awareness and Response	1	2011	1	2011
- Signed Agreement (16)	2	2011	2	2011
- Test and Evaluation (1)	2	2011	4	2011
Advanced Ladar and Imaging Analysis System	1	2011	1	2011
- Signed Agreement (17)	2	2011	2	2011
- Testing and Evaluation (2)	2	2011	4	2011
Molecular Basis of Stress Responses Using In Vitro Neuronal Models	1	2011	1	2011
- Signed Agreement (18)	2	2011	2	2011
- Testing and Evaluation (3)	2	2011	4	2011
Synthesis, Formulation and Characterization of Structural Nano-Energetics	1	2011	1	2011
- Signed Agreement (19)	2	2011	2	2011
- Testing and Evaluation (4)	2	2011	4	2011
Monitoring and Controlling Multiple Assets Within Complex Environments	1	2012	4	2015
Closed Loop Alternative Navigation Demonstration	1	2012	4	2015
Joint and Coalition Training, Rehearsal, and Exercise Research	1	2012	4	2017
Life Prediction for Metallic Aircraft Structure	1	2012	4	2013
Aero Advisory and NOTAMS tools	1	2012	4	2014
Cultural Radar for Human Terrain Effects	1	2012	4	2016

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790F: <i>NATO Cooperative R&D</i>	PROJECT 64NATO: <i>Nato Coop R&D</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Computational Multi-Scale Modeling of Explosives	1	2012	4	2016
High Speed Penetrator Cases	1	2012	4	2016
Team Based Metric Development in Distributed Net-Centric Operations	1	2012	4	2016
Surveillance by Thermal Hyper-Spectral Imaging Exploitation and Validation of Technology	1	2013	4	2014
Unmanned Aircraft Systems (UAS) Heavy Fuel Operations	1	2013	4	2014
Background Oriented Schlieren Comparasin (BOSComp)	1	2013	4	2014
GPS/Inertial/Vision Integrated Navigation System (GIVINS)	1	2013	4	2016
Fire and Explosion Vulnerability Assessment (FEVA)	1	2013	1	2014
Multi-Interoperability Experiment for Enhanced ISR Applications (MIEEIA)	1	2013	1	2015
Command and Control Information Synergy for Combined Space Operations (UNITY)	1	2013	4	2014
SiC/SiC-UHTC Composites	1	2013	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603791F: <i>International Space Cooperative R&D</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	0.581	0.615	0.652	-	0.652	0.661	0.674	0.692	0.702	Continuing	Continuing
645035: <i>Intl Space Coop R&D</i>	0.581	0.615	0.652	-	0.652	0.661	0.674	0.692	0.702	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

These funds will be used to initiate space-related international cooperative research, and development (ICR&D) agreements with North Atlantic Treaty Organization (NATO) member states, major non-NATO allies and friendly foreign countries. Each of the selected programs and projects are required to have a concluded IA, prior to funds being released, that implements the provisions of Title 10 U.S. Code, Section 2350a. The legislation (Title 10 U.S. Code, Section 2350) authorizes funds to significantly improve U.S. and allied conventional defense capabilities by leveraging the best defense technologies, eliminating costly duplication of R&D efforts, accelerating the availability of defense systems, and promoting US and allied interoperability or commonality. These funds will not be used for government civilian salaries, permanent construction, or spent overseas. This program element funds the implementation of Air Force ICR&D agreements in (1) Basic Research (2) Applied Research (3) Advanced Technology Development (4) Advanced Component Development and Prototypes (5) System Development and Demonstration and (6) RDT&E Management Support.

This PE is designated in Budget Activity 4 because most of the ICR&D projects support specific systems, include all efforts necessary to evaluate integrated technologies in as realistic an operating environment as possible to assess the performance or cost reduction potential of advanced technology, and help expedite technology transition from the laboratory to operational use. These funds are not to be used for civilian salaries or the construction of permanent facilities.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	0.635	0.642	0.651	-	0.651
Current President's Budget	0.581	0.615	0.652	-	0.652
Total Adjustments	-0.054	-0.027	0.001	-	0.001
• Congressional General Reductions	-	-0.027			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.018	-			
• Other Adjustments	-0.036	-	0.001	-	0.001

Change Summary Explanation

FY11: Cong General Reductions -0.036, Cong Directed Reductions 0.0, Cong Adds 0.0, Cong Directed Transfers 0.0 are shown in Other Adjustments Row

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

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: Post Mission Analysis of High Frequency (HF) Radar</p> <p>Description: Post Mission Analysis of High Frequency (HF) Radar (AFSPC and Australia).</p> <p>FY 2011 Accomplishments: Cooperative project with Australia to demonstrate the potential of improved Ballistic Missile Defense and warning applications by fusing Overhead Persistent Infrared Radar data and Australia's High Frequency Radar component technologies/data.</p> <p>FY 2012 Plans: Continuation of cooperative project with Australia to demonstrate the potential of improved Ballistic Missile Defense and warning applications by fusing Overhead Persistent Infrared Radar data and Australia's High Frequency Radar component technologies/data.</p> <p>N/A</p>	0.350	0.306	-	-	-
<p>Title: Ionospheric Effects on Intel, Surveillance and Reconnaissance, Space Situational Awareness and Defensive Counterspace</p> <p>Description: Ionospheric Effects on Intel, Surveillance and Reconnaissance, Space Situational Awareness and Defensive Counterspace (AFSPC and UK)</p> <p>FY 2011 Accomplishments: Cooperative effort with the United Kingdom to increase capabilities to users of current and future military systems adversely affected by the ionosphere</p> <p>FY 2012 Plans: Cooperative effort with the United Kingdom to increase capabilities to users of current and future military systems adversely affected by the ionosphere</p> <p>FY 2013 Base Plans: continuation of cooperative effort with the United Kingdom to increase capabilities to users of current and future military systems adversely affected by the ionosphere</p> <p>FY 2013 OCO Plans:</p>	0.231	0.309	0.352	-	0.352

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603791F: <i>International Space Cooperative R&D</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: Nanosatellites Plug and Play Architectures II (NAPA II) Description: Cooperative effort with Sweden to develop joint nano-satellite based on plug-and-play architecture with synthetic aperture radar (SAR) payload; Development of "push-button" toolflows integrating ground, user, and launch segments for "designer" nanosatellites FY 2013 Base Plans: Cooperative effort with Sweden to develop joint nano-satellite based on plug-and-play architecture with synthetic aperture radar (SAR) payload; Development of "push-button" toolflows integrating ground, user, and launch segments for "designer" nanosatellites FY 2013 OCO Plans: N/A	-	-	0.100	-	0.100
Title: Hyper-Temporal Imaging (HTI) Exploitation and Validation of Technology Description: Cooperative effort with Australia to explore future use of HTI systems for early missile detection and persistent surveillance; Exploit HTI data sets to evaluate range of surveillance products; and demonstrate military utility of AFRL HTI space experiment through integrated tests & exercises FY 2013 Base Plans: Cooperative effort to explore future use of HTI systems for early missile detection and persistent surveillance; Exploit HTI data sets to evaluate range of surveillance products; and demonstrate military utility of AFRL HTI space experiment through integrated tests & exercises " FY 2013 OCO Plans: N/A	-	-	0.200	-	0.200
Accomplishments/Planned Programs Subtotals	0.581	0.615	0.652	-	0.652

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	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603791F: <i>International Space Cooperative R&D</i>
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E. Acquisition Strategy

A principal goal of the International Space Cooperative R&D program is to effectively utilize the aggregate resources invested by the US and our allies in space-related R&D. This program element provides the critical funding incentive needed to pursue space-related ICRD&A agreements and helps to (a) leverage USAF and allied resources through cost sharing and economies of scale; (b) exploit the best US and allied technologies for equipping coalition forces; (c) demonstrate areas of commonality or interoperability with our allies; and (d) accelerate the availability of defense technology and systems. Candidate projects are reviewed and approved by the USD(AT&L). An international agreement defining project objectives, responsibilities and costs is required prior to release of funds. To obtain these funds and ensure service commitment, projects are selected from existing or new space-related RDT&E programs funded in the Future Years Defense Plan (FYDP). Project offices must show matching funds and contributions from associated program elements and equitable allied funding. As appropriate, funding responsibility for out-year requirements and follow-on efforts are transferred to the project office and associated program elements. Most contracts are awarded after 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: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603791F: <i>International Space Cooperative R&D</i>	PROJECT 645035: <i>Intl Space Coop R&D</i>

ICR&D Project	Fiscal Year	Start Date	End IA	PE
Post Mission Analysis of High Frequency (HF) Radar (AFSPC and Australia).	FY11	2011	2015	63791F
Ionospheric Effects on Intel, Surveillance and Reconnaissance, Space Situational Awareness and Defensive Counterspace (AFSPC and UK)	FY12	2012	2017	63791F
Nanosatellites and Plug and Play Architectures II (NAPA II)	FY13	2012	2017	63791F
Hyper-Temporal Imaging (HTI) Exploitation and Validation of Technology	FY13	2012	2017	63791F

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603791F: <i>International Space Cooperative R&D</i>	PROJECT 645035: <i>Intl Space Coop R&D</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Post Mission Analysis of High Frequency Radar - Overhead Persistent Infrared Data Fusion Experiments for Early Launch Detection and Tracking	1	2011	1	2011
- Technical Development	1	2011	4	2011
Ionospheric Effects on Intel, Surveillance and Reconnaissance, Space Situational Awareness and Defensive Counterspace	1	2012	4	2017
-Signed Agreement	1	2012	1	2012
-Research, Development, Test, and Evaluation	2	2012	3	2017
Final Report	3	2017	4	2017
Nanosatellites and Plug and Play Architectures II (NAPA II)	1	2013	4	2015
---signed agreement	2	2013	2	2013
---testing and evaluation	3	2013	4	2014
----final report	4	2014	4	2015
Hyper-Temporal Imaging (HTI) Exploitation and Validation of Technology	1	2013	4	2017
agreement development and signature	1	2013	2	2013
testing and evaluation	2	2013	4	2017
final report completion	4	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: *Research, Development, Test & Evaluation, Air Force*
 BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE
 PE 0603830F: *Space Protection Program*

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	8.306	7.299	10.429	-	10.429	11.464	12.492	12.840	13.010	Continuing	Continuing
64A025: <i>Space Protection Program</i>	8.306	7.299	10.429	-	10.429	11.464	12.492	12.840	13.010	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Growing dependence on space and demonstrated vulnerabilities have highlighted the need to actively plan for and respond to threats against national security space effects and deliver informed options to national leaders and system acquirers. Due to the asymmetric nature of the threat environment, it is increasingly imperative that the Nation take quick action to remain ahead of threats and progressively evolve our approach as those threats evolve.

In response to these needs, the AF and National Reconnaissance Office (NRO) formed a strategic partnership and leveraged a combination of Department of Defense (DoD) and Office of the Director of National Intelligence (ODNI) resources in March 2008 to establish and execute the Space Protection Program (SPP); a joint, enduring program to develop and execute an integrated protection approach for the Nation covering all defense, intelligence, civil, commercial and allied space systems. The SPP is a core protection competency that unifies and integrates AF, NRO, DoD and Intelligence Community (IC) activities to deliver strategic recommendations and options to senior leaders and inform their decisions on how best to protect our space systems and stay ahead of an increasingly sophisticated threat environment.

The DoD/AF portion of this program is consolidated under a dedicated Program Element Code to: streamline DoD SPP activities under a single appropriation; clearly categorize/convey the DoD investment in SPP; and provide visibility/transparency to AF, DoD, Congress and other offices with equities in space protection. A fully-functioning SPP effort allows for the active planning, comprehensive analysis and timely delivery of products, tools and recommendations to respond to threats against national security space effects and deliver independent and informed options to national leaders and system acquirers. This includes the key element of providing Combatant Commanders (COCOM) a range of mitigation options which are cross-domain, integrated and aimed at preserving space effects for warfighting missions.

The FY13 President's Budget request represents a minimum level required to operate and execute a synchronized and effective space protection effort for the Nation. The FY13 request preserves the skill-set, knowledge base and multi-organizational construct required to remain ahead of threats and to evolve programmatic direction and Concept of Operations (CONOPS) across multiple orbital regimes in a way that minimizes duplication and inefficiency. To that end, SPP will provide a central focus for unifying and integrating Title 10/50 roles and responsibilities (AF and NRO efforts) to deliver research, analysis, studies, tools and capabilities necessary to identify, prioritize, and develop the most effective and economical recommendations for space protection options to preserve national space capabilities and guide/influence future requirements, acquisitions, Science and Technology (S&T) research and investment focus areas.

Specifically, SPP's FY13 efforts involve a diligent focus on identifying/defining threats, determining National Security Space (NSS) vulnerabilities to clarify threat impacts and developing corresponding opportunities to reduce or altogether mitigate the threats. This will involve dedicated protection program activities centered on Ops Engagement, development/refinement of specific protection measures coming out of technical vulnerability assessments, instituting key cyber initiatives for

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603830F: <i>Space Protection Program</i>

space protection, completing the delivery/transition of the space capabilities and interdependencies database, coordinating strategic space protection communication strategies, and specific engagement in Indications & Warning (I&W) and Space Situational Awareness (SSA) architecture assessments/modeling.

SPP's focus on Ops Engagement provides unique space protection analytic capabilities to support the COCOM's ability to prepare to operate in a degraded space environment; providing analyses of COCOM space dependencies, vulnerabilities and consequence of loss, and the ability to develop and test mitigation options for evaluation in COCOM exercises. SPP will provide space protection subject matter experts and analysis to participate in all phases of crucial exercises and wargames; improving the validity of event and influencing future requirements, acquisitions, budgets and operations. The program will then leverage the key conclusions and recommendations coming out of each of these events to develop recommended courses of action (COAs) such as those outlined in the WARNORD for Space Operations, CONOPS, Tactics Techniques & Procedures (TTPs) and strategic protection strategies (based on additional SPP research, analysis and validation).

SPP intends to continue its efforts to deliver operational warfighting capabilities that attribute and defeat attacks on space systems through specific, focused defense initiatives which maintain our inherent right of self defense in space and deny the benefit of attack to our adversaries. The program also plans to expand its focus to include assessments of non-space related effects that would ensure the survivability of space assets and institute key defense initiatives to address vulnerabilities in multiple orbit regimes. Cyber effects will become a larger focus of SPP, and the program will focus on the delivery of tools and capabilities to the operational community within the DOD and the IC; further integrating cyberspace into the National Infrastructure Protection Framework. SPP will make recommendations to improve and operationalize a limited set of cyber capabilities in 2013, and will continue to investigate other utilities and opportunities in the years that follow.

SPP will continue to leverage resident space protection intelligence expertise to identify and anticipate threats to space systems. Key efforts in this area include analysis and inputs to provide specific detailed direction to intelligence agencies on crucial intelligence data collection/analysis and providing comprehensive and accurate threat impact assessments.

In coordination with NRO and AFSPC acquisition and requirements communities, SPP will perform analyses and assessments to identify options to enhance the survivability and effectiveness of specific architectures. SPP will work with the community to build integrated architectures for I&W and SSA in order to develop recommendations to support requirement development, budget formulation, and/or technical performance requirements across Title 10/50 organizations.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603830F: <i>Space Protection 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	8.349	9.819	10.410	-	10.410
Current President's Budget	8.306	7.299	10.429	-	10.429
Total Adjustments	-0.043	-2.520	0.019	-	0.019
• Congressional General Reductions	-	-0.020			
• Congressional Directed Reductions	-	-2.500			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.043	-	0.019	-	0.019

Change Summary Explanation

FY11: -\$0.043M for Congressional General Reductions.
 FY12: -\$2.5M for Congressional Directed Reduction, excess to need.
 FY12: -\$0.020M for Congressional General Reductions.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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Title: Program Objectives Support	5.742	5.515	8.122
Description: Space Protection/Security Systems & Capabilities			
FY 2011 Accomplishments: Identified, prioritized, and developed recommendations for space protection options to guide future Science and Technology (S&T) research and investment focus areas. Compiled and analyzed US National Security systems/capabilities (current and future) for decision makers. Continued development of alternative futures support to provide senior space leaders insights and recommendations on how space activities shape the strategic environment.			
FY 2012 Plans: Identify, prioritize, and develop recommendations for space protection operations to guide future Science and Technology (S&T) research and investment focus areas. Compile and analyze US National Security systems/capabilities (current and future) for decision makers. Develop alternative futures support to provide senior space leaders insights and recommendations on how space activities shape the strategic environment. Complete the delivery/transition of the space capabilities and interdependencies database. Support development of updated National Space Protection Policy.			
FY 2013 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603830F: <i>Space Protection Program</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Identifying/defining the threat, determining National Security Space (NSS) vulnerabilities to clarify threat impacts and developing corresponding opportunities to reduce or altogether mitigate the threat. Involves dedicated protection program activities centered on Ops Engagement, development/refinement of specific protection measures coming out of technical vulnerability assessments, instituting key cyber initiatives for space protection, coordinating strategic space protection communication strategies, and specific engagement in Indications & Warning (I&W) and Space Situational Awareness (SSA) architecture assessments/modeling.				
Title: Oversight/advisory Support		1.761	1.215	1.555
Description: Provide oversight, advisory and other technical support to the Space Protection Program.				
FY 2011 Accomplishments: Provided oversight, advisory and other technical support to the Space Protection Program.				
FY 2012 Plans: Provide oversight, advisory and other technical support to the Space Protection Program.				
FY 2013 Plans: Provides for the program's key management/oversight and advisory support as well as technical support in day-to-day and strategic programming/planning activities. Includes essential levels of security, PPBE, program control, personnel management, administrative, policy, and senior technical advisor support to sustain the program.				
Title: Program support/infrastructure		0.803	0.569	0.752
Description: Provide program support and infrastructure.				
FY 2011 Accomplishments: Provided program support and infrastructure.				
FY 2012 Plans: Provide program support and infrastructure.				
FY 2013 Plans: Provide for program support and infrastructure operating costs to include facilities, government travel, internal/external computer systems, and general supplies & equipment.				
Accomplishments/Planned Programs Subtotals		8.306	7.299	10.429

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603830F: <i>Space Protection Program</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>
• 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

All contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible. The program consists of numerous 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: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603830F: <i>Space Protection Program</i>	PROJECT 64A025: <i>Space Protection Program</i>

SPACE PROTECTION PROGRAM (SPP) SCHEDULE

ACTIVITY/EVENT	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Ops Engagement Wargames & Exercises	Planning, Participation and Course-of-Action Implementation for at Least Two Primary Events per FY						
COCOM Engagement/ Support	Delivery of Tailored COCOM Products (i.e. Consequence of Loss Analyses, M SM, Threat-Specific Mitigation Option Analyses, etc.)						
Technical Assessment Studies	C2	PNT	Cyber				
Protection Measures Development & Integration	Two Protection Measures Developed and Fully Incorporated and Designed to Impact Budgets/Acquisitions, Requirements or Operations Each FY						
Vulnerability Assessments & Evaluations	Focused Assessments & Evaluations for programs and systems that support critical mission areas as defined by the NCA and COCOMs (1 per FY)						
Cyber & Defense Protection Initiatives	Delivery of Tools & Effects to Defend Leo Assets		Ongoing Engagement/Support of Key Initiatives (Avg of 1 key initiative delivery every 16-18 months)				
Delivery of the space capabilities and interdependencies database	Initial Delivery in FY12 with No Add'l Activity						
Event & Program-Specific Strategic Communications	As required to support major events, launches or programs (avg 1 per yr) -- de-scoped beginning in FY12 due to reduced funding						
National Space Protection Strategy							
Intelligence Analysis & Integration	3-5 Focused Inputs To Intel Agencies for Data Collection & Analysis Per FY /						
Architecture Analyses and Assessments		◆	◆	◆	◆	◆	◆

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603830F: <i>Space Protection Program</i>	PROJECT 64A025: <i>Space Protection Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Wargame & Exercises (planning, participation, and COA implementation)	1	2011	4	2017
COCOM Analytical Engagement/Support (tailored products and threat-specific options)	3	2011	4	2017
Technical Assessment Studies (Assured C2, PNT, Cyber)	1	2011	4	2012
2017 Protection Measures Development & Integration (from validated vulnerability assessment results)	1	2012	1	2017
Vulnerability Assessments & Evaluations	3	2012	2	2017
Cyber & Defense Protection Initiatives	2	2011	4	2017
Capabilities & Interdependencies Database Delivery	1	2011	4	2012
Event & Program Strategic Communications	1	2011	4	2017
National Space Protection Strategy (bi-annual delivery in even FYs)	1	2011	4	2017
Intelligence Analysis & Integration	1	2011	4	2017
Architecture Analysis & Assessments	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603850F: <i>Integrated Broadcast Service (DEM/VAL)</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	20.396	20.046	19.938	-	19.938	20.389	20.799	21.255	22.393	Continuing	Continuing
644778: <i>Integrated Broadcast Service</i>	20.396	20.046	19.938	-	19.938	20.389	20.799	21.255	22.393	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Integrated Broadcast Service (IBS) fulfills the warfighter's requirements for worldwide threat warning and situational awareness information with timely production and simultaneous dissemination of Intelligence, Surveillance, and Reconnaissance (ISR) derived combat information. It also provides target tracking data to support threat avoidance, targeting, force protection, and situational awareness. This information is continually refined in near real time by strategic, operational and tactical sensors.

This PE funds/has previously funded IBS system development as described below:

- A Common Interactive Broadcast (CIB) on UHF satellite channel using a Common Message Format (CMF) and a MIL-STD Demand Assigned Multiple Access (DAMA) compliant waveform and Line of Sight (LOS) using the Wideband Networking Waveform (WNW) and Joint Tactical Terminal (JTT).
- IBS-Network Services (IBS-NS) includes two Global IBS Network Servers (GINS) and four Theater Interface Nodes (TINs) to support the geographic Combatant Commanders; all built to validated warfighter requirements.
 - Two GINS that receive data from each theater and integrate this data into a worldwide picture available to all network/broadcast users.
 - Four regional TINs, where out-of-theater (and local) users not directly receiving the broadcast can receive the information broadcast on the CIB. Additionally, the TIN will receive and inject data into the CIB for producers without access to the theater CIB.
- An XML-based Common Message Format (CMF) Data Element Dictionary (DED) that defines IBS messages for broadcast of IBS information over available communications paths including the CIB and other Global Information Grid (GIG) networks.
- A Modular Advanced TRanslation Interchange with XML (MATRIX) Reformatter that provides a modular, platform-independent, multi-use translator to support migration with legacy radios and provide a long term solution for IBS Full Operational Capability (FOC) radio users.

Funds the development of an evolving suite of interoperable planning and decision support capabilities comprised of software, hardware and communication 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.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603850F: <i>Integrated Broadcast Service (DEM/VAL)</i>
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Activities also include studies and analysis to support both current program planning and execution and future program planning.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	20.580	20.046	19.901	-	19.901
Current President's Budget	20.396	20.046	19.938	-	19.938
Total Adjustments	-0.184	-	0.037	-	0.037
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.184	-	0.037	-	0.037

Change Summary Explanation

FY11: -\$184K for Congressional General Reduction.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: Systems Engineering</p> <p>Description: Provide systems engineering support and development of architectures for the IBS-NS.</p> <p>FY 2011 Accomplishments: Continued systems engineering support and development of architectures for the IBS-NS.</p> <p>FY 2012 Plans: Continue systems engineering support and development of architectures for the IBS-NS.</p> <p>FY 2013 Plans: Will continue systems engineering support and development of architectures for the IBS-NS.</p>	0.438	0.378	0.378
<p>Title: IBS-NS (GINS/TINs) Development</p> <p>Description: Continue the Phase II/System Development and Demonstration of the GINS and TINs efforts.</p> <p>FY 2011 Accomplishments:</p>	13.374	15.382	16.777

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603850F: <i>Integrated Broadcast Service (DEM/VAL)</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Continued development, integration and testing of the Spiral 4 GINS and TINs capabilities. FY 2012 Plans: Continue the integration and testing of the Spiral 4 release of the GINS and TINs capabilities. Initiate advanced development of Spiral 4 capabilities. FY 2013 Plans: Will continue the integration and testing of the Spiral 4 release of the GINS and TINs efforts. Will transition Spiral 4 IBS-NS capability to sustainment. Will complete advanced development of Spiral 4 release of GINS and TINs.				
Title: Test & Evaluation Description: Continue Test & Evaluation of the IBS system. FY 2011 Accomplishments: Continued Test & Evaluation efforts. FY 2012 Plans: Conduct Integrated Test #1 and IBS Multi-Service Operational Test & Evaluation (MOT&E) FY 2013 Plans: Will continue Test and Evaluation		1.295	1.910	0.918
Title: Enterprise Systems Eng Description: Enterprise Systems Engineering/CMF Integration/CIB Integration FY 2011 Accomplishments: Continued Enterprise Systems Engineering/CMF Integration/CIB Integration efforts. FY 2012 Plans: Conduct Enterprise Systems Engineering/CMF Integration/CIB Integration efforts. FY 2013 Plans: Will continue Enterprise Systems Engineering/CMF Integration/CIB Integration efforts.		0.700	0.700	0.700
Title: System Program Office		1.415	1.676	1.165

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603850F: <i>Integrated Broadcast Service (DEM/VAL)</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Description: Maintain a Program Mgmt Office, including program supervision, finance and acquisition strategy execution.</p> <p>FY 2011 Accomplishments: Maintained a Program Mgmt Office, including program supervision, finance and acquisition strategy execution.</p> <p>FY 2012 Plans: Maintain a Program Mgmt Office, including program supervision, finance and acquisition strategy execution.</p> <p>FY 2013 Plans: Maintain a Program Mgmt Office, including program</p>			
<p>Title: CIB (IW Phase 2 Controller)</p> <p>Description: Integrate and test capability that implements allocation of Satellite Communicatons (SATCOM) resources based on established policy/rules</p> <p>FY 2011 Accomplishments: Integrated and tested capability that implements allocation of SATCOM resources based on established policy/rules</p>	1.874	-	-
<p>Title: CIB Engineering/Testing</p> <p>Description: Provide Common Interactive Broadcast (CIB) Engineering Testbed and CIB-related engineering/testing support.</p> <p>FY 2011 Accomplishments: Provided Common Interactive Broadcast (CIB) Engineering Testbed and CIB-related engineering/testing support.</p>	1.300	-	-
Accomplishments/Planned Programs Subtotals	20.396	20.046	19.938

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
• OPAF, PE 0305179F, Integrated Br...: <i>Integrated Broadcast Service (IBS)</i>	12.542	9.993	13.095	0.000	13.095	10.121	11.180	10.205	10.393	Continuing	Continuing
• O&M, PE 0305179F, Integrated...: <i>Integrated Broadcast Service (IBS)</i>	17.106	19.559	28.391	0.000	28.391	24.389	18.935	18.810	19.185	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: *Research, Development, Test & Evaluation, Air Force*
BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE

PE 0603850F: *Integrated Broadcast Service (DEM/VAL)*

E. Acquisition Strategy

IBS used an evolutionary acquisition approach with a Program Definition/Risk Reduction phase (Spiral 1), followed by a full and open competition award to BTG/Titan/L-3Comm/L-3 Stratis to complete the Engineering, Manufacturing and Development (EMD) phase (Spiral 2-4).

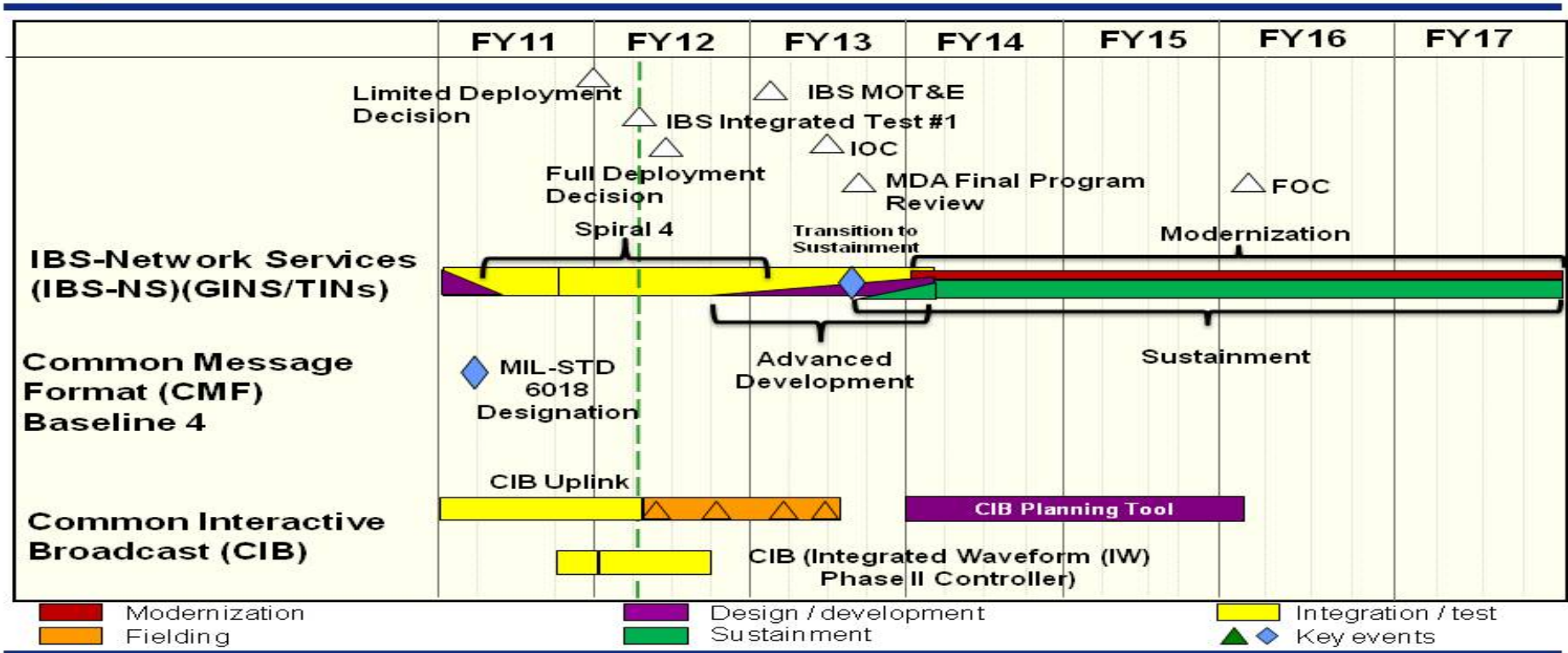
F. Performance Metrics

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 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603850F: Integrated Broadcast Service (DEM/VAL)	PROJECT 644778: Integrated Broadcast Service



IBS Broadcast Segment Schedule



FY13 PB RDOCs

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603850F: <i>Integrated Broadcast Service (DEM/VAL)</i>	PROJECT 644778: <i>Integrated Broadcast Service</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CMF MIL-STD 6018 Designation	1	2011	1	2011
IBS-NS (GINS/TINS) Development/Integration/Testing	1	2011	3	2013
CIB (IW Controller Phase II Controller)	4	2011	3	2012
CIB Uplink Integration/Testing	1	2011	1	2012
CIB Uplink Fielding	1	2012	3	2013
IBS-NS (GINS/TINS) Limited Deployment Decision	1	2012	1	2012
IBS Integrated Test #1	2	2012	2	2012
IBS-NS (GINS/TINS) Full Deployment Decision	2	2012	2	2012
IBS MOT&E	1	2013	1	2013
Advanced Development of Spiral 4 IBS-NS capability	4	2012	1	2014
IOC	2	2013	2	2013
MDA Final Program Review	3	2013	3	2013
IBS-NS (GINS/TINS) Transition to Sustainment	3	2013	3	2013
CIB Planning Tool Development	1	2014	1	2016
Modernization of IBS-NS	1	2014	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</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	67.242	69.436	71.181	-	71.181	69.801	61.722	63.255	64.058	Continuing	Continuing
641020: <i>ICBM Guidance Applications</i>	14.585	14.303	14.522	-	14.522	14.713	15.023	15.441	15.645	Continuing	Continuing
641021: <i>ICBM Propulsion Applications</i>	41.557	44.308	44.959	-	44.959	45.688	46.699	47.814	48.413	Continuing	Continuing
641022: <i>ICBM Reentry Vehicle Applications</i>	5.331	5.738	-	-	-	-	-	-	-	Continuing	Continuing
641023: <i>Rocket System Launch Program</i>	0.023	0.025	-	-	-	-	-	-	-	Continuing	Continuing
641025: <i>Ground Based Strategic Deterrence (GBSD)</i>	-	-	11.700	-	11.700	9.400	-	-	-	Continuing	Continuing
644209: <i>Long Range Planning (LRP)</i>	5.746	5.062	-	-	-	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program ensures a responsive design and development engineering infrastructure to address emerging issues and technology insertion within the current Intercontinental Ballistic Missile (ICBM), future strategic systems/capability, and other common strategic mission areas, where appropriate, to develop enhanced multi-use capabilities. Efforts identify methods to reduce life cycle costs, improve nuclear safety and surety, and ensure strategic missile viability. Demonstration and validation projects include guidance applications, propulsion applications, reentry vehicles, development of enhanced command/control capabilities, rocket system launch program efforts, long range planning efforts, and Ground Based Strategic Deterrence (GBSD).

BA4 - This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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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 0603851F: <i>ICBM - DEM/VAL</i>
BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	66.745	67.202	67.838	-	67.838
Current President's Budget	67.242	69.436	71.181	-	71.181
Total Adjustments	0.497	2.234	3.343	-	3.343
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	2.500			
• Congressional Directed Transfers	-	-			
• Reprogrammings	3.000	-			
• SBIR/STTR Transfer	-1.925	-			
• Other Adjustments	-0.578	-0.266	3.343	-	3.343

Change Summary Explanation

FY2011 includes an AF-sourced \$3M adjustment to support Minuteman III follow-on pre-Materiel Solution Analysis Phase activities; FY2012 adjustments include \$2.5M Cong Add; FY13 adjustments reflect a \$5.899M reduction to ICBM Reentry Vehicle Applications, a \$2.560M reduction to Long Range Planning, and a \$0.025M reduction to Rocket System Launch Program for higher AF priorities and an increase of \$11.7M for GBSD.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>				PROJECT 641020: <i>ICBM Guidance Applications</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
641020: <i>ICBM Guidance Applications</i>	14.585	14.303	14.522	-	14.522	14.713	15.023	15.441	15.645	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Guidance Applications Program ensures the development of strategic capability in response to the Nuclear Posture Review, recommendations of the United States Strategic Command (USSTRATCOM) Strategic Advisory Group, USSTRATCOM Commander guidance, and the Defense Science Board Task Force on Nuclear Deterrence. Efforts are focused on current and future requirements and technologies, reduced life cycle costs, and increased nuclear surety and safety. Activities leverage the efforts of the Science and Technology community and are coordinated with the Navy strategic application program to enhance synergy and avoid duplication. Key elements include developing responsive technologies with common applications for future strategic guidance capabilities.

BA4 - This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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

	FY 2011	FY 2012	FY 2013
Title: Guidance Applications	14.585	14.303	14.522
Description: Develop, in coordination with the Navy, advanced guidance technology such as solid-state instruments, with higher reliability.			
FY 2011 Accomplishments: Developed, prototyped, and tested solid-state instrument technologies (accelerometers, gyros and advanced solid-state inertial measurement unit concepts). Assessed, developed, and implemented test options to demonstrate future system concepts. Completed build and test of Advanced Inertial Measurement Unit (AIMU) engineering model 2 (EM2) which incorporates the solid state strategic gyro and accelerometer and completed first AIMU prototype design.			
FY 2012 Plans: Continue to develop, prototype, and test advanced guidance technologies, such as solid-state instruments (accelerometers, gyros and advanced inertial measurement unit concepts). Continue assessment, evaluation, and test of radiation hard electronics for Air Force advanced strategic guidance applications. Continue to conduct experiments to demonstrate future strategic system concepts. Develop, assess, and implement AIMU EM2 testing and protoqual design and build. Complete Rad Hard qualification unit builds and radiation testing. Conduct AIMU sled test and flight test planning.			
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641020: <i>ICBM Guidance Applications</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Continue to develop, prototype, and test advanced guidance technologies, such as solid-state instruments (accelerometers, gyros and advanced inertial measurement unit concepts). Continue assessment, evaluation, and test of radiation hard electronics for strategic guidance applications. Continue to conduct experiments to demonstrate future strategic system concepts. Develop, implement and assess AIMU sled and flight tests.			
Accomplishments/Planned Programs Subtotals	14.585	14.303	14.522

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

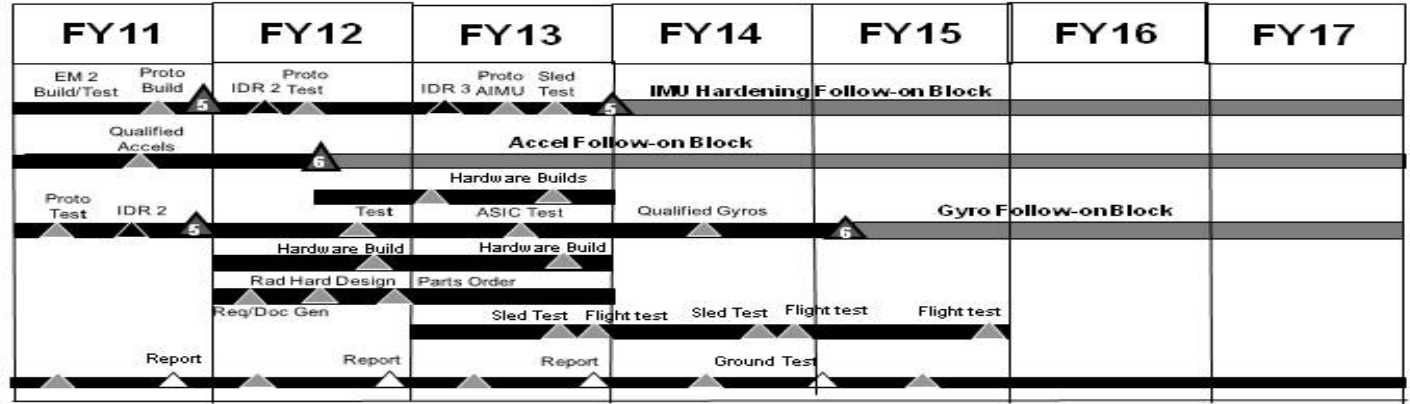
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• None.: <i>N/A</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy
Accomplish studies, analyses, and engineering/pre-prototype hardware development; efforts will be conducted using contracting strategies deemed most appropriate, generally using competitive 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-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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641020: <i>ICBM Guidance Applications</i>



- GAP**
- AIMU Development
 - Develop and prototype instrument technologies:
 - SRBA
 - Build to support AIMU
 - SFOG
 - Build to support AIMU
 - Initiate Weapons level hardening
 - Flight/Sled Tests
 - Rad Hard Electronics

- ▲ Design Review
- ▲ Tech Readiness Level
- ▲ Final Report Milestone
- ▲ Interim Milestone

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641020: <i>ICBM Guidance Applications</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
IMU Test Hardware Deliveries	1	2011	4	2013
IMU Tests	2	2011	3	2013
IMU Design Reviews	1	2012	2	2013
Gyro/Accelerometer Prototype Build EM2	1	2011	4	2013
Gyro/Accelerometer Design Reviews EM2	1	2012	3	2013
Gyro/Accelerometer Tests EM2	3	2012	4	2013
Rad-Hard Electronics Testing	1	2011	3	2015
Flight/Sled Tests	3	2013	4	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>				PROJECT 641021: <i>ICBM Propulsion Applications</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
641021: <i>ICBM Propulsion Applications</i>	41.557	44.308	44.959	-	44.959	45.688	46.699	47.814	48.413	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Intercontinental Ballistic Missile (ICBM) Propulsion Application Program develops strategic propulsion capability through projects exploring improvements and/or alternatives to current propulsion systems, conducting studies assessing application of new technologies to meet future common propulsion system requirements, assessing opportunities for applying common materials and technology between the ICBM, submarine-launched ballistic missile (SLBM) propulsion systems, and other solid rocket motor propulsion capabilities to demonstrate a potential family of motors capability.

BA4 - This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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

	FY 2011	FY 2012	FY 2013
Title: Propulsion Application Program	41.557	44.308	44.959
Description: Assess, develop, evaluate, and demonstrate common solid and liquid propulsion technology and manufacturing leading up to static fires and/or a flight test. Develop strategic propulsion capability and explore improvements to current systems. Supports the research and development industrial base and critical infrastructure			
FY 2011 Accomplishments: Supported the Solid Rocket Motor (SRM) research and development industrial base and critical infrastructure. Continued assessment and demonstration of ordnance and post-boost technology development. Continued Large Class Stage (LCS) motor development to include static fire and proof tests. Initiated system engineering/integration efforts.			
FY 2012 Plans: Continue to support the SRM research and development industrial base and critical infrastructure. Continue assessment and demonstration of ordnance and post-boost technology development. Continue LCS motor development. Complete intermediate design reviews for LCS motors. Complete phase 1 systems engineering efforts. Initiate Medium Class Stage (MCS) development activities to include systems engineering on MCS 1-3.			
FY 2013 Plans:			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641021: <i>ICBM Propulsion Applications</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Continue to support the SRM research and development industrial base and critical infrastructure. Continue assessment and demonstration of ordnance and post-boost technology development. Complete LCS motor development in support of transition from LCS to MCS class to include transition of systems engineering efforts. Continue design and development of MCS motors.			
Accomplishments/Planned Programs Subtotals	41.557	44.308	44.959

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

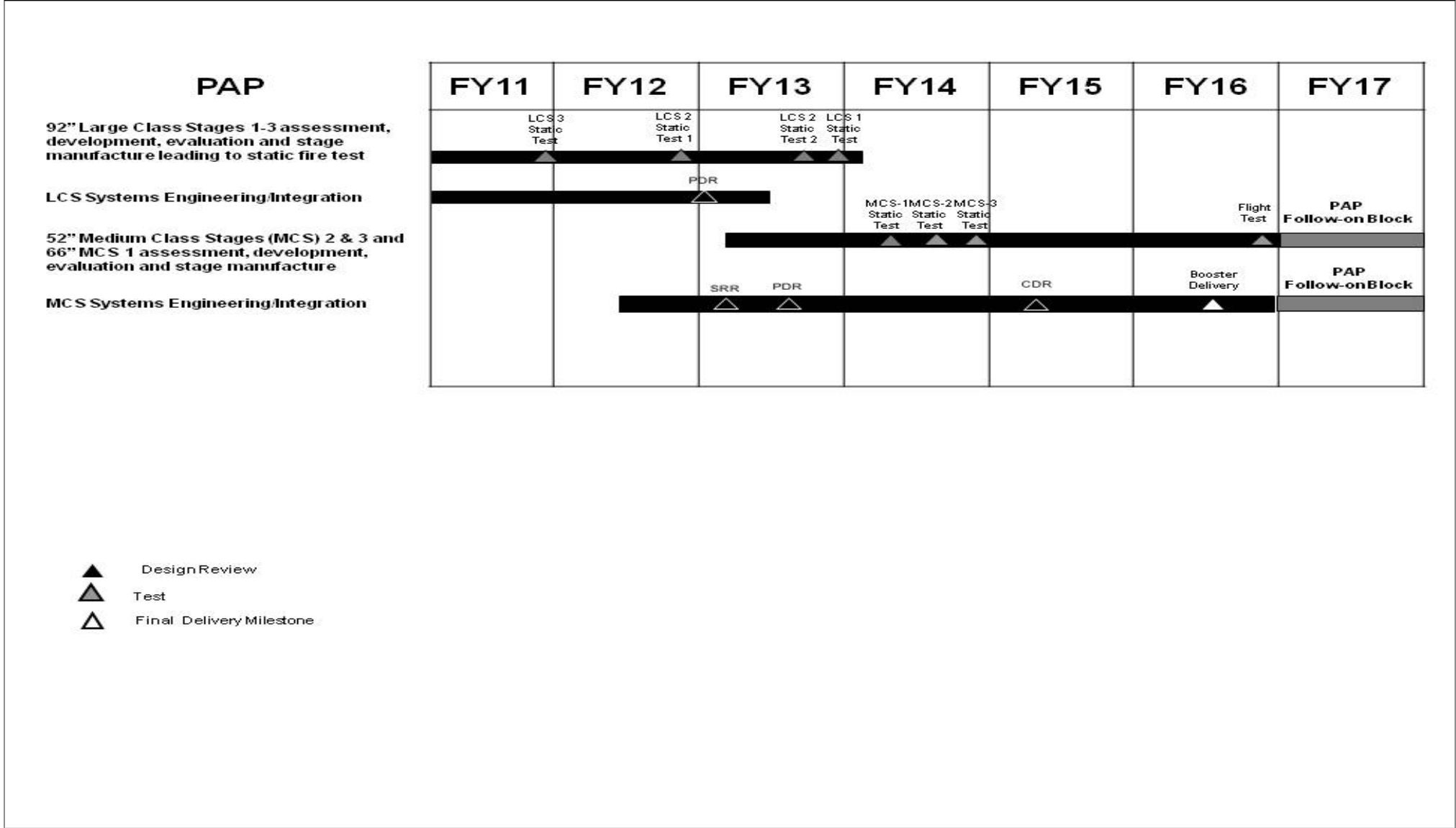
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• None: <i>N/A</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy
Studies, analyses, and motor test firings will be accomplished; efforts will be conducted using contracting strategies deemed most appropriate, generally using competitive 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-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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641021: <i>ICBM Propulsion Applications</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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641021: <i>ICBM Propulsion Applications</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
LCS Motors Static Test Fires	3	2011	4	2013
Systems Engineering/Integration Design Reviews	1	2013	2	2015
MCS Static Test Fire	2	2014	4	2014
System Engineering/Integration Booster Delivery	3	2016	3	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>				PROJECT 641022: <i>ICBM Reentry Vehicle Applications</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
641022: <i>ICBM Reentry Vehicle Applications</i>	5.331	5.738	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Intercontinental Ballistic Missile (ICBM) Reentry Vehicle (RV) Applications Program ensures the ICBM force is equipped with the safest and most reliable RVs and explores options for common, multi-mission capabilities. The program enables a responsive engineering infrastructure to support RVs beyond their original design life by addressing operational system issues and ensuring the availability of long-lead components/materials while identifying life cycle cost reduction methods. In addition, the program also develops and tests advanced RV technologies to meet future requirements. The program leverages investments by the Science & Technology community and Navy reentry systems applications program. Products are tested on a space available basis on Minuteman and Trident Force Development Evaluation (FDE) flights.

BA4 - This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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

	FY 2011	FY 2012	FY 2013
Title: ICBM Reentry Vehicle Applications	5.331	5.738	-
Description: Develop, evaluate, and test reentry vehicle materials and technologies for use in current and future strategic systems.			
FY 2011 Accomplishments: Determined feasibility of an advanced battery for a future fuze design. Verified and scaled prototypes. Conducted environmental and safety testing. Nosetip and Thermal Protection System (TPS) Material Development. Continued carbon-carbon (C-C) thermal protection system (TPS) material studies. Coordinated with the Navy on a potential FY16 flight test sharing. Examined design solution for the next generation Penetration Aids. Continued Arc-Jet Ground testing of RVAP materials to evaluate and screen materials.			
FY 2012 Plans: Continue Future Fuze Battery Demonstration, Nosedip and TPS Material Development, Penetration Aid Suite, and Arc-Jet Testing. Conduct a Weather Reentry Vehicle Interaction Planner (WRIP) demonstration to populate a master database.			
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641022: <i>ICBM Reentry Vehicle Applications</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Effort reduced to zero funds due to higher AF priorities			
Accomplishments/Planned Programs Subtotals	5.331	5.738	-

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>
• 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

D. Acquisition Strategy

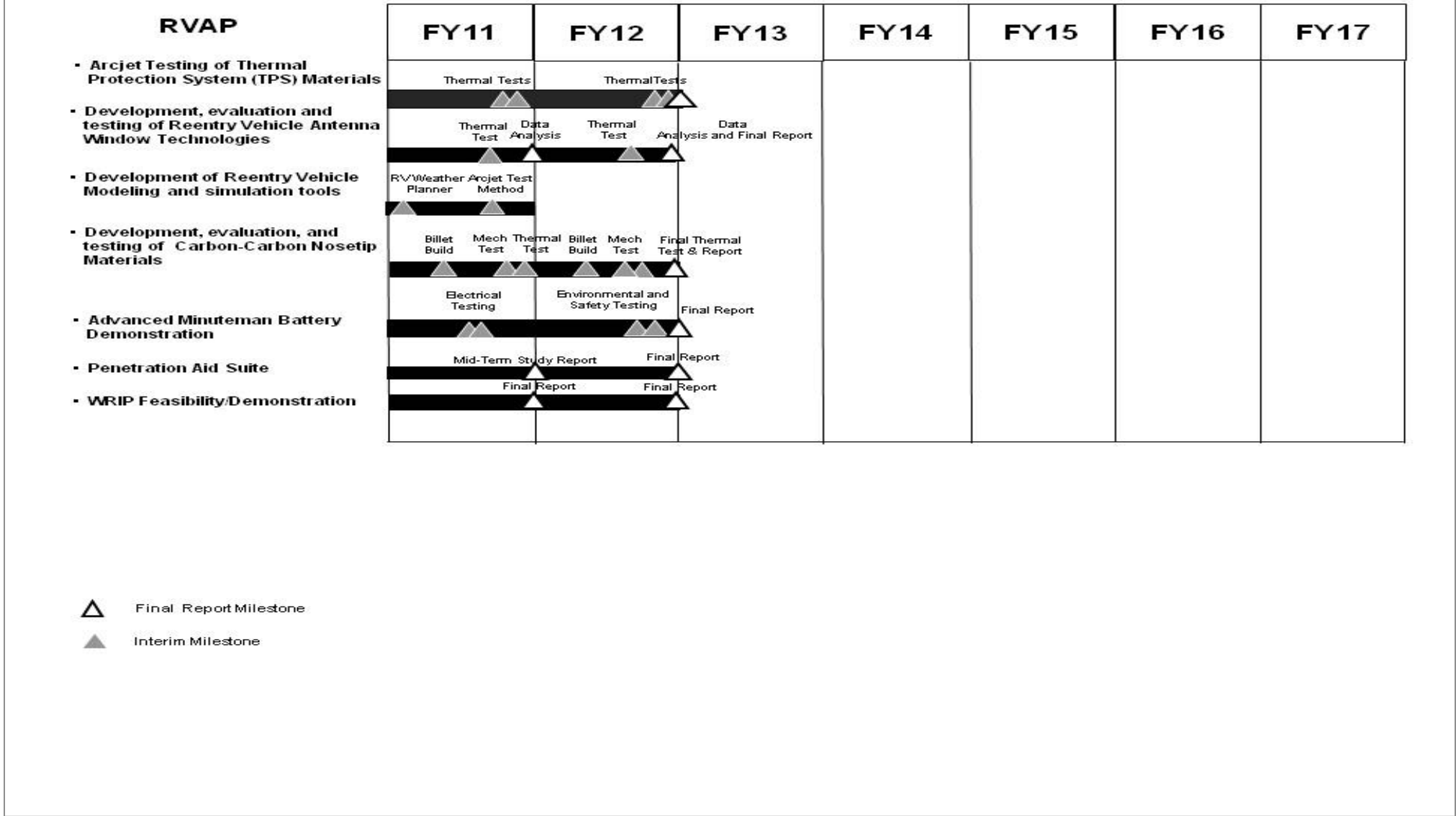
Studies, analyses, limited engineering, and pre-prototype hardware development will be accomplished; efforts will be conducted using contracting strategies deemed most appropriate, generally using competitive cost plus contracts.

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-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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641022: <i>ICBM Reentry Vehicle Applications</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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641022: <i>ICBM Reentry Vehicle Applications</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Reentry Vehicles Materials Arc Jet Testing	3	2011	4	2012
Reentry Vehicle Antenna Window Tests	3	2011	4	2012
Development of Reentry Vehicle Modeling and Simulation	1	2011	4	2011
Nosetip Materials Testing	3	2011	4	2012
Battery Testing	2	2011	4	2012
Penetration Aid Alternative Design Study	1	2011	4	2012
Weather Reentry Vehicle Interaction Planner (WRIP)	1	2011	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641023: <i>Rocket System Launch 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
641023: <i>Rocket System Launch Program</i>	0.023	0.025	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The purpose of the ICBM Rocket System Launch Program (RSLP) is to perform studies and analyses that determine the most constructive and cost effective use of missile assets after they are deactivated or considered excess and added to the RSLP inventory.

BA4 - This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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

	FY 2011	FY 2012	FY 2013
Title: ICBM Rocket System Launch Program	0.023	0.025	-
Description: Study and analyze the most constructive use of deactivated missile assets to be added to the RSLP inventory.			
FY 2011 Accomplishments: Conducted RSLP studies and analyses.			
FY 2012 Plans: Conduct RSLP studies and analyses.			
FY 2013 Plans: Funds reduced to zero to support higher AF priorities.			
Accomplishments/Planned Programs Subtotals	0.023	0.025	-

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

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641023: <i>Rocket System Launch Program</i>

D. Acquisition Strategy

Studies and analyses will be performed primarily in-house augmented with contractor support as required. Any special projects funded under this project that will require development and/or evaluation of hardware along with the associated employment concepts, will be awarded to qualified industry sources following open competition. Type of contract used (e.g., CPIF, FPIF, etc) will be that deemed most advantageous to the government, generally using 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-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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641023: <i>Rocket System Launch Program</i>

RSLP

• Continue on-going study/analysis of the most constructive use of deactivated missile assets and adoption of low cost front-end systems for use on deactivated missile assets

FY11	FY12	FY13	FY14	FY15	FY16	FY17
Studies	Studies					

△ Final Report

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641023: <i>Rocket System Launch Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Annual Studies/Analyses	1	2011	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641025: <i>Ground Based Strategic Deterrence (GBSD)</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
641025: <i>Ground Based Strategic Deterrence (GBSD)</i>	-	-	11.700	-	11.700	9.400	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Note: In FY 2013, 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 Mssile (ICBM). This is not a new start, efforts previously funded under project 644209 Long Range Planning.

A. Mission Description and Budget Item Justification

Ground-Based Strategic Deterrence (GBSD) seeks to identify viable concepts and materiel solutions for a Minuteman III follow-on in support of the Air Force's strategic deterrence and global strike capabilities. Funding supports pre-Milestone A activities, to include an AoA and associated concept refinement activities of potential materiel solutions. This effort will explore materiel technology alternatives at the system and sub-system levels during the Materiel Solution Analysis Phase leading to a Milestone-A decision.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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

	FY 2011	FY 2012	FY 2013
Title: Ground-based Strategic Deterrent (GBSD) Materiel Solutions Phase activities	-	-	11.700
Description: Perform Pre-Milestone-A activities to identify potential materiel solutions for future ground based strategic deterrence.			
FY 2011 Accomplishments: Effort funded under Project 644209 Long Range Planning			
FY 2012 Plans: Effort funded under Project 644209 Long Range Planning			
FY 2013 Plans: Perform pre-Material Solution Analysis Phase activities and initiate a GBSD AoA. Refine and identify viable concepts and materiel solutions for a follow-on to the Minuteman strategic deterrent in support of the global strike capabilities.			
Accomplishments/Planned Programs Subtotals	-	-	11.700

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641025: <i>Ground Based Strategic Deterrence (GBSD)</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

During MSA phase, an AoA will be completed. Multiple contracts, competitively competed, will be awarded to refine materiel solution concepts. A technology development strategy will be developed during the MSA phase.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641025: <i>Ground Based Strategic Deterrence (GBSD)</i>

GBSD

- **Matériel Solution Analysis Phase**
• Includes GBSD Analysis of Alternative
- **Technology Development Phase**

FY11	FY12	FY13	FY14	FY15	FY16	FY17
		 MDD GBSD AoA 				
						

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 641025: <i>Ground Based Strategic Deterrence (GBSD)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Material Development Decision	2	2013	2	2013
Material Solutions Analysis Phase	2	2013	2	2015
Milestone A Decision	2	2015	2	2015
Technology Development Phase	2	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>				PROJECT 644209: <i>Long Range Planning (LRP)</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
644209: <i>Long Range Planning (LRP)</i>	5.746	5.062	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Long Range Planning (LRP) task analyzes systems to identify common potential modifications of the Minuteman III required to meet user objectives relative to long term sustainment, technology insertion, employment, and force structure. The studies focus on system supportability, operability, reliability, and maintainability. Options/concepts generated by these studies are evaluated for feasibility, system impacts, and cost. The LRP also lays the groundwork for analysis supporting future weapon systems development and deployment. Pre-milestone activities may be conducted for current or future Intercontinental Ballistic Missile (ICBM) weapon systems to include entry criteria for milestone activities.

BA4 - This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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

	FY 2011	FY 2012	FY 2013
Title: Long Range Planning	5.746	5.062	-
Description: Analyze and plan current and future ICBM modifications for long term sustainment, technology insertion, employment and force structure.			
FY 2011 Accomplishments: Continued support of the consolidated long range plan and feasibility and life extension studies. Continued pre-milestone activities that may be conducted for current or future ICBM weapon systems. Studies completed are Command, Status and Message Transfer Study, Electrical Surge Arrestor (ESA) Upgrade/Redesign Study and the Airborne Launch Control System (ALCS) Two-Way Communication Study. Initiated Ground Based Strategic Deterrent (GBSD) pre-AoA Study Guidance and Concept Characterization and Technology Development (CCTD).			
FY 2012 Plans: Continue support of the consolidated long range plan. Continue feasibility and life extension studies. Continue pre-milestone activities that may be conducted for current or future ICBM weapon systems. Planned studies are the following: Launch Facility Interior Denial Study, Alternatives for Emergency Breathing Air in LCC, Investigation of Power Storage Technologies for MM, ICBM Guidance Enhanced Test and Evaluation Concepts, Alternate-Pendulous Integrating Gyroscopic Accelerometer (Alt-PIGA) Feasibility Study. Continue Ground Based Strategic Deterrent			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 644209: <i>Long Range Planning (LRP)</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
(GBSD) pre-AoA Study Guidance and Concept Characterization and Technology Development (CCTD). FY12 Congressional Add will fund propulsion and sustainment issues. FY 2013 Plans: Funds reduced to zero to support higher Air Force priorities.			
Accomplishments/Planned Programs Subtotals	5.746	5.062	-

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>
• 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
Studies and analyses will be accomplished; efforts will be conducted using contracting strategies deemed most appropriate, generally using competitive 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-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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 644209: <i>Long Range Planning (LRP)</i>

ILRP

- Continue support of the consolidated long range plan
- Continue feasibility and life extension studies

FY11	FY12	FY13	FY14	FY15	FY16	FY17
Studies ▲	Studies ▲					
Studies ▲	Studies ▲					

▲ Final Report

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603851F: <i>ICBM - DEM/VAL</i>	PROJECT 644209: <i>Long Range Planning (LRP)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Long Range Planning studies	1	2011	4	2012
Feasibility/life extension studies	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				R-1 ITEM NOMENCLATURE							
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				PE 0603854F: <i>Wideband MILSATCOM (Space)</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	74.857	12.692	12.027	-	12.027	13.948	16.918	17.371	18.327	Continuing	Continuing
644811: <i>Wideband Gapfiller</i>	56.683	-	-	-	-	-	-	-	-	Continuing	Continuing
644870: <i>Command & Control System Consolidated (CCSC)</i>	18.174	12.692	12.027	-	12.027	13.948	16.918	17.371	18.327	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 Wideband Global SATCOM (WGS) System, previously known as Wideband Gapfiller Satellites, provides DoD users with high data rate military satellite communication (MILSATCOM) services in accordance with the Joint Space Management Board-approved MILSATCOM architecture (Aug 96), the Joint Requirements Oversight Council (JROC)-approved MILSATCOM Capstone Requirements Document (Oct 97), and the JROC-approved WGS Operational Requirements Document (May 00). Dual-frequency WGS satellites augment, then replace the DoD's Defense Satellite Communications Systems (DSCS) X-band service and augment one-way Global Broadcast Service Ka-band capabilities. In addition, WGS provides a new high capacity two-way Ka-band service.

WGS Block I consists of satellites 1-3. These satellites were successfully launched on 10 Oct 07, 3 Apr 09, and 5 Dec 09, respectively.

WGS Block II consists of satellites 4-6. Block II satellites will incorporate minor modifications to better support the Airborne Intelligence, Surveillance and Reconnaissance mission. Launch for satellite 4 is scheduled for 19 Jan 12. Launch for satellite 5 is planned for Jan 13.

A United States-Australia WGS partnership was codified 14 Nov 07. Australia provides funds needed to buy WGS-6 in exchange for access to constellation-wide resources. Launch for satellite 6 is scheduled for May 13.

WGS Block II Follow-on currently consists of satellites 7-9 with projected launches in FY16, FY17 and FY18, respectively.

A multilateral partnership between the United States, Canada, Denmark, Luxembourg, the Netherlands, and New Zealand was codified 12 Jan 12. The United States contributions include existing and programmed infrastructure, to include the acquisition, launch, operations, and sustainment costs of WGS 1-8, and the launch, operations, and sustainment of WGS-9. Other Partners' contributions will fund WGS-9 acquisition and support activities. Each Partner benefits from a unique allocation profile of SATCOM resources commensurate with its level of contribution.

The MILSATCOM Command and Control System-Consolidated (CCS-C) system provides integrated launch and on-orbit command and control (C2) functionality for MILSATCOM satellites. CCS-C uses modified commercial off the shelf hardware/software to control all emerging and legacy MILSATCOM systems to include

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603854F: <i>Wideband MILSATCOM (Space)</i>
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Milstar, DSCS, WGS and AEHF satellites. The CCS-C project 644870 funds database development for WGS Block I and II satellites, and AEHF satellites 1 through 3. The WGS and AEHF procurement program elements will fund the mission unique databases for the WGS Block II Follow-On satellites and the AEHF 4-6 satellites, respectively. CCS-C will also evolve the system architecture to provide increased performance for additional satellites; to comply with DoD, Air Force, and AFSPC-directed standards for Information Assurance, Satellite Control, and Net-Readiness; and to support space situational awareness and new C2 training systems.

Funding is in Budget Activity 4, Advanced Component Development and Prototypes, as it supports component development and prototyping for Wideband MILSATCOM.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	36.123	12.804	12.494	-	12.494
Current President's Budget	74.857	12.692	12.027	-	12.027
Total Adjustments	38.734	-0.112	-0.467	-	-0.467
• Congressional General Reductions	-	-0.112			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.548	-			
• Other Adjustments	42.282	-	-0.467	-	-0.467

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

Project: 644811: *Wideband Gapfiller*

Congressional Add: *Capabilities Insertion Program (CIP)*

Congressional Add Subtotals for Project: 644811

Congressional Add Totals for all Projects

	FY 2011	FY 2012
	37.452	-
	37.452	-
	37.452	-

Change Summary Explanation

FY11: -\$3.548M SBIR; Other Adjustment row: -\$0.718M Congressional General Reduction, \$43.000M Congressional Add for Capabilities Insertion Program

FY12: -\$0.112 Congressional General Reduction

FY13: -\$0.467 for reallocation of funding to higher Department 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603854F: <i>Wideband MILSATCOM (Space)</i>	PROJECT 644811: <i>Wideband Gapfiller</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
644811: <i>Wideband Gapfiller</i>	56.683	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Wideband Global SATCOM (WGS) System, previously known as Wideband Gapfiller Satellites, will provide the DoD with high data rate military satellite communication (MILSATCOM) services in accordance with the Joint Space Management Board-approved MILSATCOM architecture (Aug 96), the Joint Requirements Oversight Council (JROC)-approved MILSATCOM Capstone Requirements Document (Oct 97), and the JROC-approved WGS Operational Requirements Document (May 00). These dual-frequency WGS satellites will augment the DoD's Defense Satellite Communications Systems X-band service and one-way Global Broadcast Service Ka-band capabilities. In addition, WGS will provide a new high capacity two-way Ka-band service.

No funds are requested for FY13.

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

	FY 2011	FY 2012	FY 2013
Title: Block II Follow-on Non-Recurring Engineering (NRE)	19.231	-	-
Description: Block II Follow-on Non-Recurring Engineering (NRE)			
FY 2011 Accomplishments: Continued Block II Follow-on NRE.			
FY 2012 Plans: Not applicable			
FY 2013 Plans: Not applicable.			
Accomplishments/Planned Programs Subtotals	19.231	-	-

	FY 2011	FY 2012
Congressional Add: Capabilities Insertion Program (CIP)	37.452	-
FY 2011 Accomplishments: Began activities for an enhanced channelizer to provide increased capacity in Ka and X-band.		
FY 2012 Plans: Not applicable		
Congressional Adds Subtotals	37.452	-

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603854F: <i>Wideband MILSATCOM (Space)</i>	PROJECT 644811: <i>Wideband Gapfiller</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 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>
• P-17: <i>MPAF, PE 0303600F, WGS</i>	558.752	792.857	36.835	0.000	36.835	60.998	88.200	86.396	85.800	38.000	3,375.899
• P-46: <i>OPAF, PE 0303600F, GBS</i>	1.652	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	30.097
<i>Transmit Strings</i>											
• R-39: <i>RDT&E, PE 0603854F, Project # 644870, CCS-C</i>	18.174	12.692	12.027	0.000	12.027	13.948	16.918	17.371	18.327	Continuing	Continuing

D. Acquisition Strategy

The WGS program made considerable use of commercial practices and technology in its FAR Part 12, Firm Fixed Price (FFP) acquisition for satellites 1-3. The WGS program received MS II/III approval in November 2000 and awarded a FFP contract in January 2001 (three satellites and options for an additional three). Options for satellites 4-6 were not exercised prior to the 31 December 2003 expiration date.

Since WGS-type capabilities were no longer being offered commercially, it was no longer appropriate to use a Firm Fixed Price contract for satellites 4-6. A Fixed Price Incentive Fee contract, which balances uncertainty of parts obsolescence/production gap with experience gained from WGS 1-3 production, was approved. The Not-to-Exceed letter contract was awarded for satellites 4 and 5 (with unfunded priced option for 6th satellite) in 2nd Qtr FY06. The contract definitized on 17 October 2006. The Block II Follow-on contract (satellites 7-9) was awarded on 30 Aug 2011. All satellites are purchased with procurement funds, and the Non-Recurring Engineering (NRE) is funded with RDT and E. An updated Acquisition Strategy for the WGS Block II Follow-on satellites was approved by the MDA on 25 Jan 2010.

E. Performance Metrics

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

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603854F: <i>Wideband MILSATCOM (Space)</i>	PROJECT 644811: <i>Wideband Gapfiller</i>
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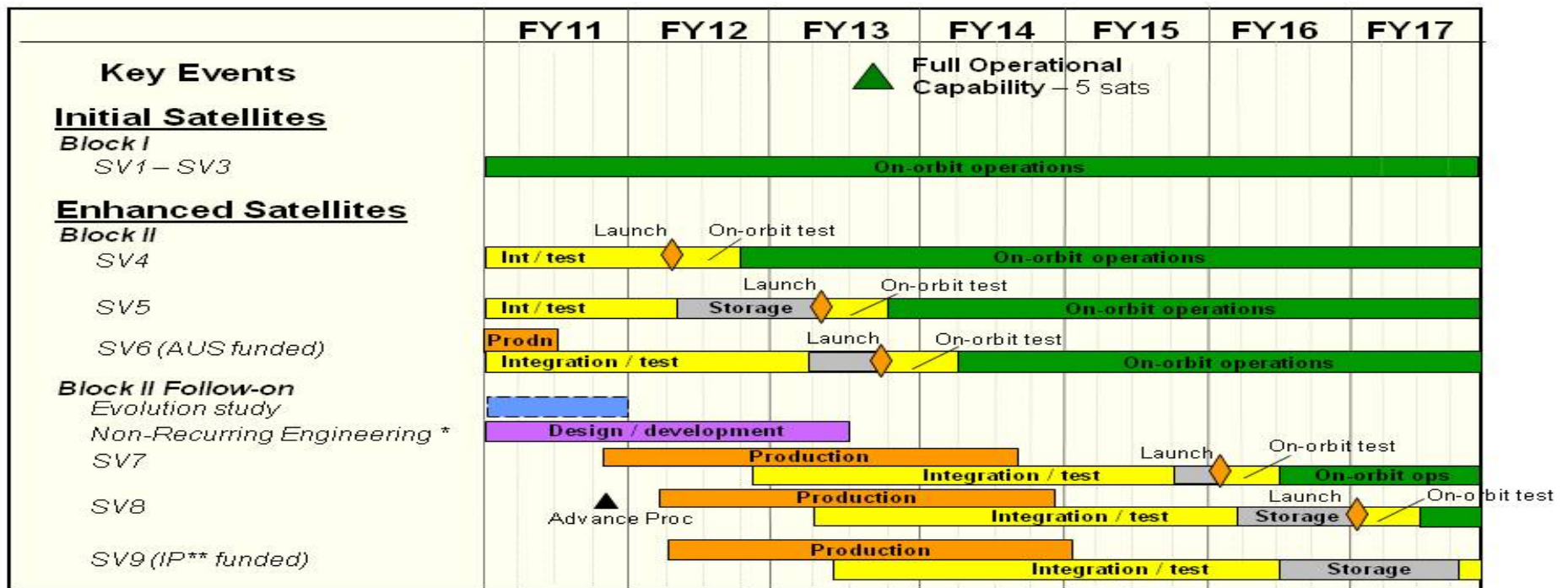
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Block II Parts Obsolescence Redesign	SS/FPIF	Boeing:El Segundo, CA	91.737	-		-		-		-	0.000	91.737	91.737
Block I EMD (satellites 1-3)	C/FFP	Boeing:El Segundo, CA	143.013	-		-		-		-	0.000	143.013	143.013
UAV Bypass NRE	SS/FFP	Boeing:El Segundo, CA	14.000	-		-		-		-	0.000	14.000	14.000
Payload/Production Studies	Various	Various:Various,	38.437	-		-		-		-	0.000	38.437	38.437
Block II Follow-on NRE	SS/FPIF	Boeing:El Segundo, CA	57.067	-		-		-		-	0.000	57.067	57.067
Capabilities Insertion Program (CIP)	SS/FPIF	Boeing:El Segundo, CA	37.452	-		-		-		-	0.000	37.452	0.000
Subtotal			381.706	-		-		-		-	0.000	381.706	344.254

Support (\$ 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			
Joint Terminals Engineering Office	PO	JTEO:McLean, VA	6.618	-		-		-		-	0.000	6.618	6.618
Pre-EMD	Various	Various:Various,	5.579	-		-		-		-	0.000	5.579	0.000
Program Support (PMA)	Various	Various:Various,	17.442	-		-		-		-	0.000	17.442	17.442
Subtotal			29.639	-		-		-		-	0.000	29.639	24.060

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			
Subtotal			-	-		-		-		-	0.000	0.000	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603854F: <i>Wideband MILSATCOM (Space)</i>	PROJECT 644811: <i>Wideband Gapfiller</i>



* Includes enhanced Channelizer activities (FY11 Congressional add)
 ** IP: International Partners

■ Concept activities
 ▲◇ 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603854F: <i>Wideband MILSATCOM (Space)</i>	PROJECT 644811: <i>Wideband Gapfiller</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Initiate Block II Follow-on non-recurring engineering	1	2011	2	2013
Enhanced Channelizer activities	1	2012	1	2013
Complete Block II Follow-on non-recurring engineering	2	2013	2	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603854F: <i>Wideband MILSATCOM (Space)</i>				PROJECT 644870: <i>Command & Control System Consolidated (CCSC)</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
644870: <i>Command & Control System Consolidated (CCSC)</i>	18.174	12.692	12.027	-	12.027	13.948	16.918	17.371	18.327	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Military Satellite Communications (MILSATCOM) Command and Control System-Consolidated (CCS-C) system provides integrated launch and on-orbit command and control (C2) functionality, and backup operations at Schriever AFB and Vandenberg AFB, for MILSATCOM satellites as the legacy capability provided by the Air Force Satellite Control Network (PE 0305110F) has phased out according to plan. CCS-C uses modified commercial off the shelf hardware/software to control all emerging and legacy MILSATCOM systems including Milstar, Defense Satellite Communications System (DSCS), WGS and AEHF satellites. The CCS-C project 644870 funds database development for WGS Block I and II satellites, and AEHF satellites 1 through 3. The WGS and AEHF procurement program elements will fund the mission unique databases for the WGS Block II Follow-On satellites and the AEHF 4-6 satellites, respectively. CCS-C will also evolve the system architecture to provide increased performance for additional satellites; to comply with DoD, Air Force, and AFSPC-directed standards for Information Assurance, Satellite Control, and Net-Readiness; and to support space situational awareness and new C2 training systems.

FY13 funds provide required command and control capability to launch WGS and AEHF satellites.

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

	FY 2011	FY 2012	FY 2013
Title: CCS-C development	18.174	12.692	12.027
Description: Develop and acquire satellite-specific software to support handover of on-orbit operations of WGS satellites and launch, early-orbit, and on-orbit operations of AEHF satellites.			
FY 2011 Accomplishments: Funded modifications of the WGS Block I satellite databases and software, continued development to support WGS Block II satellites, continued development of software for replacement of the WGS Flight Dynamics System with modified CCS-C orbit analysis software. Continued development for the FY12 launch of AEHF Space Vehicle 2 (SV-2), and continued development of the Standard Space Trainer for Milstar.			
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603854F: <i>Wideband MILSATCOM (Space)</i>	PROJECT 644870: <i>Command & Control System Consolidated (CCSC)</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Fund development to support WGS Block II satellites. Complete development of software for replacement of WGS Flight Dynamics System with modified CCS-C orbit analysis software. Conduct launch and early orbit operations for AEHF SV-2. Complete development for the FY13 launch of AEHF SV-3.			
FY 2013 Plans: Complete development to support launch of WGS SV-5. Conduct launch and early orbit operations for AEHF SV-3.			
Accomplishments/Planned Programs Subtotals	18.174	12.692	12.027

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
• P-46: <i>OPAF, PE 0303605F, SATCOM O&M</i>	0.249	0.252	0.259	0.000	0.259	0.261	0.267	0.272	0.277	Continuing	Continuing
• P-14: <i>MPAF, PE 0303640F, Advanced EHF</i>	0.000	0.000	0.800	0.000	0.800	8.600	9.400	14.700	14.900	Continuing	Continuing

D. Acquisition Strategy
Competitive contracts with cost plus award fee options were awarded in February 2001 to two teams to demonstrate capabilities for the concept demonstration phase. A downselect to a single team was awarded in March 2002 to develop the system for the development phase. The current contract has been extended to 2012 to provide launch readiness support to ongoing WGS and AEHF satellite development. A new contract is expected to be awarded in 2012.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603854F: <i>Wideband MILSATCOM (Space)</i>	PROJECT 644870: <i>Command & Control System Consolidated (CCSC)</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
Demonstration Contractors	C/FFP	Various:Various	6.800	-		-		-		-	0.000	6.800	0.000
Development Contractor: Integral Systems, Inc.	C/CPAF	Integral Systems, Inc:Lanham, MD	174.371	9.176	Oct 2011	5.729	Oct 2012	-		5.729	Continuing	Continuing	0.000
Production & Sustainment contract	C/FFP	TBD:TBD,	-	-		4.760	Nov 2012	-		4.760	Continuing	Continuing	0.000
Subtotal			181.171	9.176		10.489		-		10.489			0.000

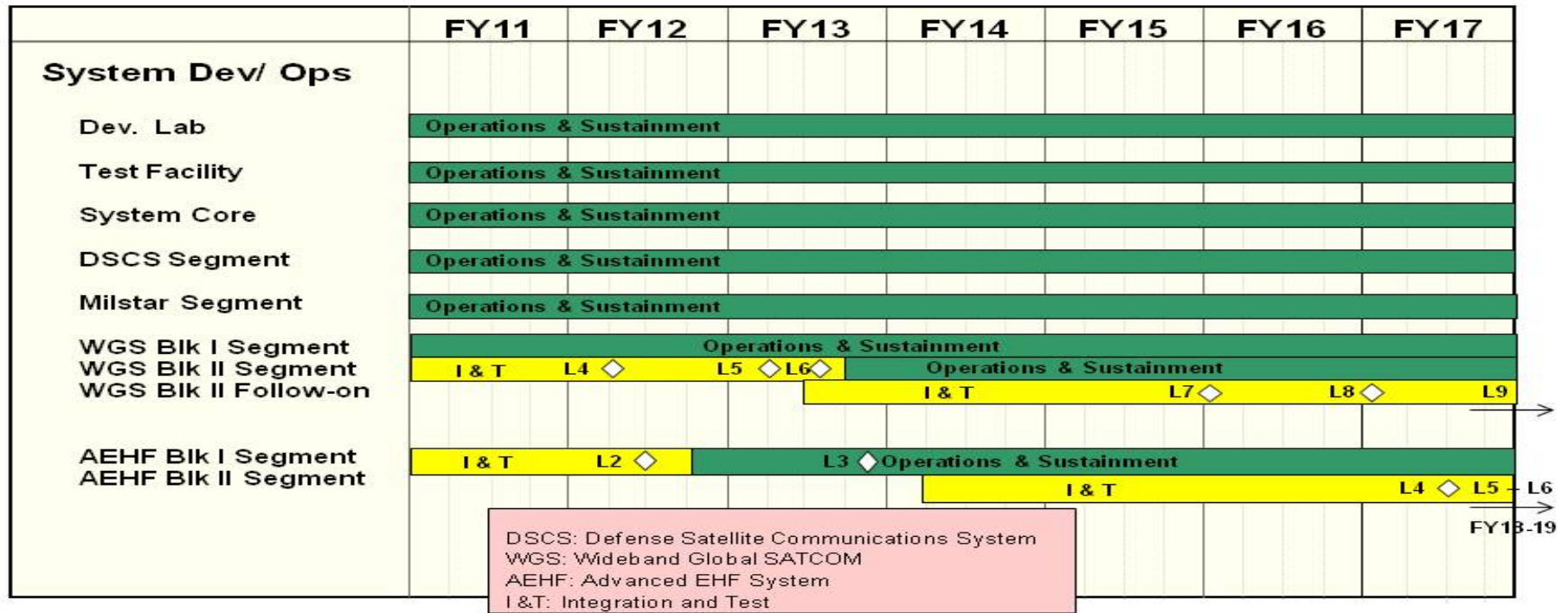
Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CCS-C Program Support Cost (PMA)	Various	Various:,	29.860	3.516	Oct 2011	-		-		-	0.000	33.376	0.000
CCS-C Systems Engineering & Integration	Various	SERCO:Arlington, VA	-	-		0.260	Oct 2012	-		0.260	Continuing	Continuing	0.000
Subtotal			29.860	3.516		0.260		-		0.260			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
CCS-C Program Support Cost (PMA)	Various	Various:Various,	-	-		1.278	Oct 2012	-		1.278	Continuing	Continuing	0.000
Subtotal			-	-		1.278		-		1.278			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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603854F: <i>Wideband MILSATCOM (Space)</i>	PROJECT 644870: <i>Command & Control System Consolidated (CCSC)</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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603854F: <i>Wideband MILSATCOM (Space)</i>	PROJECT 644870: <i>Command & Control System Consolidated (CCSC)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AEHF 2 launch	3	2012	3	2012
CCS-C Block II RFP	1	2012	1	2012
CCS-C Block II Contract Award	3	2012	3	2012
AEHF 3 launch	4	2013	4	2013
WGS 5 launch	2	2013	2	2013
WGS 6 launch	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603859F: <i>Pollution Prevention</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	2.447	2.075	2.054	-	2.054	2.014	1.851	1.922	1.948	Continuing	Continuing
644852: <i>Pollution Prevention</i>	2.447	2.075	2.054	-	2.054	2.014	1.851	1.922	1.948	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Funds will be used to target R&D activities that demonstrate and prototype alternative weapon system manufacturing, remanufacturing, and maintenance materials and processes that reduce or eliminate hazardous chemicals, materials and waste streams through cost-effective programs and practices, while improving energy efficiency and reducing greenhouse gas emissions. Specifically, funds target pollution prevention technologies that reduce or eliminate chromium, cadmium, and nickel, as well as reduce or eliminate Hazardous Air Pollutants (HAPS), Volatile Organic Compounds (VOCs), and Class I and II Ozone Depleting Substances (ODS), global warmers and biochemical oxygen demand (BOD) and to increase the use of renewable and alternative fuels. This effort is in Budget Activity 04, Advanced Component Development and Prototypes, because the emphasis is on proving component and subsystem maturity prior to integration in major and complex systems and may involve risk reduction initiatives.

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	2.534	2.075	2.050	-	2.050
Current President's Budget	2.447	2.075	2.054	-	2.054
Total Adjustments	-0.087	-	0.004	-	0.004
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.074	-			
• Other Adjustments	-0.013	-	0.004	-	0.004

Change Summary Explanation

FY11 adjustments (CGR -\$13K) are reflected in Other Adjustment Row.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Hazardous Pollution Prevention	2.447	2.075	2.054
Description: RCRA			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603859F: <i>Pollution Prevention</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<i>FY 2011 Accomplishments:</i> Continue development of prototyping and developing activities to reduce or eliminate hazardous materials and waste.			
<i>FY 2012 Plans:</i> Continue development of activities to reduce or eliminate hazardous materials and waste.			
<i>FY 2013 Plans:</i> Continue development of activities to reduce or eliminate hazardous materials and waste.			
Accomplishments/Planned Programs Subtotals	2.447	2.075	2.054

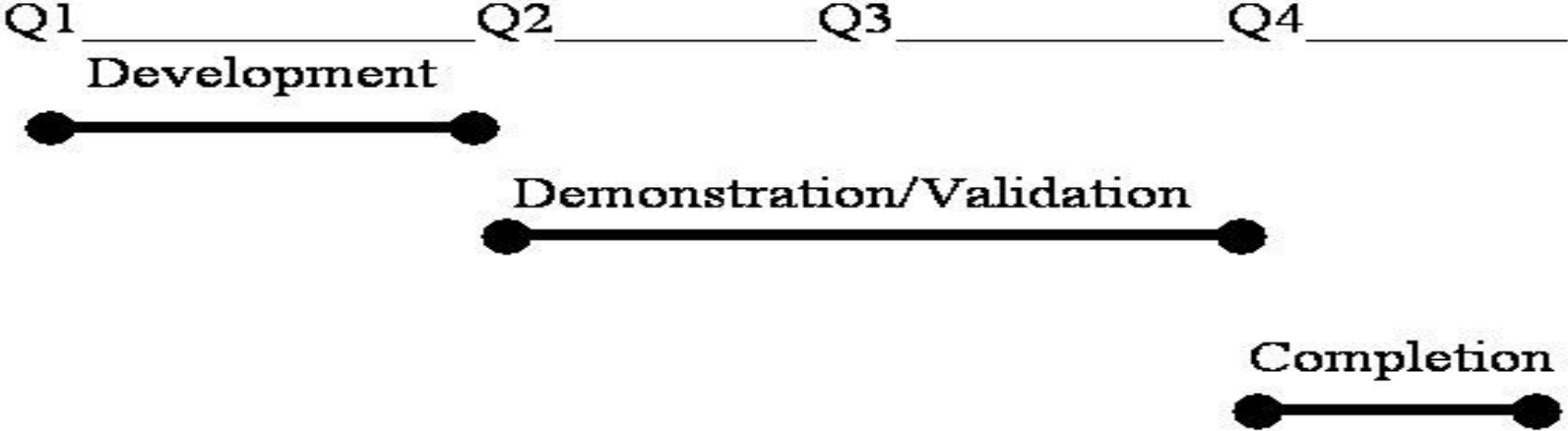
D. Other Program Funding Summary (\$ in Millions)												
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>	
•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

E. Acquisition Strategy
Pollution Prevention activities are level of effort and use time and materials support contracts.

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: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603859F: <i>Pollution Prevention</i>	PROJECT 644852: <i>Pollution Prevention</i>

Pollution Prevention Demonstration Schedules



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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603859F: <i>Pollution Prevention</i>	PROJECT 644852: <i>Pollution Prevention</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Development	1	2011	1	2016
Prototype	1	2011	3	2016
Contract Completion	1	2011	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603860F: <i>Joint Precision Approach and Landing Systems - Dem/Val</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	12.452	19.879	57.975	-	57.975	19.578	136.908	64.600	16.373	Continuing	Continuing
644652: <i>Precision Landing Systems</i>	12.452	19.879	57.975	-	57.975	19.578	136.908	64.600	16.373	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note
 While the Joint Precision Approach and Landing System (JPALS) is an ACAT ID program, the Air Force Exhibit R-3 does not include "to complete" costs as the JPALS Land-Based Increment 2 (Air Force lead) is pre-Milestone B (FY13) and not Section 2366a certified. The Sea-Based Increment 1a (Navy lead) is post-Milestone B and Section 2366a certified. Reference Navy JPALS R-Doc for data (PNO 238).

Totals include funding for Program Resources Collection Process Program Number (PNO) 238, JPALS (Land-Based Increment 2).

A. Mission Description and Budget Item Justification

JPALS is an Acquisition Category ID program with joint partners for requirements and acquisition including the USAF, USN/USMC, USA, and the Federal Aviation Administration (under the Next Generation (NextGen) Air Transportation System Program). JPALS development includes an incremental approach employing a family of systems (FoS) to ensure joint, allied, coalition and Federal Aviation Administration/International Civil Aviation Organization interoperability. On 16 March 2007, the Joint Requirements Oversight Council (JROC) approved the Capability Development Document (CDD) for the JPALS FoS and Increment 1 for the Sea-Based System and designated the Navy as the JPALS lead Department of Defense (DoD) Component. On 19 January 2010, the JROC approved Increment 2 for the Land-Based System and designated the Air Force as the lead component for the Land-Based System.

JPALS is the next generation global positioning system (GPS)-based precision approach and landing system for the DoD. It will replace several aging and obsolete aircraft landing systems with a FoS that will function in more operational environments and in a wide range of meteorological conditions.

Because a cornerstone of the JPALS implementation strategy is worldwide and civil interoperability, JPALS must harmonize with US and International Civil Global Navigation Satellite Systems. This is accomplished through participation in the development testing, and implementation of international standards through the North American Treaty Organization (NATO) and the International Civil Aviation Organization.

Interoperability of the JPALS ground systems with all military and civil aircraft is a key aspect of the planned system. Military aircraft must have worldwide access to civil and military airfields/air stations/operating locations in benign and hostile (GPS jamming) environments. The JPALS Land-based Increment 2 system will provide a civil interoperable capability and also a military interoperable encrypted, jam-resistant capability. JPALS will close capability gaps identified in the Precision Approach and Landing Capability Initial Capabilities Document. These gaps include: interoperability for naval aircraft landing at shore-based airfields operated by other services, interoperability for Navy/Marine Corps and Army aircraft landing at civil airports, and for the Civil Reserve Air Fleet landing at DoD airfields.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603860F: <i>Joint Precision Approach and Landing Systems - Dem/Val</i>
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FY13 efforts focus on MS B documentation preparation and source selection to support contract award. A MS B is planned for May 2013 with source selection continuing through Jul 2013. The Engineering, Manufacturing, and Development (EMD) contract will be awarded in Aug 2013.

This program is in budget activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	13.952	20.112	52.167	-	52.167
Current President's Budget	12.452	19.879	57.975	-	57.975
Total Adjustments	-1.500	-0.233	5.808	-	5.808
• Congressional General Reductions	-	-0.233			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.811	-			
• SBIR/STTR Transfer	-0.393	-			
• Other Adjustments	-0.296	-	5.808	-	5.808

Change Summary Explanation

FY11 Congressional General Reduction of 0.296M in Other Adjustment row.

FY12 Congressional General Reduction (FFRDC, Sec. 8023) of 0.233M.

FY13 funding increase to start the JPALS lead platform effort

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: JPALS Engineering Support Studies and Analysis	6.121	2.281	1.500	-	1.500
Description: Provides systems engineering, prototyping and testing of component level technologies necessary for risk reduction on JPALS					
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603860F: <i>Joint Precision Approach and Landing Systems - Dem/Val</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Completed advanced threat mitigation work and modeling and simulation activities. Continued avionics risk reduction activities. FY 2012 Plans: Continues component technology development and avionics risk reduction activities. FY 2013 Base Plans: Will complete component technology development and avionics risk reduction activities. FY 2013 OCO Plans: N/A					
Title: JPALS Test and Evaluation Description: Includes planning and execution of the JPALS test and evaluation program FY 2011 Accomplishments: Continued preparation of the draft test and evaluation plan. FY 2012 Plans: Continues preparation of the final test and evaluation plan and supports the preparation for Source Selection and award of the EMD contract. FY 2013 Base Plans: Will support the EMD contract and develop Milestone B documentation to support Milestone B decision. FY 2013 OCO Plans: N/A	0.400	0.611	0.744	-	0.744
Title: JPALS Acquisition and Technical Services Support Description: Provides Acquisition and Technical services for systems engineering and program execution for JPALS FY 2011 Accomplishments: Provided system engineering and program support services for the JPALS Engineering and Support Services and Analysis projects. Provided system engineering and program support services to complete the JPALS RFP package and other required program documentation. FY 2012 Plans:	5.931	8.798	8.262	-	8.262

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603860F: <i>Joint Precision Approach and Landing Systems - Dem/Val</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Provides systems engineering and program support services as advisors to the JPALS Source Selection team and to support execution of the EMD contract. Provides systems engineering support to complete component technology and risk reduction efforts. FY 2013 Base Plans: Will provide systems engineering and program support services as advisors to the JPALS team and supports the EMD contract. Will also provide systems engineering support to complete component technology. FY 2013 OCO Plans: N/A					
Title: JPALS Eng & Manf Development Description: Includes the system design and development of JPALS ground systems leading to a Milestone B decision and award of the EMD contract in FY13. FY 2011 Accomplishments: N/A FY 2012 Plans: Supports efforts required for award of EMD contract tasked with developing Land Based JPALS. FY 2013 Base Plans: Will support the award of EMD contract to allow contractor to design LB JPALS system. FY 2013 OCO Plans: N/A	-	8.189	47.469	-	47.469
Accomplishments/Planned Programs Subtotals	12.452	19.879	57.975	-	57.975

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
• OPAF, PE0305014F, : <i>Joint Precision Approach and Landing System</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.248	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: *Research, Development, Test & Evaluation, Air Force*
BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE
PE 0603860F: *Joint Precision Approach and Landing Systems - Dem/Val*

E. Acquisition Strategy

Increment 2 Engineering, and Manufacturing Development (EMD) contract for development of Fixed-Based and Tactical JPALS systems will be competitively awarded.

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 4: Advanced Component Development & Prototypes (ACD&P)

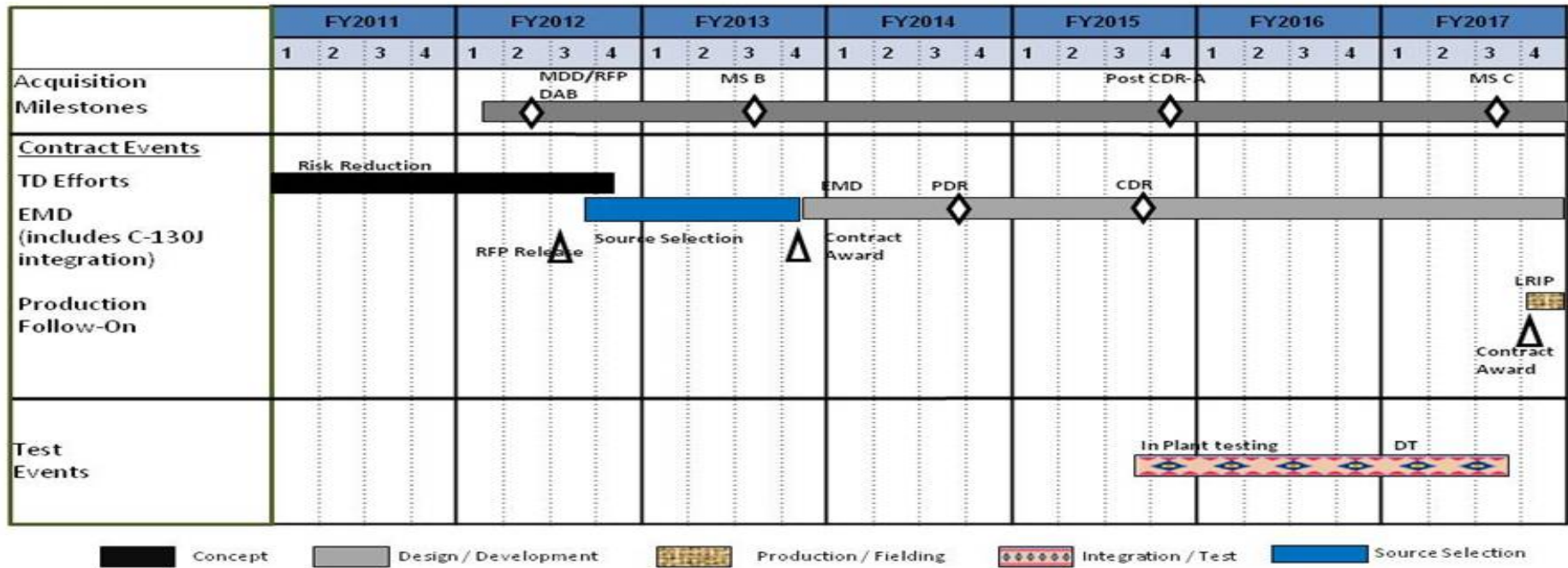
R-1 ITEM NOMENCLATURE

PE 0603860F: Joint Precision Approach and Landing Systems - Dem/Val

PROJECT

644652: Precision Landing Systems

Joint Precision Approach and Landing System (JPALS)



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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603860F: <i>Joint Precision Approach and Landing Systems - Dem/Val</i>	PROJECT 644652: <i>Precision Landing Systems</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Milestone Decision Document(MDD)/RFP Defense Acquisition Board (DAB)	2	2012	2	2012
Risk Reduction	1	2011	4	2012
RFP Release	3	2012	3	2012
Source Selection	3	2012	4	2013
Milestone B	3	2013	3	2013
Contract Award	4	2013	4	2013
Engineering, Manufacturing, Development (EMD)	4	2013	4	2017
Low Rate Initial Production (LRIP)	4	2017	4	2017
Milestone C	3	2017	3	2017
In-plant Testing	3	2015	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604015F: <i>Long Range Strike Bomber</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	192.816	294.911	291.742	-	291.742	550.312	1,045.328	1,727.171	2,707.315	Continuing	Continuing
643308: <i>Long Range Strike Bomber</i>	192.816	294.911	291.742	-	291.742	550.312	1,045.328	1,727.171	2,707.315	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 is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Director of Special Programs, OUSD(AT&L)/DSP.

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	198.957	197.023	293.975	-	293.975
Current President's Budget	192.816	294.911	291.742	-	291.742
Total Adjustments	-6.141	97.888	-2.233	-	-2.233
• Congressional General Reductions	-	-2.112			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	100.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-5.126	-			
• Other Adjustments	-1.015	-	-2.233	-	-2.233

Change Summary Explanation

FY11 adjusted by -\$1.015 for Congressional General Reduction

FY12 increase for +\$100.000 Congressional Add

FY13 reduction due to higher DoD priorities

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Director of Special Programs, OUSD(AT&L)/DSP.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604015F: <i>Long Range Strike Bomber</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: LRS Description: not applicable FY 2011 Accomplishments: This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Director of Special Programs, OUSD(AT&L)/DSP. FY 2012 Plans: This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Director of Special Programs, OUSD(AT&L)/DSP. FY 2013 Plans: This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Director of Special Programs, OUSD(AT&L)/DSP.	192.816	294.911	291.742
Accomplishments/Planned Programs Subtotals	192.816	294.911	291.742

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

Not applicable

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604015F: <i>Long Range Strike Bomber</i>	PROJECT 643308: <i>Long Range Strike Bomber</i>

PE 0604015F
No Schedule at this time

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604283F: <i>BMC2 Sensor 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
Total Program Element	12.994	30.362	114.417	-	114.417	-	-	-	-	Continuing	Continuing
646002: <i>Three Dimensional Expeditionary Long Range Radar</i>	12.994	30.362	114.417	-	114.417	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2012, Project 6002, Three Dimensional Expeditionary Long Range Radar (3DELRR), efforts were transferred from PE 0207412F, Control and Reporting Center, Project 5294, Theater Air Control System Improvement - Radar, in order to provide this pre-Major Defense Acquisition Program its own Program Element.

A. Mission Description and Budget Item Justification

Beginning in FY12, PE 0604283F funds the development of the Three-Dimensional Expeditionary Long-Range Radar (3DELRR) which will replace 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 enable battlespace awareness while at the same time mitigating the reliability, maintainability, and sustainability issues plaguing the AN/TPS-75 radar system. The 3DELRR will provide air controllers with a precise, real-time air picture of sufficient quality to conduct close control of individual aircraft under a wide range of environmental and operational conditions. In the case of theater missile defense operations, the 3DELRR will have the capability to detect, track, and disseminate target information to respective command and control nodes, such as the Control and Reporting Center (CRC), for warning and engagement. Similarly, the joint targeting process will benefit from trajectory information provided by the 3DELRR, including launch and impact locations.

The Pre-EMD efforts of the 3DELRR Program begin in FY12 and continue through FY13. Acquisition activities during this Pre-EMD effort timeframe will include, but are not limited to, source selection to award multiple contracts, requirements refinement, completion of the preliminary design development, continued software and hardware subsystem-level development, modeling and simulation to support the system development, implementation of mitigation techniques to combat existing and emerging system threats (including cyber warfare), test planning, and implementation of the program protection plan. A Preliminary Design Review (PDR), and Capability Demonstration C Event will be conducted during this timeframe to ensure that the program is successful in the development of a mature preliminary system design. Activities will also include studies and analyses to support both current program planning and execution and future program planning as well as finalization of Milestone B documentation and preparation for a Milestone B review.

In FY11 PE 0604283F BMC2 Sensor Development funded the Next Generation Aerial Ground Surveillance Radar strategy development. The primary mission of Next Generation Radar (NGR) is the development of an Open System Architecture (OSA) specification to guide all future USAF Ground Moving Target Indicator (GMTI) /Synthetic Aperture Radar (SAR) development. NGR will develop an integration environment to define, validate, and verify compliance with the government

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604283F: <i>BMC2 Sensor Development</i>
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OSA specification, through analysis and demonstration. NGR will develop a GMTI/SAR roadmap that assesses current and future radar technologies to guide future USAF investment strategy. NGR will provide the USAF a platform-independent OSA radar technology maturation and risk reduction effort. NGR will enable the future development of OSA prototype radar to allow the rapid fielding of capabilities addressing evolving needs of detection and tracking in support of future requirements and capability gaps.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	60.250	117.713	-	117.713
Current President's Budget	12.994	30.362	114.417	-	114.417
Total Adjustments	12.994	-29.888	-3.296	-	-3.296
• Congressional General Reductions	-	-0.888			
• Congressional Directed Reductions	-	-29.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.055	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	11.939	-	-3.296	-	-3.296

Change Summary Explanation

In FY 2011, Project 6002, Three Dimensional Expeditionary Long Range Radar (3DELRR), increase due to a Congressional add for GMTI Radar Development.

In FY 2012, Project 6002, Three Dimensional Expeditionary Long Range Radar (3DELRR), \$29M decrease due to Congressional Reduction.

In FY 2012 Congressional General Reduction (FFRDC, Sec. 8023) of \$0.888M.

In FY 2013, Project 6002, Three Dimensional Expeditionary Long Range Radar (3DELRR), \$3.296M decrease due to adjustment in schedule changes.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Next Generation Radar: Cong Add to Multi Platform-Radar Technology Insertion Program (MP-RTIP)	9.720	-	-	-	-

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604283F: <i>BMC2 Sensor Development</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>Description: Next Generation Radar (NGR) is the development of an Open System Architecture (OSA) specification to guide all future USAF Ground Moving Target Indicator (GMTI) /Synthetic Aperture Radar (SAR) development.</p> <p>FY 2011 Accomplishments: Created Open System Architecture (OSA) specification to guide all future USAF Ground Moving Target Indicator (GMTI) /Synthetic Aperture Radar (SAR) development. Developed an integration environment to define, validate, and verify compliance with the government OSA specification, through analysis and demonstration. Developed a GMTI/SAR roadmap that assesses current and future radar technologies to guide future USAF investment strategy.</p> <p>FY 2012 Plans: N/A</p> <p>FY 2013 Base Plans: N/A</p> <p>FY 2013 OCO Plans: N/A</p>					
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<p>Title: Technology Development (TD); Pre-EMD Period</p> <p>Description: Technology Development (TD) Phase and Pre-EMD efforts associated with delivering a new long-range ground-based sensor.</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans: Continuing the Technology Development (TD) Phase efforts of the 3DELRR Program with the start of the Pre-EMD period to develop a system design. Acquisition activities during FY12 include full and open source selection, preliminary design development, software and hardware subsystem-level development, to support system development, implementation of mitigation techniques to combat existing and emerging system threats (including cyber warfare), test planning, and implementation of the program protection plan. A combined System Requirements and System Functional Review (SRFR) ensured the program headed toward a single, mature</p>	-	22.465	101.370	-	101.370
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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604283F: <i>BMC2 Sensor Development</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
system design. Activities also include continuing development of Milestone B documentation as well as studies and analyses to support both current program planning and execution and future program planning. <i>FY 2013 Base Plans:</i> The Pre-EMD period of the 3DELRR Program will continue through FY13. Acquisition activities during FY13 will include, but are not limited to, completion of the preliminary design development, continuing software and hardware subsystem-level development, to support the system development, implementation of mitigation techniques to combat existing and emerging system threats (including cyber warfare), test planning, and implementation of the program protection plan. A System Function Review (SRFR), Preliminary Design Review (PDR), and Capability Demonstration C Event will ensure that the program achieves a mature preliminary system design. Activities will also include studies and analyses to support both current program planning and execution and future program planning as well as finalization of Milestone B documentation and meeting the Milestone B decision review. <i>FY 2013 OCO Plans:</i> N/A					
<i>Title:</i> Test and Evaluation Support <i>Description:</i> Test and Evaluation Support <i>FY 2011 Accomplishments:</i> N/A <i>FY 2012 Plans:</i> Test and evaluation support activities for continuing 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. <i>FY 2013 Base Plans:</i> Will continue test and evaluation support activities for 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. <i>FY 2013 OCO Plans:</i> N/A	-	0.127	2.189	-	2.189
<i>Title:</i> Systems Engineering/ Technical Support	-	6.883	9.457	-	9.457

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604283F: <i>BMC2 Sensor Development</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Description: Systems Engineering/Technical Support FY 2011 Accomplishments: N/A FY 2012 Plans: Systems Engineering/Technical Support FY 2013 Base Plans: Systems Engineering/Technical Support FY 2013 OCO Plans: N/A					
Title: Management Services Description: Management Services FY 2011 Accomplishments: Management Services FY 2012 Plans: Management Services FY 2013 Base Plans: Management Services FY 2013 OCO Plans: N/A	3.274	0.887	1.401	-	1.401
Accomplishments/Planned Programs Subtotals	12.994	30.362	114.417	-	114.417

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>
• RDT&E, PE 0207412F, Control ...: <i>RDT&E</i>	42.757	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	42.757

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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 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE
 PE 0604283F: *BMC2 Sensor Development*

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>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• RDT&E, PE, 0207455F, Three D...: <i>RDT&E</i>	0.000	0.000	0.000	0.000	0.000	70.160	69.533	89.985	54.000	Continuing	Continuing
• OPAF, PE, 0207455F, Three Dimens...: <i>OPAF</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	66.644	Continuing	Continuing

E. Acquisition Strategy

The Three-Dimensional Expeditionary Long-Range Radar (3DELRR) Project will provide full capability via full and open competition to further advance C2 capabilities supporting battlefield command and control.

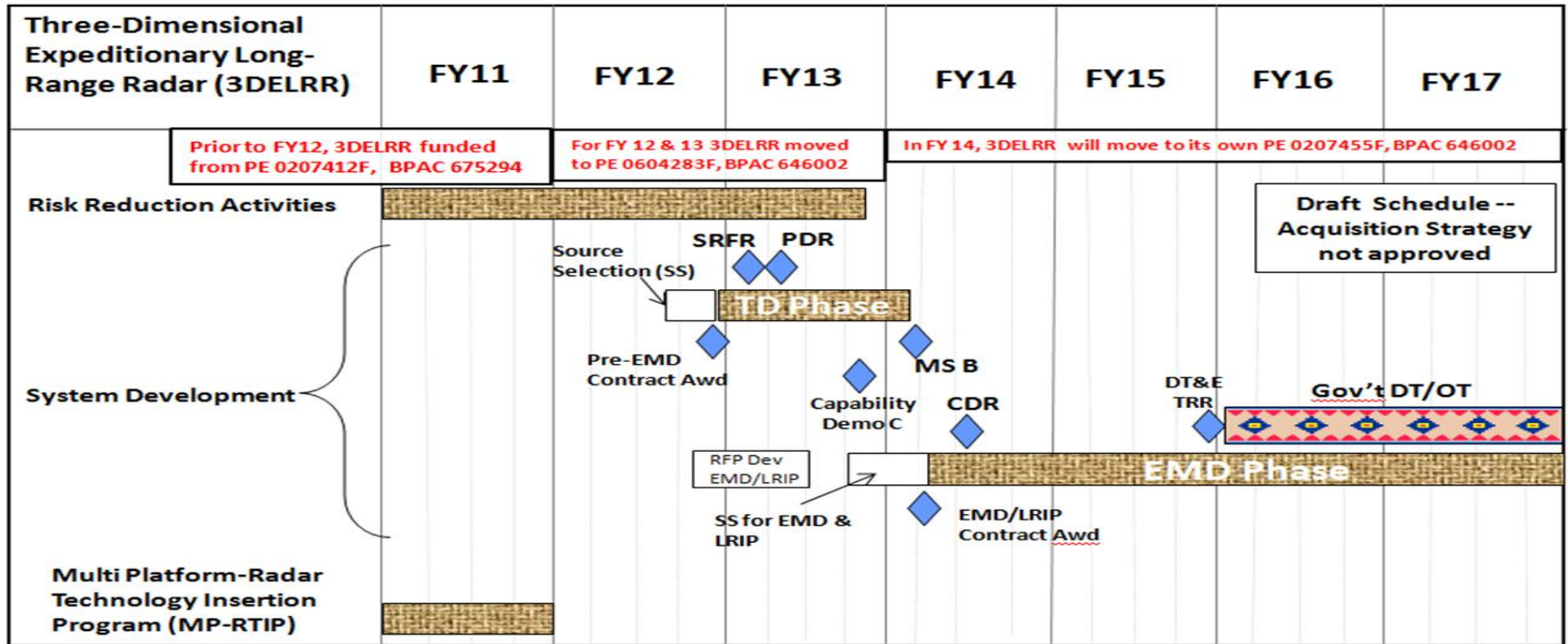
F. Performance Metrics

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 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0604283F: BMC2 Sensor Development	PROJECT 646002: Three Dimensional Expeditionary Long Range Radar

3DELRR Program Schedule



Design / development
 Integration / test
 Key events

CDR: Critical Design Review DT: Developmental Test EMD: Engineering and Manufacturing Development LRIP: Low Rate Initial Production
 MS: Milestone OT: Operational Test PDR: Preliminary Design Review SS: Source Selection SRFR: System Requirements Functional Review
 TD: Technology Development TRR: Test Readiness Review

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604283F: <i>BMC2 Sensor Development</i>	PROJECT 646002: <i>Three Dimensional Expeditionary Long Range Radar</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
3DELRR Risk Reduction Activities	1	2011	4	2013
3DELRR Source Selection	3	2012	4	2012
3DELRR Pre-EMD Contract Award	4	2012	4	2012
3DELRR RFP Development for EMD and LRIP Contract	4	2012	3	2013
3DELRR Tech Development (TD) Phase	4	2012	1	2014
3DELRR Preliminary Design Review (TD Phase)	2	2013	2	2013
3DELRR Capability Demonstration C	4	2013	4	2013
3DELRR Source Selection for EMD and LRIP Contract	4	2013	2	2014
3DELRR Milestone B	1	2014	1	2014
3DELRR EMD/LRIP Contract Award	2	2014	2	2014
3DELRR Engineering and Manufacturing Development (EMD) Phase	2	2014	4	2017
3DELRR Critical Design Review (CDR)	3	2014	3	2014
3DELRR Government Test Readiness Review (TRR)	4	2015	4	2015
3DELRR Development Testing / Operational Testing (DT/OT)	1	2016	4	2017
Multi Platform-Radar Technology Insertion Program	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604317F: <i>Technology Transfer</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	-	2.553	2.576	-	2.576	2.606	3.454	5.273	3.838	Continuing	Continuing
646003: <i>Partnership Intermediary Agreement(s)</i>	-	2.553	2.576	-	2.576	2.606	3.454	5.273	3.838	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

A. Mission Description and Budget Item Justification

Technology Transfer was called Defense Technology Transfer and Defense Technology Link (TechLink) in previous OSD budgets. This program was devolved from OSD to achieve efficiencies in program management.

The three-fold mission of Technology Transfer is:

- (1) integration of advanced commercial-sector technologies into Department of Defense (DoD) systems, particularly from non-traditional defense contractors;
- (2) spin-off of DoD-developed technologies to industry to make these technologies available for military acquisition; and
- (3) establishment of collaborative Research and Development (R&D) projects with the private sector for cost-sharing of new dual-use technology development.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes, since it involves system specific efforts that help expedite technology transfer to and from the commercial sector for operational use.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604317F: <i>Technology Transfer</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	-	2.553	2.571	-	2.571
Current President's Budget	-	2.553	2.576	-	2.576
Total Adjustments	-	-	0.005	-	0.005
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	0.005	-	0.005

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Major Thrust 1	-	2.553	2.576	-	2.576
Description: Enhance and expand transfer of technologies between DoD and the commercial sector.					
FY 2011 Accomplishments: N/A					
FY 2012 Plans: Actively promote and broker Cooperative Research And Development Agreements (CRADAs) between DoD labs and industry for development of technology with both commercial and military applications. This activity will particularly focus on non-traditional defense contractors and is intended (a) to help lower the expense of new defense-related technology development through cost-sharing with industry, and (b) to help DoD benefit from private-sector technology investments and innovations. Actively market DoD-developed technologies to U.S. companies to establish Patent License Agreements to commercialize these technologies for both civilian and military application.					
FY 2013 Base Plans: Continue to actively promote and broker CRADAs between DoD labs and industry for development of technology with both commercial and military applications. This activity will particularly focus on non-traditional defense contractors and is intended (a) to help lower the expense of new defense-related technology development through cost-sharing with industry, and (b) to help DoD benefit from private-sector technology investments and innovations.					

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604317F: <i>Technology Transfer</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Continue to actively market DoD-developed technologies to U.S. companies to establish Patent License Agreements to commercialize these technologies for both civilian and military application.					
<i>FY 2013 OCO Plans:</i> N/A					
Accomplishments/Planned Programs Subtotals	-	2.553	2.576	-	2.576

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
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.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604317F: <i>Technology Transfer</i>	PROJECT 646003: <i>Partnership Intermediary Agreement(s)</i>

FISCAL YEAR	FY11				FY12				FY13				FY14				FY15				FY16				FY17			
	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
FY12 FUNDING AWARD					X																							
FY12 PROGRESS REVIEW									O																			
FY13 FUNDING AWARD									X																			
FY13 PROGRESS REVIEW													O															
FY14 FUNDING AWARD													X															
FY14 PROGRESS REVIEW																	O											
FY15 FUNDING AWARD																	X											
FY15 PROGRESS REVIEW																					O							
FY16 FUNDING AWARD																					X							
FY16 PROGRESS REVIEW																									O			
FY17 FUNDING AWARD																												X

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604317F: <i>Technology Transfer</i>	PROJECT 646003: <i>Partnership Intermediary Agreement(s)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FY12 Funding Award	2	2012	2	2012
FY12 Progress Review	1	2013	1	2013
FY13 Funding Award	2	2013	2	2013
FY13 Progress Review	1	2014	1	2014
FY14 Funding Award	2	2014	2	2014
FY14 Progress Review	1	2015	1	2015
FY15 Funding Award	2	2015	2	2015
FY15 Progress Review	1	2016	1	2016
FY16 Funding Award	2	2016	2	2016
FY16 Progress Review	1	2017	1	2017
FY17 Funding Award	2	2017	2	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604327F: <i>Hardened Target Munitions</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	22.275	33.248	16.711	-	16.711	0.103	-	-	-	Continuing	Continuing
645341: <i>Direct Strike Penetrator Systems</i>	22.275	33.248	16.711	-	16.711	0.103	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Direct Strike Penetrator Systems project includes development of Massive Ordnance Penetrator (MOP), an advanced precision guided penetrator munition that will provide the Air Force with an improved capability using air-to-surface conventional munitions to attack HDBTs, such as bunker and tunnel facilities, with fewer weapons and number of missions necessary to defeat targets and increase overall survivability. The system will hold at risk those highest priority assets essential to the enemy's warfighting ability, which are heavily defended and protected, providing a critical global strike capability not currently met by inventory conventional weapons. Direct Strike Penetrator Systems also includes an analysis and report to evaluate the performance, operational suitability, and cost of alternative hard target defeat systems.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because effort are necessary to evaluate integrated technologies, representative modes or prototype systems in high fidelity and realistic operating environment.

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	22.389	38.248	1.624	-	1.624
Current President's Budget	22.275	33.248	16.711	-	16.711
Total Adjustments	-0.114	-5.000	15.087	-	15.087
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-5.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.114	-	15.087	-	15.087

Change Summary Explanation

In the FY12 appropriation, Congress reduced requested funding by \$5M due to contract delays. In FY13 PB, the Air Force added \$15.087M for MOP improvements.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604327F: <i>Hardened Target Munitions</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>Title: Massive Ordnance Penetrator (MOP) Weapon Development</p> <p>Description: Massive Ordnance Penetrator (MOP) Weapon Development. Make changes to the B-52 Technology Demonstration design to allow integration of the MOP onto the B-2A.</p> <p>FY 2011 Accomplishments: Complete analysis and provide data/documentation required to support B-2A design, integration, and weapon system effectiveness. Finalize system performance specification, which documents the weapon performance based on ground and flight tests. Update design to reflect changes needed to meet the weapon system performance objectives.</p> <p>FY 2012 Plans: Continue to design update to ensure weapon-to-aircraft compatibility and weapon performance in the operating environment. Updating warhead design and fuzing to provide full capability against COCOM designated target set. , Engineering support and any required updates to mission software. Modifications to source technical orders to include MOP. Labor and repair parts for MOP weapon trainer.</p> <p>FY 2013 Base Plans: Engineering support for testing of new warhead and fuzing systems designs.</p> <p>FY 2013 OCO Plans: N/A</p>	19.000	8.863	7.948	-	7.948
<p>Title: MOP System Test and Evaluation</p> <p>Description: Qualification Testing: MOP system qualification testing to allow weapon certification onto the B-2A. System Test and Evaluation: Conduct ground and flight tests of the MOP weapon system in order to demonstrate weapon effectiveness and suitability.</p> <p>FY 2011 Accomplishments: Complete multiple live and inert flight tests. Analyze data and evaluate the demonstrated weapon capability against the performance specification.</p> <p>FY 2012 Plans: Conduct qualification, ground and flight tests to verify design modifications.</p> <p>FY 2013 Base Plans:</p>	1.600	7.000	7.263	-	7.263

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604327F: <i>Hardened Target Munitions</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Conduct ground and flight tests to verify design mods. FY 2013 OCO Plans: N/A					
Title: MOP Flight Test Assets Fabrication Description: Flight Test Asset Fabrication and target construction. Fabricate all hardware (weapons, loading adapters, and carriage equipment) and targets needed to execute flight testing. FY 2011 Accomplishments: Build and instrument test targets. FY 2012 Plans: Build flight test weapons. FY 2013 Base Plans: N/A FY 2013 OCO Plans: N/A	0.400	5.585	-	-	-
Title: Program Office Support Description: Support weapon development activities such as design reviews and ground/flight test planning and execution. FY 2011 Accomplishments: Execute MOP flight test program and provide weapon performance capability to the user. FY 2012 Plans: Support weapon development and test activities. FY 2013 Base Plans: Support weapon development and test activities. FY 2013 OCO Plans: N/A	1.275	1.500	1.500	-	1.500
Title: Hard and Deeply Buried Target (HDBT) Capability Analysis	-	10.300	-	-	-

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604327F: <i>Hardened Target Munitions</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: Evaluation of alternative hard target weapons to assess the performance, operational effectiveness, operational suitability, and estimated system procurement costs based on findings in the the HDBT Initial Capabilities Document (ICD), dated September 2005.</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans: Evaluation of alternative hard target weapons to assess the performance, operational effectiveness, operational suitability, and estimated system procurement costs based on findings in the the HDBT Initial Capabilities Document (ICD), dated September 2005.</p> <p>FY 2013 Base Plans: N/A</p> <p>FY 2013 OCO Plans: N/A</p>					
Accomplishments/Planned Programs Subtotals	22.275	33.248	16.711	-	16.711

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 0101127F, B-2 Advanced Techno...: <i>MOP Integration</i>	2.480	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.480
• PE 0101127F, B-2 Squadrons (APAF): <i>MOP Integration</i>	7.764	7.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.764
• PE 028030F, WRM- Ammunition (PAAF): <i>MOP upgrade</i>	0.000	0.000	4.158	0.000	4.158	0.000	0.000	0.000	0.000	0.000	4.158

E. Acquisition Strategy
 MOP is a Quick reaction capability with a sole source cost plus incentive fee contract to a single contractor.

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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 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE

PE 0604327F: *Hardened Target Munitions*

F. Performance Metrics

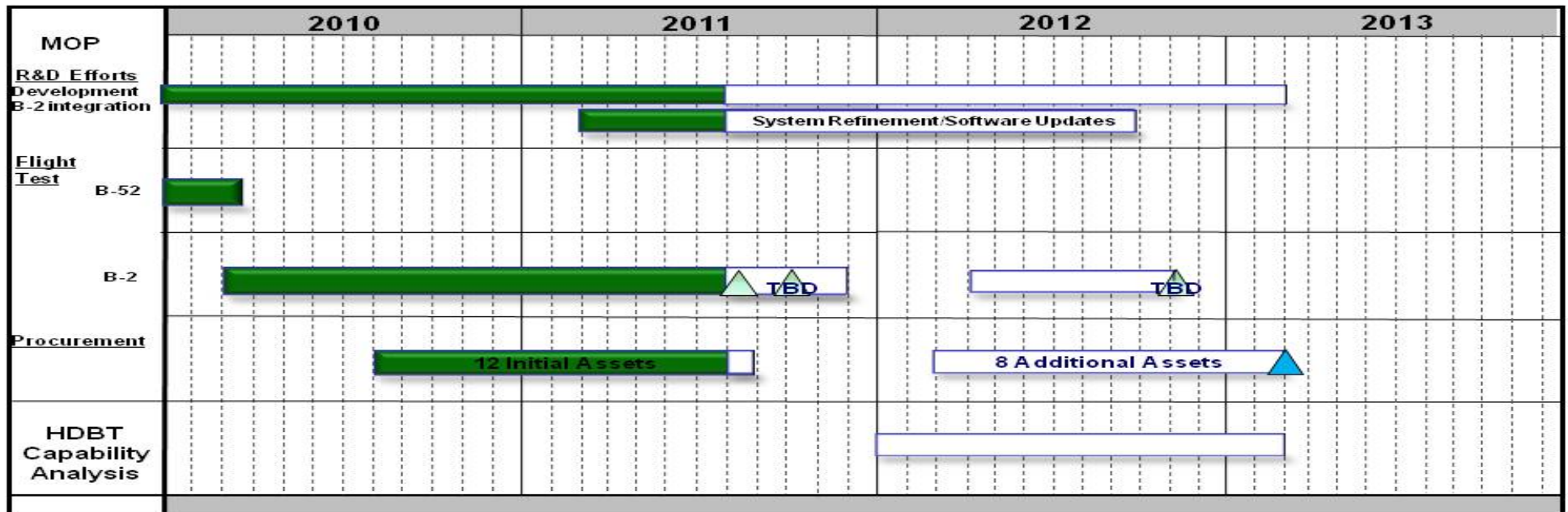
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604327F: <i>Hardened Target Munitions</i>	PROJECT 645341: <i>Direct Strike Penetrator Systems</i>



Direct Strike Penetrator Systems Top Level 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604327F: <i>Hardened Target Munitions</i>	PROJECT 645341: <i>Direct Strike Penetrator Systems</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Continue Design Modification & Qualification Testing	1	2011	1	2013
Continue Fuze & Ground Testing	1	2011	4	2013
Test Article Fabrication	1	2011	4	2012
Continue Flight Test	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604330F: <i>Joint Dual-Role Air Dominance Missile (JDRADM)</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	9.465	29.759	-	-	-	-	-	-	-	Continuing	Continuing
645342: <i>Concept Development</i>	9.465	29.759	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note
 In FY2013, PE 0604330F, Joint Dual-Role Air Dominance Missile (JDRADM), was terminated.

A. Mission Description and Budget Item Justification

JDRADM is envisioned as a multi-role (air-to-air/air-to-ground) missile for the 5th generation fighter force structure. It will provide increased flexibility, standoff range, and lethality to defeat 2020+ air and surface threats. It is intended for internal carriage on the F-22A and F-35, and external carriage on selected legacy aircraft. This program continues risk reduction and concept development efforts to ensure critical technologies are adequately assessed to support the Materiel Solution Analysis (MSA) phase of the program. The Joint Requirements Oversight Council (JROC) approved Initial Capabilities Document (ICD) refers to this missile as the Next Generation Missile (NGM).

The program completed a successful Materiel Development Decision (MDD) Defense Acquisition Board (DAB) on 29 Nov 10. The program was approved to enter the MSA phase and conduct and complete an evaluation of alternative weapons to assess the performance, operational effectiveness, operational suitability, and estimated system procurement costs based on findings in the NGM ICD, dated April 2010. It also designated the AF as the lead Service.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604330F: <i>Joint Dual-Role Air Dominance Missile (JDRADM)</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	9.799	29.759	47.575	-	47.575
Current President's Budget	9.465	29.759	-	-	-
Total Adjustments	-0.334	-	-47.575	-	-47.575
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.284	-			
• Other Adjustments	-0.050	-	-47.575	-	-47.575

Change Summary Explanation

FY2011 adjustments (Cong General Reductions -\$0.050, Reductions \$0, Cong Directed Reductions \$0, Cong Adds \$0, Cong Directed Transfers \$0).

FY2013 - JDRADM was terminated for higher AF priorities.

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: Risk Reduction Studies/Concept Development/Technology Maturation</p> <p>FY 2011 Accomplishments: Start a joint effort with DARPA for an advanced missile demonstration to mature critical technologies during MSA. Develop/demonstrate advanced control, agility and propulsion technologies; along with responsive warhead/fuzing capabilities; to give single missile near full spherical intercept capability independent of target orientation and velocity. Finalize demonstration missile design. Continue mission support and provide program management to ongoing product development.</p> <p>FY 2012 Plans: Continue support for the advanced missile demonstration to mature critical technologies during MSA. Continue mission support and provide program management to ongoing product development.</p> <p>FY 2013 Base Plans:</p>	8.265	27.159	-	-	-

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604330F: <i>Joint Dual-Role Air Dominance Missile (JDRADM)</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: Materiel Solution Analysis (MSA)	1.200	2.600	-	-	-
Description: Evaluation of Alternative Weapons/Prep for Technology Development (TD) Phase					
FY 2011 Accomplishments: Continue funding for the MSA phase. Conduct the evaluation of alternative weapons. Begin preparation for Milestone A and entrance into TD phase in FY13. Continue mission support and provide program management to execute MSA.					
FY 2012 Plans: Continue to fund MSA activities and preparation for Milestone A and entrance into TD phase in FY13. Continue mission support and provide program management to execute MSA.					
FY 2013 Base Plans: N/A					
FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	9.465	29.759	-	-	-

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 0207163F: AMRAAM, RDT&E: 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
 Next Generation Missile (NGM), or JDRADM, completed the pre-MSA phase of acquisition with risk reduction and critical technology maturity efforts supported by the Air Force Research Lab (AFRL). The program completed an MDD Defense Acquisition Board (DAB) in Nov 10 and proceeded into the MSA phase. Development of the NGM acquisition/contract strategy and formalizing requirements continues to evolve pending the completion of the evaluation of alternative weapons effort. 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0604330F: <i>Joint Dual-Role Air Dominance Missile (JDRADM)</i>

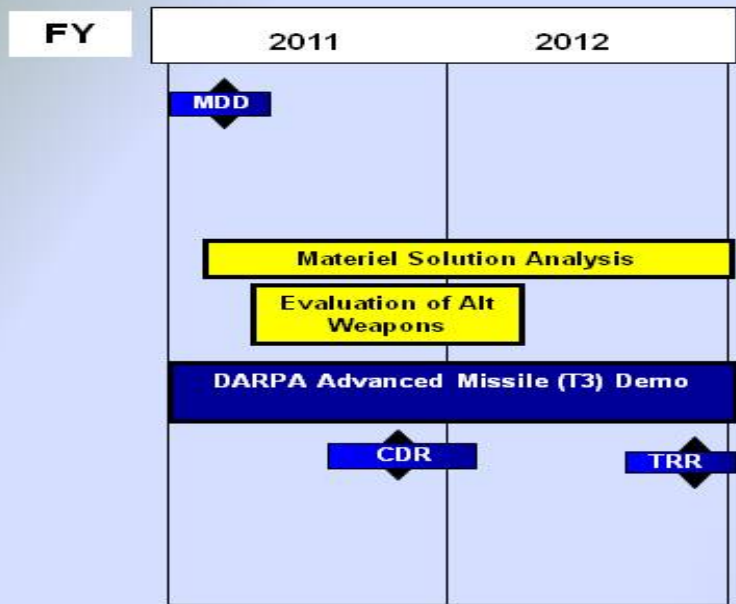
preliminary findings of this effort have determined that the technology maturation is not consistent with proceeding to the Technology Development (TD) phase and the cost at this time is too prohibitive; therefore, the program has been terminated.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604330F: <i>Joint Dual-Role Air Dominance Missile (JDRADM)</i>	PROJECT 645342: <i>Concept 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604330F: <i>Joint Dual-Role Air Dominance Missile (JDRADM)</i>	PROJECT 645342: <i>Concept Development</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NGM MDD DAB completed/approved	1	2011	1	2011
MSA Phase	1	2011	1	2013
AF/DARPA Triple Target Terminator (T3) Critical Design Review (CDR)	4	2011	4	2011
Evaluation of Alternative Weapons	2	2011	1	2012
AF/DARPA T3 Test Readiness Review (TRR)	4	2012	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604337F: <i>Requirements Analysis and Maturation</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	32.797	23.511	16.343	-	16.343	16.018	15.911	16.316	16.532	Continuing	Continuing
645349: <i>Non-Space Systems Requirements Analysis & Maturation</i>	26.298	17.837	11.649	-	11.649	11.357	11.245	11.520	11.673	Continuing	Continuing
64A024: <i>Space Systems Requirements Analysis & Maturation</i>	6.499	5.674	4.694	-	4.694	4.661	4.666	4.796	4.859	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Requirements Analysis and Maturation (RAM) program addresses a critical need for decision-quality information prior to initiating a new acquisition program by executing integrated materiel studies and analyses across the Air Force (AF) enterprise (air, space, and cyber). A number of Department of Defense (DoD), Government Accountability Office, and industry studies point to a need for more disciplined, early-phase systems engineering and pre-systems acquisition planning to produce the detailed acquisition information that previously did not surface until after the initiation of a program. Activities funded by the RAM program element include system and sub-system concept development, acquisition strategy development, modeling and simulation, cost analysis, pre-planning required for successful demonstration and validation of prototypes and systems-of-systems demonstrations, and costs associated with these activities, to include travel. This comprehensive approach supports acquisition courses of action to initiate high-confidence acquisition programs. Specific efforts are determined each year by requests submitted from AF Major Commands and subsequently prioritized and approved by the AF Development Planning Governance Structure. This effort is in Budget Activity 4, Advanced Component Development and Prototypes, since it involves system specific efforts that expedite technology transition from the laboratory to operational use.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	34.339	24.217	16.312	-	16.312
Current President's Budget	32.797	23.511	16.343	-	16.343
Total Adjustments	-1.542	-0.706	0.031	-	0.031
• Congressional General Reductions	-	-0.706			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.983	-			
• Other Adjustments	-0.559	-	0.031	-	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: *Research, Development, Test & Evaluation, Air Force*
BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE

PE 0604337F: *Requirements Analysis and Maturation*

Change Summary Explanation

In FY11, Other Adjustments include: -0.386 (Congressional General Reductions), -0.173 (Congressional Rescissions)

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604337F: <i>Requirements Analysis and Maturation</i>	PROJECT 645349: <i>Non-Space Systems Requirements Analysis & Maturation</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
645349: <i>Non-Space Systems Requirements Analysis & Maturation</i>	26.298	17.837	11.649	-	11.649	11.357	11.245	11.520	11.673	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Non-Space Systems project is responsible for analyzing documented capability needs and requirements to identify potential materiel shortfalls and opportunities; devising candidate materiel solution options to address AF non-space capability needs and shortfalls; and conducting coordinated pre-systems acquisition planning activities that address requirements, schedule, cost, technology, and acquisition strategy for air and cyber efforts.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: Major Thrust 1</p> <p>Description: Conduct long-range capability analyses by analyzing documented warfighter capability needs and requirements to identify potential materiel shortfalls and opportunities.</p> <p>FY 2011 Accomplishments: Developed capability roadmaps, advanced concept studies and analyses, and derived technology needs required to realize future materiel solutions to warfighter capability needs.</p> <p>FY 2012 Plans: Develop capability roadmaps, advanced concept studies and analyses, and derive technology needs required to realize future materiel solutions to warfighter capability needs.</p> <p>FY 2013 Base Plans: Continue to develop capability roadmaps, advanced concept studies and analyses, and derive technology needs required to realize future materiel solutions to warfighter capability needs.</p> <p>FY 2013 OCO Plans: N/A.</p>	4.159	2.962	1.857	-	1.857
<p>Title: Major Thrust 2</p> <p>Description: Conduct concept development activities, including early-phase systems engineering, by devising candidate materiel solution options to address AF air and cyber capability needs and shortfalls.</p>	17.650	11.853	7.812	-	7.812

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604337F: <i>Requirements Analysis and Maturation</i>	PROJECT 645349: <i>Non-Space Systems Requirements Analysis & Maturation</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.					
Accomplishments/Planned Programs Subtotals	26.298	17.837	11.649	-	11.649

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

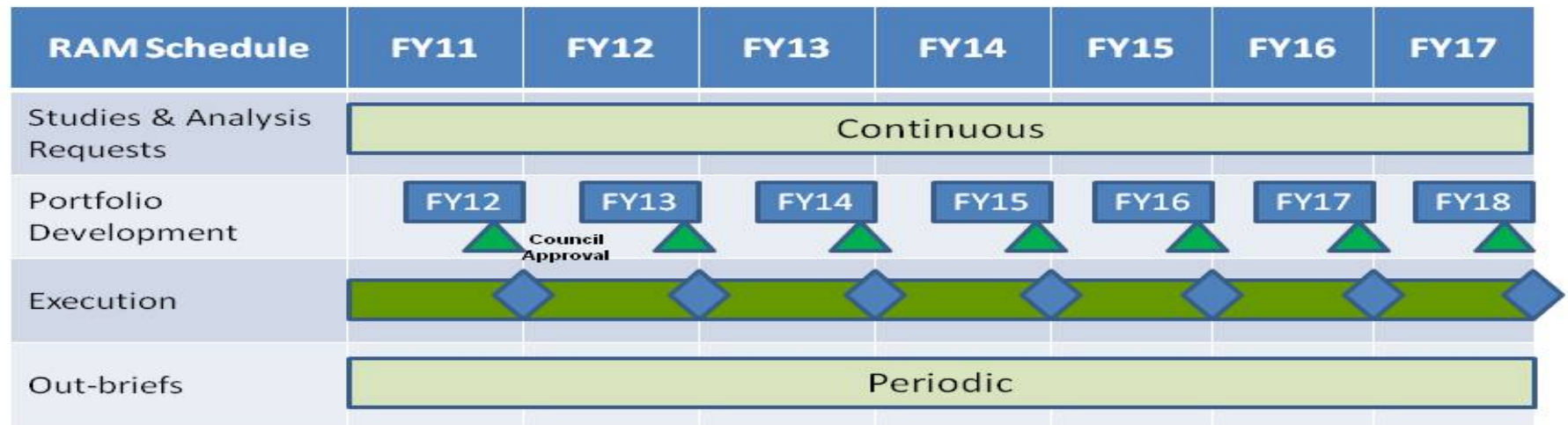
D. Acquisition Strategy
All contracts funded in this program element will be awarded using competitive procedures.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604337F: <i>Requirements Analysis and Maturation</i>	PROJECT 645349: <i>Non-Space Systems Requirements Analysis & Maturation</i>

Requirements Analysis and Maturation (RAM) Master 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604337F: <i>Requirements Analysis and Maturation</i>	PROJECT 645349: <i>Non-Space Systems Requirements Analysis & Maturation</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Studies & Analysis Requests	1	2011	4	2017
FY12 RAM Portfolio Development	3	2011	3	2011
FY13 RAM Portfolio Development	3	2012	3	2012
FY14 RAM Portfolio Development	3	2013	3	2013
FY15 RAM Portfolio Development	3	2014	3	2014
FY16 RAM Portfolio Development	3	2015	3	2015
FY17 RAM Portfolio Development	3	2016	3	2016
RAM Effort Execution	1	2011	4	2017
Studies & Analysis Outbriefs	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604337F: <i>Requirements Analysis and Maturation</i>	PROJECT 64A024: <i>Space Systems Requirements Analysis & Maturation</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
64A024: <i>Space Systems Requirements Analysis & Maturation</i>	6.499	5.674	4.694	-	4.694	4.661	4.666	4.796	4.859	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Space Systems project is responsible for analyzing documented capability needs and requirements to identify potential materiel shortfalls and opportunities; devising candidate materiel solution options to address AF space capability needs and shortfalls; and conducting coordinated pre-systems acquisition planning activities that address requirements, schedule, cost, technology, and acquisition strategy for space efforts.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: Major Thrust 1</p> <p>Description: Conduct long-range capability analyses by analyzing documented warfighter capability needs and requirements to identify potential materiel shortfalls and opportunities.</p> <p>FY 2011 Accomplishments: Developed capability roadmaps, advanced concept studies and analyses, and derived technology needs required to realize future materiel solutions to warfighter capability needs.</p> <p>FY 2012 Plans: Develop capability roadmaps, advanced concept studies and analyses, and derive technology needs required to realize future materiel solutions to warfighter capability needs.</p> <p>FY 2013 Base Plans: Continue to develop capability roadmaps, advanced concept studies and analyses, and derive technology needs required to realize future materiel solutions to warfighter capability needs.</p> <p>FY 2013 OCO Plans: N/A.</p>	1.021	0.881	0.703	-	0.703
<p>Title: Major Thrust 2</p> <p>Description: Conduct concept development activities, including early-phase systems engineering, by devising candidate materiel solution options to address AF space capability needs and shortfalls.</p>	4.006	3.346	2.820	-	2.820

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604337F: <i>Requirements Analysis and Maturation</i>	PROJECT 64A024: <i>Space Systems Requirements Analysis & Maturation</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.					
Accomplishments/Planned Programs Subtotals	6.499	5.674	4.694	-	4.694

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

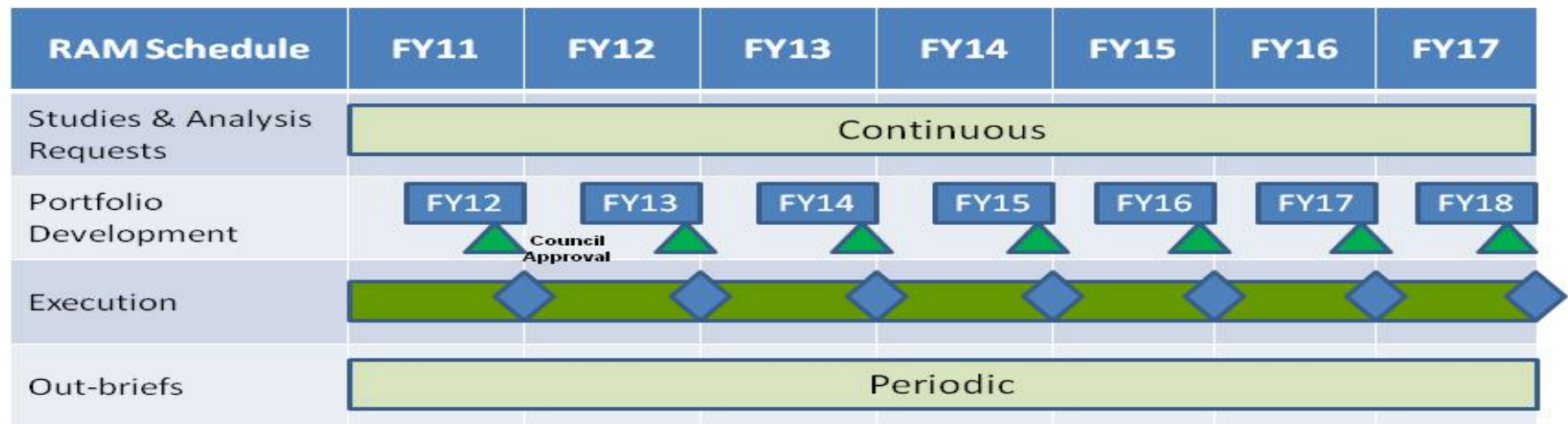
D. Acquisition Strategy
All contracts funded in this program element will be awarded using competitive procedures.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604337F: <i>Requirements Analysis and Maturation</i>	PROJECT 64A024: <i>Space Systems Requirements Analysis & Maturation</i>

Requirements Analysis and Maturation (RAM) Master 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604337F: <i>Requirements Analysis and Maturation</i>	PROJECT 64A024: <i>Space Systems Requirements Analysis & Maturation</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Studies & Analysis Requests	1	2011	4	2017
FY12 RAM Portfolio Development	3	2011	3	2011
FY13 RAM Portfolio Development	3	2012	3	2012
FY14 RAM Portfolio Development	3	2013	3	2013
FY15 RAM Portfolio Development	3	2014	3	2014
FY16 RAM Portfolio Development	3	2015	3	2015
FY17 RAM Portfolio Development	3	2016	3	2016
RAM Effort Execution	1	2011	4	2017
Studies & Analyses Outbriefs	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604422F: <i>Weather Satellite Follow-On</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	-	123.681	2.000	-	2.000	-	-	-	-	Continuing	Continuing
644289: <i>Weather Satellite Follow-On</i>	-	123.681	2.000	-	2.000	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note
 Weather Satellite Follow-on (WSF) activities were funded in this PE (0604422F) starting in FY 2012.

A. Mission Description and Budget Item Justification

The Defense Weather Satellite System (DWSS) program in RDT&E, AF PE 0305178F was terminated per Congressional direction in FY 2012. DoD will utilize the remaining Defense Meteorological Satellite Program (DMSP) satellites to satisfy DoD overhead weather requirements until a follow-on capability can be acquired.

Weather Satellite Follow-on (WSF) activities support requirements analysis, analysis of alternatives (AoA), and acquisition of capabilities which will satisfy DoD overhead terrestrial and space weather requirements during, and after, fly-out of DMSP.

WSF activities provide a foundation to transition from the current DMSP program to a future capability which will satisfy DoD overhead weather requirements. The range of WSF activities include requirements development and trades, analysis and possible implementation of alternative sources of weather data, architecture and systems engineering analysis, and technical risk reduction for viable sensor and spacecraft technologies. Use of affordable, mature technology will be emphasized for the WSF activities.

BA-4 - This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604422F: <i>Weather Satellite Follow-On</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	-	-	-	-	-
Current President's Budget	-	123.681	2.000	-	2.000
Total Adjustments	-	123.681	2.000	-	2.000
• Congressional General Reductions	-	-1.319			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	125.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	2.000	-	2.000

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

Project: 644289: *Weather Satellite Follow-On*

Congressional Add: *Weather Satellite Follow-on (WSF)*

Congressional Add Subtotals for Project: 644289

Congressional Add Totals for all Projects

	FY 2011	FY 2012
	-	123.681
Congressional Add Subtotals for Project: 644289	-	123.681
Congressional Add Totals for all Projects	-	123.681

Change Summary Explanation

The Weather Satellite Follow-on (WSF) Program Element (PE 0604422F) was created in response to the FY 2012 congressional add of \$125M.

FY12: \$125M congressional add

-\$1.319M congressional general reduction

FY13: Continue activities started in FY12 (+\$2.0M)

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

	FY 2011	FY 2012	FY 2013
Title: WSF	-	-	2.000
Description: Weather Satellite Follow-on (WSF) activities support requirements analysis, analysis of alternatives (AoA), and acquisition of capabilities which will satisfy DoD overhead terrestrial and space weather requirements during, and after, fly-out of the Defense Meteorological Satellite Program (DMSP).			
FY 2013 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604422F: <i>Weather Satellite Follow-On</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Continue FY 2012 activities and finalize the AoA. The AoA results will inform subsequent DoD programming decisions for the weather satellite follow-on.			
Accomplishments/Planned Programs Subtotals	-	-	2.000

	FY 2011	FY 2012
Congressional Add: Weather Satellite Follow-on (WSF)	-	123.681
FY 2012 Plans: Conduct Analysis of Alternatives (AoA) and pre-acquisition activities for a follow-on to the Defense Meteorological Satellite Program (DMSP) Block 5; develop analytical tools and evaluate ground, space, and user architectures; conduct system trades and analysis and requirements development; perform risk reduction activities for optical, infra-red, space weather, microwave sensors and spacecraft; investigate and implement alternatives for exploitation of non-traditional weather data sources; provide experimental satellite data to DoD users to mitigate the risk of weather forecasting gaps due to termination of the Defense Weather Satellite System (DWSS).		
Congressional Adds Subtotals	-	123.681

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

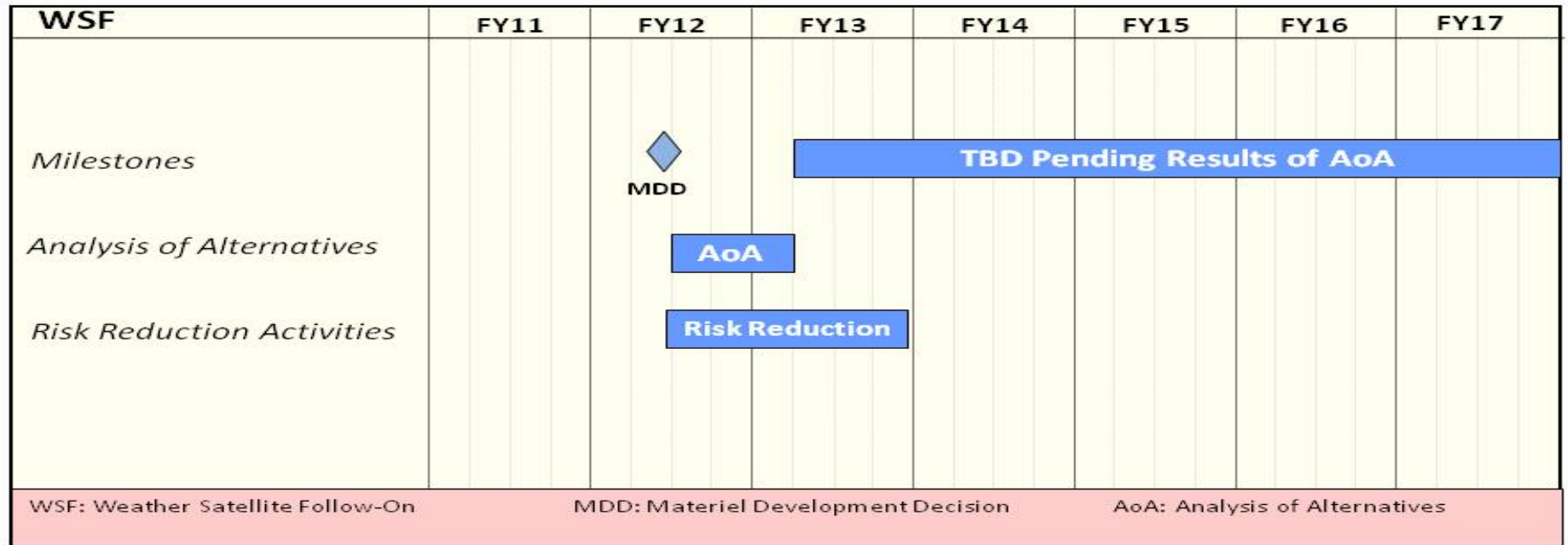
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000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

E. Acquisition Strategy
The acquisition strategy for the Weather Satellite Follow-On (WSF) will be informed by an Analysis of Alternatives with an anticipated completion in 2Q FY 2013.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604422F: <i>Weather Satellite Follow-On</i>	PROJECT 644289: <i>Weather Satellite Follow-On</i>



- Concept activities
- Design / development
- Integration/Test/Fielding
- Key events
- Operations and Sustainment

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604422F: <i>Weather Satellite Follow-On</i>	PROJECT 644289: <i>Weather Satellite Follow-On</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Material Development Decision (MDD)	2	2012	2	2012
Analysis of Alternatives (AoA)	3	2012	1	2013
Risk Reduction Activities	3	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604436F: <i>Next-Generation MILSATCOM Technology</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	19.898	-	-	-	-	-	-	-	-	Continuing	Continuing
646001: <i>Evolved MILSATCOM</i>	19.898	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

A. Mission Description and Budget Item Justification

This program element funds technology demonstration, development and study efforts for future Satellite Communications (SATCOM) capability enhancements. These capabilities could be utilized on future blocks of current SATCOM systems, hosted SATCOM payloads, or next-generation SATCOM systems. The goal of the effort is to sufficiently mature new technologies, system architectures, and business concepts to reduce overall risk of future SATCOM efforts and improve space/ground/terminal synchronization. No funds are requested in FY13.

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	-	-	-	-	-
Current President's Budget	19.898	-	-	-	-
Total Adjustments	19.898	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	19.898	-	-	-	-

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

Project: 646001: *Evolved MILSATCOM*

Congressional Add: *Acquisition Planning and Studies*

Congressional Add Subtotals for Project: 646001

Congressional Add Totals for all Projects

	FY 2011	FY 2012
	19.898	-
	19.898	-
	19.898	-

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604436F: <i>Next-Generation MILSATCOM Technology</i>
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Change Summary Explanation

FY11 Other Adjustment Row:
 -\$0.102M Congressional General Reduction
 +\$20.0M Congressional Add

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

	FY 2011	FY 2012
Congressional Add: Acquisition Planning and Studies	19.898	-
FY 2011 Accomplishments: Funded the extension of three commercial Broad Agency Announcement studies. Funded support of the Resilient Basis for Satellite Communications (RBS) in Joint Operations study and other related activities. The RBS will assess the future of satellite communications within the context of the National Security Space Strategy in the nuclear, contested, and benign operating environments and will focus on worldwide protected and wideband communications services. Funded Lincoln Laboratories development of a Local Area Sensor System (LASS) processor for a future MILSATCOM satellite.		
Congressional Adds Subtotals	19.898	-

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>
• R-30: <i>RDT&E AF, PE 0603430F, Advanced EHF MILSATCOM (SPACE), BPAC 644050</i>	385.033	276.675	175.578	0.000	175.578	64.357	38.167	0.000	0.000	0.000	6,932.493
• R30: <i>RDT&E AF, PE 0603430F, Advanced EHF MILSATCOM (SPACE), BPAC 64A030</i>	0.000	120.771	53.593	0.000	53.593	89.500	100.867	120.365	100.087	Continuing	Continuing
• P-15: <i>MPAF, PE 0303604F, Advanced EHF</i>	256.863	551.458	557.205	0.000	557.205	543.036	487.802	698.306	1,039.230	Continuing	Continuing
• R-39: <i>RDT&E AF, PE 0603854F, Wideband Global SATCOM</i>	56.683	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	411.339
• P-17: <i>MPAF, PE 0303600F, Wideband Gapfiller Satellites</i>	558.752	792.857	36.835	0.000	36.835	60.998	88.200	86.396	85.800	38.000	3,375.899
• R-180: <i>RDT&E AF, PE 0303601F, MILSATCOM Terminals</i>	298.736	236.581	107.237	0.000	107.237	157.787	58.209	8.202	8.310	Continuing	Continuing
• P-46: <i>OPAF, PE 0303601F, MILSATCOM Terminals</i>	186.263	36.229	47.333	0.000	47.333	37.674	80.191	138.021	130.982	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604436F: <i>Next-Generation MILSATCOM Technology</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>
• TBD: <i>APAF, PE 0303601F, MILSATCOM Terminals</i>	12.030	3.821	4.580	0.000	4.580	4.320	77.174	204.981	180.096	Continuing	Continuing

E. Acquisition Strategy

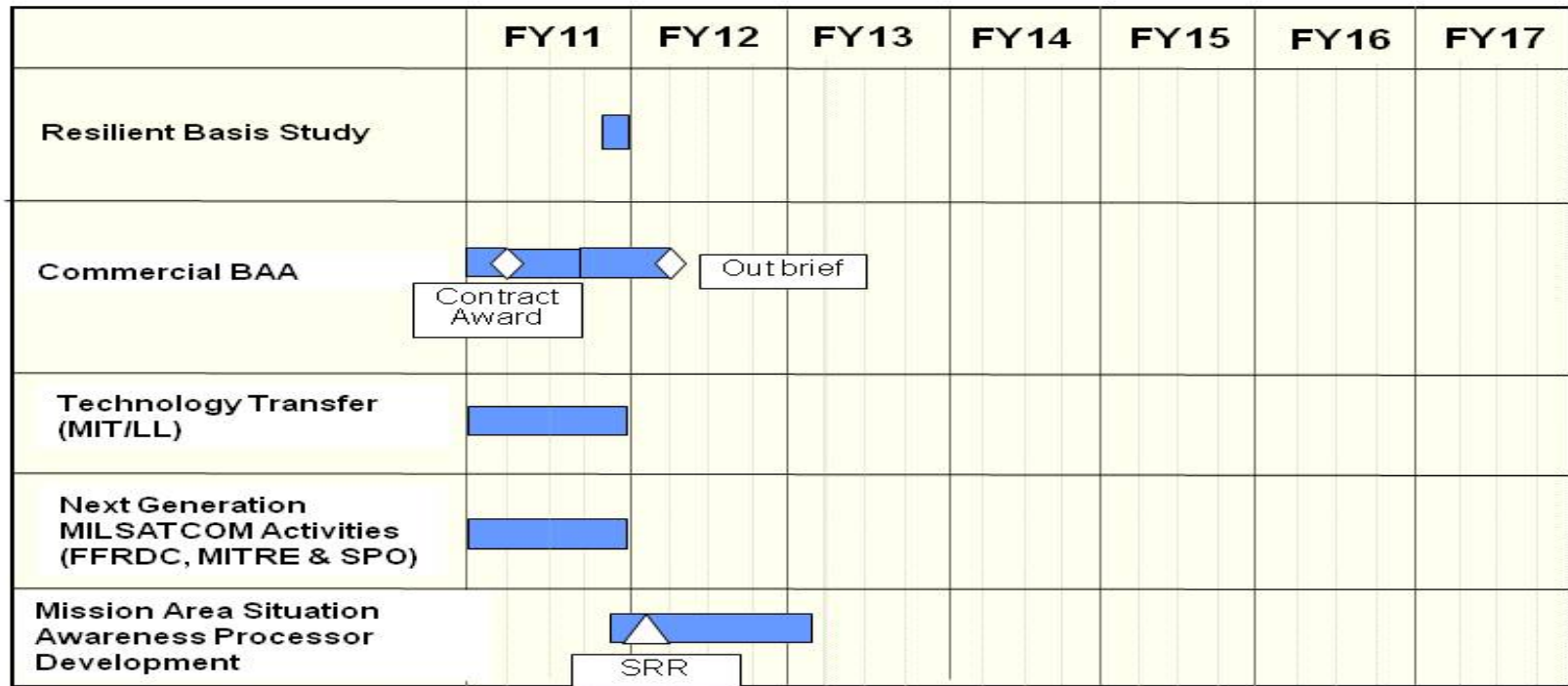
Upon completion of the Resilient Basis for SATCOM in Joint Operations study, a Materiel Development Decision (MDD) will be conducted which will determine the mix of enhancements to existing systems and potential for incorporating new military-unique and/or commercial capabilities.

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: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604436F: <i>Next-Generation MILSATCOM Technology</i>	PROJECT 646001: <i>Evolved MILSATCOM</i>



BAA: Broad Agency Announcement
 MIT/LL: Massachusetts Institute of Technology/Lincoln Labs
 FFRDC: Federally Funded Research & Development Center
 SPO: System Program Office
 SRR: System Requirements Review

■ Concept activities
 ▲◆ 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604436F: <i>Next-Generation MILSATCOM Technology</i>	PROJECT 646001: <i>Evolved MILSATCOM</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Resilient Basis for SATCOM in Joint Operations study	4	2011	3	2012
Mission Area Situation Awareness Processor System Requirements Review	1	2012	1	2012
Outbrief Commercial Broad Area Announcements (BAAs)	1	2012	1	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604635F: <i>Ground Attack Weapons Fuze 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
Total Program Element	22.398	24.467	9.423	-	9.423	26.721	4.480	-	-	Continuing	Continuing
645312: <i>Hard Target Void Sensing Fuze</i>	22.398	24.467	9.423	-	9.423	26.721	4.480	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Hard Target Void Sensing Fuze (HTVSF) is an advanced system designed to provide fuzing and void sensing functions for a weapon to penetrate and destroy hardened targets protected by multiple layers of soil and/or reinforced concrete. The HTVS Fuze shall also provide in-flight cockpit programmability, safing and arming, multi-function (time delay and void sensing) and multi-delay arming. FY 2012 and FY 2013 funding includes follow-on risk reduction and Engineering, Manufacturing, and Development (EMD) efforts to the the Hard Target Void Sensing Fuze (HTVSF) Joint Capability Technology Demonstration (JCTD) previously funded in PE 0604602F, Armament Ordnance Development for Research, Development, Test & Engineering (RDT&E). This Program Element was created to include the whole spectrum of fuze development and is positioned in Budget Activity 4 - Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

Procurement of the HTVSF is funded in PE 0208030F, WRM Ammunition, in Procurement of Ammunition, Air Force (PAAF).

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	32.513	24.467	5.185	-	5.185
Current President's Budget	22.398	24.467	9.423	-	9.423
Total Adjustments	-10.115	-	4.238	-	4.238
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-10.115	-	4.238	-	4.238

Change Summary Explanation

FY11: Adjustments include Congressional General Reductions -\$0.115, Cong Directed Reductions -\$10.0

FY13: Adjustment (\$4.238M) to support total program requirement

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0604635F: <i>Ground Attack Weapons Fuze Development</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Title: Engineering and Manufacturing Development Contract</p> <p>Description: Conduct HTVSF EMD effort.</p> <p>FY 2011 Accomplishments: Conducted HTVSF EMD effort to develop a joint use Air Force/Navy item to interface with legacy penetrator weapons to provide a capability to survive a 5K-15K psi penetration environment and detonate in a specific void inside the target or at a specific delay time programmed into the fuze. Effort included acquisition of test hardware and test and evaluation efforts.</p> <p>FY 2012 Plans: Continue EMD program effort to develop a joint use Air Force/Navy item to interface with legacy penetrator weapons to provide a capability to survive a 5K - 15K psi penetration environment and detonate in a specific void inside the target or at a specific delay time programmed into the fuze.</p> <p>FY 2013 Plans: Continue EMD program effort to develop a joint use Air Force/Navy item to interface with legacy penetrator weapons to provide a capability to survive a 5K - 15K psi penetration environment and detonate in a specific void inside the target or at a specific delay time programmed into the fuze.</p>		14.888	21.405	3.838
<p>Title: Mgmt Analysis and Support</p> <p>Description: Management/analysis support: including Critical Design Reviews (CDRs) required to ensure all additional post JCTD requirements are implemented</p> <p>FY 2011 Accomplishments: Main effort was the delta CDR to ensure all additional post-JCTD requirements were implemented.</p> <p>FY 2012 Plans: Continued management and analysis support for the HTVSF EMD program with emphasis on 4th Qtr delta CDR</p> <p>FY 2013 Plans: Continued management and analysis support for the HTVSF EMD program</p>		1.443	1.155	1.000
<p>Title: Test Support</p> <p>Description: Test: build "hard" targets/prep for sled/flight test range events</p> <p>FY 2011 Accomplishments:</p>		2.354	1.000	3.452

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0604635F: <i>Ground Attack Weapons Fuze Development</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Built/acquired hard targets/prep for sled/flight test events in support of EMD. FY 2012 Plans: Government support of sled and flight testing for HTVSF EMD program to include build and prep of hard targets for sled/flight test events and support for the actual test events. FY 2013 Plans: Government support of sled and flight testing for HTVSF EMD program to include build and prep of hard targets for sled/flight test events and support for the actual test events.				
Title: External Support Description: Provide Subject Matter Experts to support EMD efforts. FY 2011 Accomplishments: Provided specialized expertise in manufacturing, testing and safety support for the HTVSF EMD program. FY 2012 Plans: Provide specialized expertise in manufacturing, testing and safety support for the HTVSF EMD program. FY 2013 Plans: Provide specialized expertise in manufacturing, testing and safety support for the HTVSF EMD program.		0.905	0.907	0.526
Title: Government-Furnished Equipment/Government-Furnished Parts (GFE/GFP) Items Description: Ensure required government furnished equipment is available for the EMD program to include items such as bomb bodies/warheads, tailkits, and telemetry sets. FY 2011 Accomplishments: Provided government furnished items such as bomb bodies/warheads, tailkits and telemetry sets to support HTVSF EMD contract efforts and testing listed to support all contract and testing efforts. FY 2012 Plans: N/A FY 2013 Plans: Provide government furnished items such as bomb bodies/warheads, tailkits and telemetry sets to support HTVSF EMD contract efforts and testing listed to support all contract and testing efforts.		2.808	-	0.607
Accomplishments/Planned Programs Subtotals		22.398	24.467	9.423

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604635F: <i>Ground Attack Weapons Fuze Development</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>
• PAAF, PE 0208030F, WRM <i>Ammunition: HTVSF Procurement</i>	0.000	0.000	0.130	0.000	0.130	19.280	38.500	39.510	41.700	Continuing	Continuing

E. Acquisition Strategy

EMD Awarded to Alliant TechSystems Operations LLC
 Fixed Price Incentive Fee
 Estimated Contract Length - 37 months
 After contract award: 18 month Delta CDRs start Sep 12

F. Performance Metrics

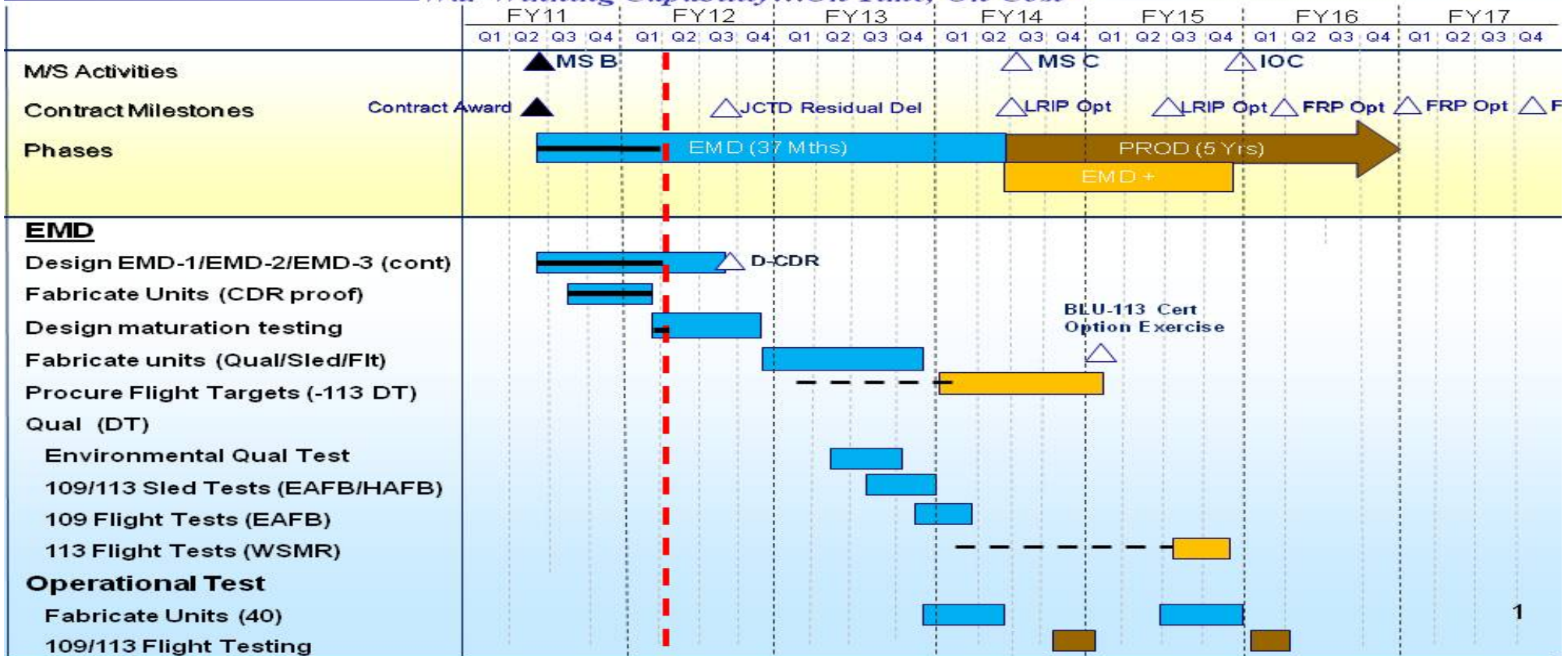
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0604635F: Ground Attack Weapons Fuze Development	PROJECT 645312: Hard Target Void Sensing Fuze



HTVSF Schedule

War-Winning Capability...On Time, On Cost



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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604635F: <i>Ground Attack Weapons Fuze Development</i>	PROJECT 645312: <i>Hard Target Void Sensing Fuze</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Milestone B/EMD Award	2	2011	2	2011
Procure Flight Targets	1	2014	1	2015
Delta CDR	4	2012	4	2012
BLU-109 Flight Test	4	2013	2	2014
Milestone C/LRIP Award	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604775F: <i>DEFENSE RAPID INNOVATION 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	104.464	-	-	-	-	-	-	-	-	Continuing	Continuing
646004: <i>DEFENSE RAPID INNOVATION PROGRAM ACQUISITION</i>	104.464	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Rapid Innovation Program was established by Congress to provide a competitive, merit-based program to accelerate the fielding of technologies developed pursuant to Phase II Small Business Innovation Research Program projects, technologies developed by the defense laboratories, and other innovative technologies (including dual use technologies). The purpose of the program is to stimulate innovative technologies and reduce acquisition or lifecycle costs, address technical risks, improve the timeliness and thoroughness of test and evaluation outcomes, and rapidly insert such products directly in support of defense acquisition programs that meet critical national security needs.

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	-	-	-	-	-
Current President's Budget	104.464	-	-	-	-
Total Adjustments	104.464	-	-	-	-
• Congressional General Reductions	-	-	-	-	-
• Congressional Directed Reductions	-	-	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	-	-	-	-	-
• Congressional Directed Transfers	-	-	-	-	-
• Reprogrammings	-	-	-	-	-
• SBIR/STTR Transfer	-	-	-	-	-
• Other Adjustments	104.464	-	-	-	-

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Rapid Innovation	104.464	-	-	-	-
Description: Rapidly insert innovative technologies, primarily from small business, into acquisition programs that meet critical national security needs.					

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604775F: <i>DEFENSE RAPID INNOVATION PROGRAM</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<i>FY 2011 Accomplishments:</i> Rapidly inserted innovative technologies, primarily from small business, into acquisition programs that meet critical national security needs.					
<i>FY 2012 Plans:</i> N/A					
<i>FY 2013 Base Plans:</i> N/A					
<i>FY 2013 OCO Plans:</i> N/A					
Accomplishments/Planned Programs Subtotals	104.464	-	-	-	-

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	0.000	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.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604796F: <i>Alternative Fuels</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	23.259	-	-	-	-	-	-	-	-	Continuing	Continuing
645287: <i>Assured Fuels</i>	23.259	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Alternative Fuels program manages the certification of current and future alternative fuels for operational use in all legacy and future weapons systems, applicable support equipment, and fuel delivery and storage infrastructure. The alternative fuel types being evaluated and certified include various synthetic fuels, bio-mass derived fuels, and fuel blend technologies. This effort includes complete system evaluations, studies and analysis, subsystem and system-level testing, safety, environmental analysis, fuel stock purchase, fuel storage and transport and other USAF certification costs. Scope of activities include interaction with all USAF weapon system single managers to accomplish complete certification activities for applicable weapon systems. Initiative supports USAF assured fuels effort to decrease US dependence on foreign oil and secure additional fuel-types on which to conduct world-wide operations.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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	24.064	-	-	-	-
Current President's Budget	23.259	-	-	-	-
Total Adjustments	-0.805	-	-	-	-
• Congressional General Reductions	-	-	-	-	-
• Congressional Directed Reductions	-	-	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	-	-	-	-	-
• Congressional Directed Transfers	-	-	-	-	-
• Reprogrammings	-	-	-	-	-
• SBIR/STTR Transfer	-0.682	-	-	-	-
• Other Adjustments	-0.123	-	-	-	-

Change Summary Explanation

FY2011 adjustments Congressional General Reductions \$0.123 and Small Business Innovative Research(SBIR) Reduction \$0.682

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Assured Fuels	23.259	-	-

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604796F: <i>Alternative Fuels</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Description: Certify AF weapon systems (including appropriate support equipment and base-level fuel delivery and storage infrastructure) to operate using any number of alternative fuel stocks.</p> <p>FY 2011 Accomplishments: Continuing Efforts: Laboratory and flight test support for certification activities on seven USAF platforms, ground support equipment and infrastructure using biomass-derived Hydro-processed Renewable Jet (HRJ) and Alcohol-to-Jet (ATJ) fuel blends. Disposition of certification requirements for all USAF Commercial Derivative Aircraft (CDA) using the HRJ fuel blend will be accomplished. Evaluation of infrastructure, toxicology, ESOH, and fire suppression effectiveness of the HRJ blend will be completed. Acquisition of supplemental quantities of HRJ fuels is also planned (as required). MIL-HDBK-510 will be revised and published.</p> <p>An F-16 Field Service Evaluations (FSEs) using the HRJ blend is being conducted to verify extended operational use durability.</p> <p>Transportation and storage of fuel for test locations will be accomplished including associated management and support costs.</p> <p>Phase I of the ATJ pathway is underway and includes the purchase of approximately 11K gallons of RDT&E fuel stocks and a feasibility demonstration of an A-10 Weapon System (flight test, materials, engine, sub-systems, etc).</p>			
Accomplishments/Planned Programs Subtotals	23.259	-	-

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
Funding may be executed internally within the Agile Combat Support Directorate (ASC/WN) via full and open competition or released to other organizations for alternative fuel certification projects for which they are the Office of Primary Responsibility (OPR). OPRs will determine the most appropriate contract vehicle.

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 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

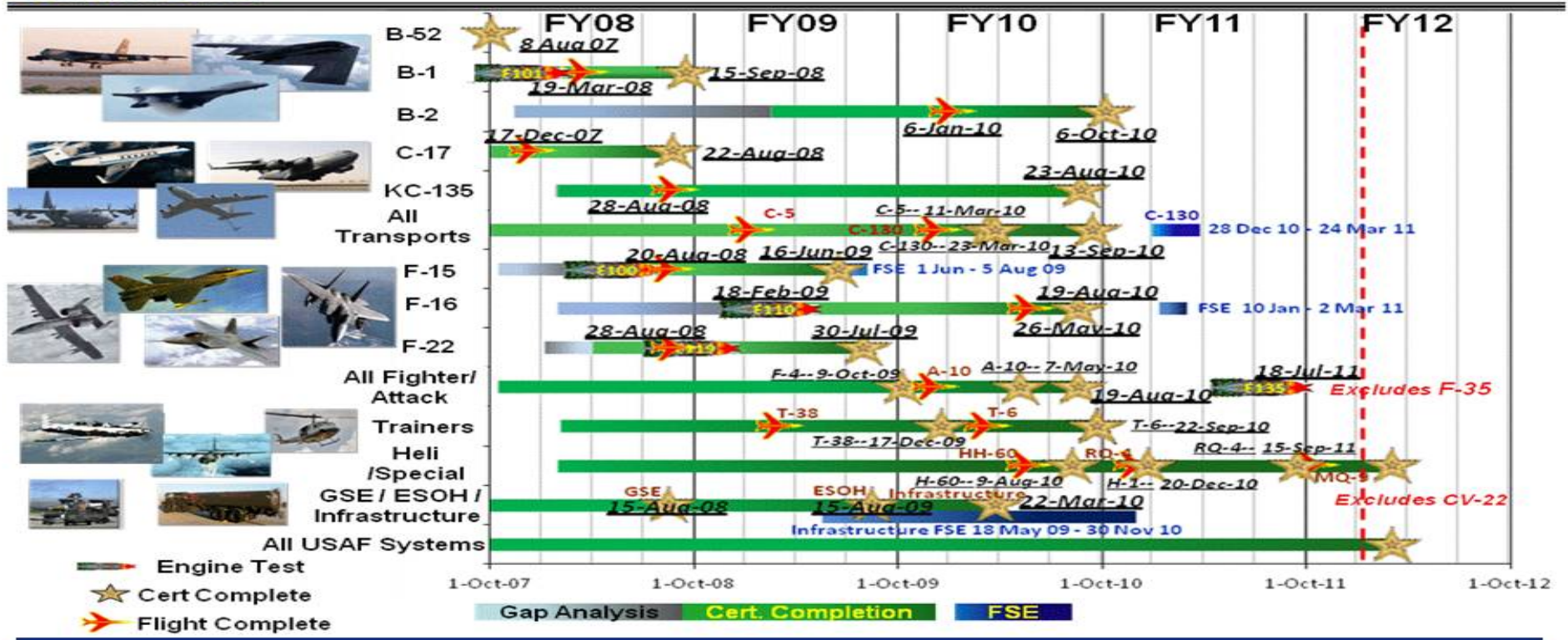
PE 0604796F: Alternative Fuels

PROJECT

645287: Assured Fuels



Alternative Fuels Certification FT-Blend Summary Certification Schedule/Status



Integrity - Service - Excellence

Dec 2011

APPROPRIATION/BUDGET ACTIVITY

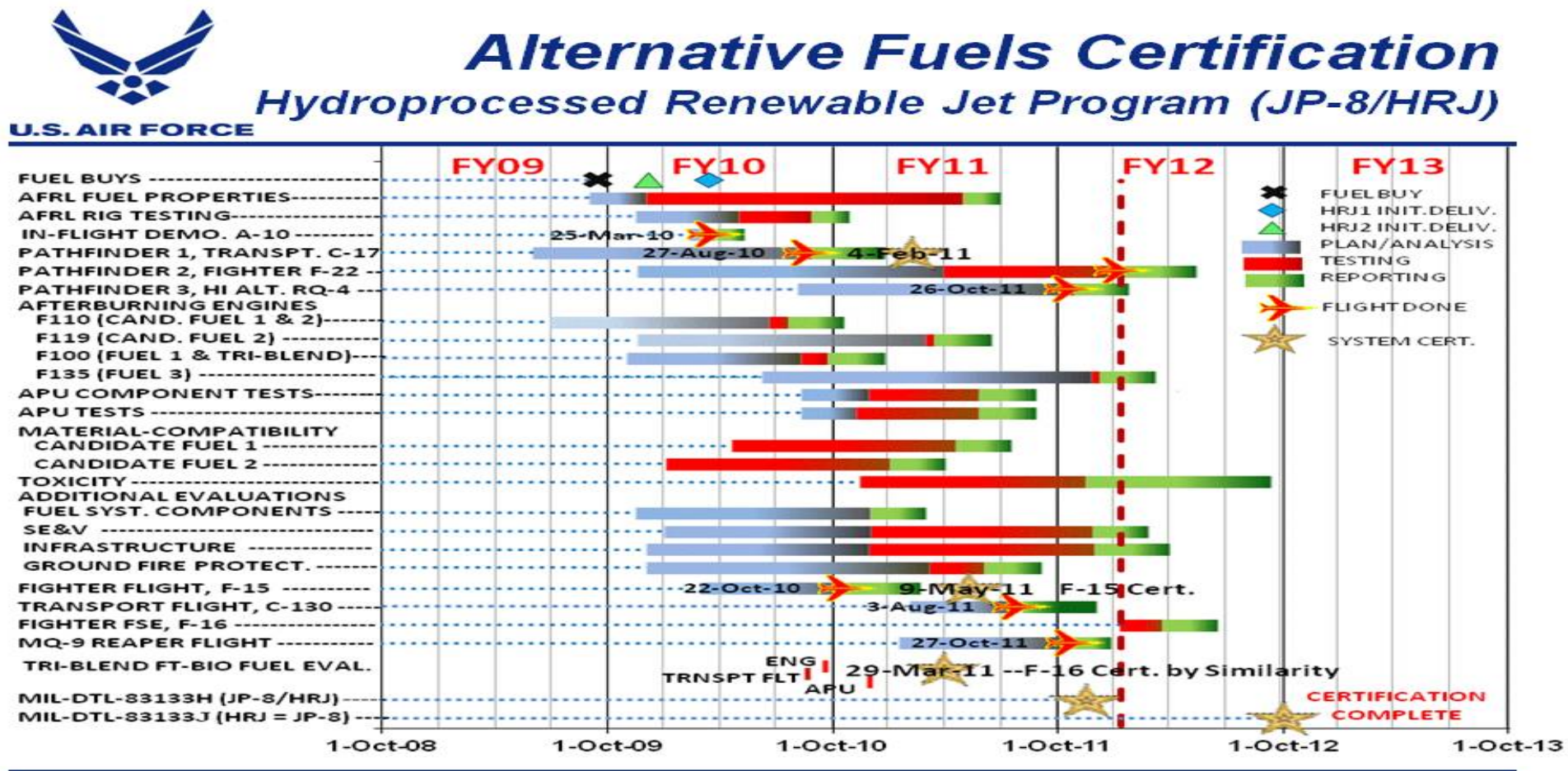
3600: Research, Development, Test & Evaluation, Air Force
 BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0604796F: Alternative Fuels

PROJECT

645287: Assured Fuels



Integrity - Service - Excellence

Dec 2011

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
 BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0604796F: Alternative Fuels

PROJECT

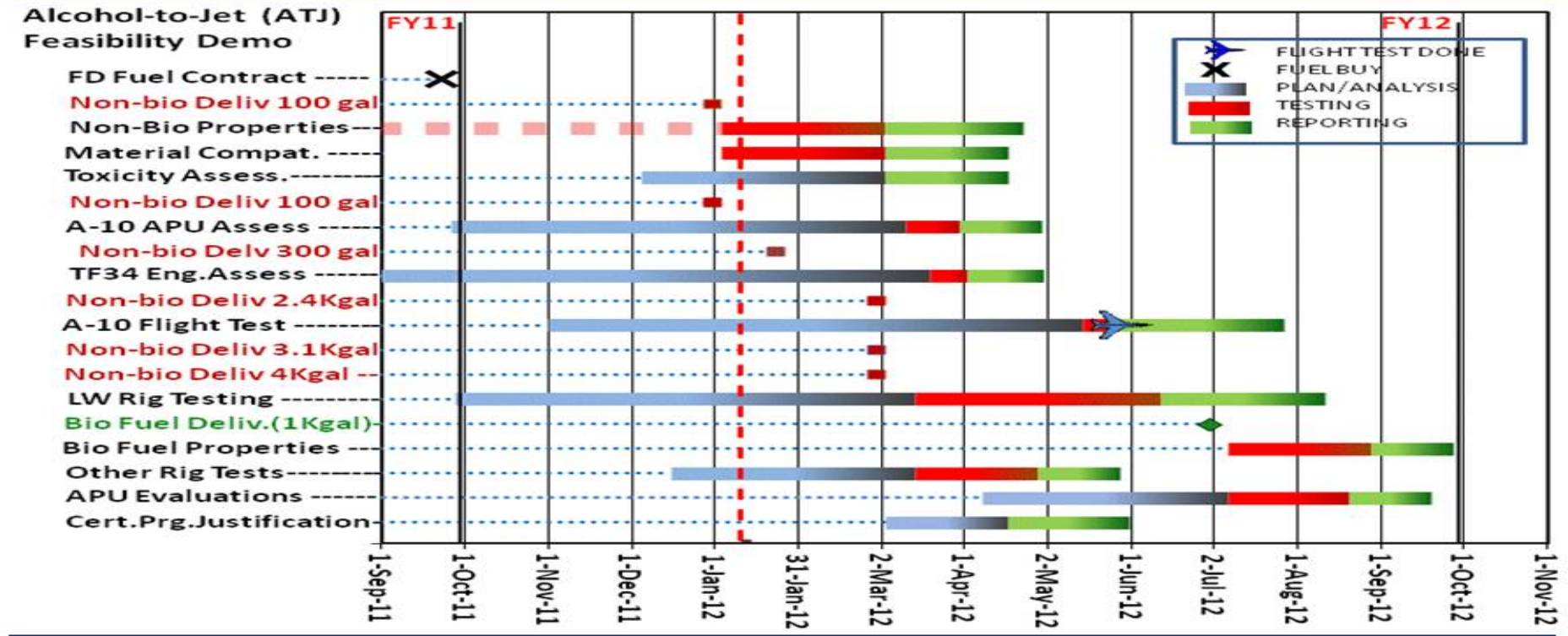
645287: Assured Fuels



U.S. AIR FORCE

Alternative Fuels Certification

Alcohol-to-Jet Fuel Blend Phase 1 (JP-8/ATJ)



Integrity - Service - Excellence

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604796F: <i>Alternative Fuels</i>	PROJECT 645287: <i>Assured Fuels</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Certification Efforts	1	2011	4	2012
Flight Tests	1	2011	4	2012
Engine Tests	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604830F: <i>Automated Air-to-Air Refueling</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	0.083	-	-	-	-	-	-	-	-	Continuing	Continuing
642214: <i>Improved Aerial Refueling Systems</i>	0.083	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This program develops single channel Precision GPS (PGPS) system to support Automated Aerial Refueling (AAR) for future manned and unmanned air systems (UAS). The FY11 funding will support the close out of the Automated Aerial Refueling Phase II Program. From FY04-08, the Next Generation Bomber PE 0604015F funded critical technology maturation and risk reduction efforts that could feed into a long-range strike platform in the future. AAR Phase II is a critical technology for future manned and unmanned long-range strike operations. AAR Phase I technology has been demonstrated, but it requires additional maturation, development, and integration to be demonstrated for operational utility.

This program is in Budget Activity 4, Advanced Component Development, and Prototypes, (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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	0.085	-	-	-	-
Current President's Budget	0.083	-	-	-	-
Total Adjustments	-0.002	-	-	-	-
• Congressional General Reductions	-	-	-	-	-
• Congressional Directed Reductions	-	-	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	-	-	-	-	-
• Congressional Directed Transfers	-	-	-	-	-
• Reprogrammings	-	-	-	-	-
• SBIR/STTR Transfer	-0.002	-	-	-	-
• Other Adjustments	-	-	-	-	-

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

	FY 2011	FY 2012	FY 2013
Title: Automated Aerial Refueling (AAR)	0.083	-	-
Description: Development of flight control and precision navigation (PGPS) systems for initial capability of automated air-to-air refueling			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604830F: <i>Automated Air-to-Air Refueling</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<i>FY 2011 Accomplishments:</i> Complete demonstration of automated air-to-air refueling precision navigation initial capability using a KC-135 tanker and a limited test aircraft (accomplished with FY10 funding). Close-out of Automated Aerial Refueling Program (accomplished with FY11 funding). <i>FY 2012 Plans:</i> none none			
Accomplishments/Planned Programs Subtotals	0.083	-	-

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	0.000	0.000

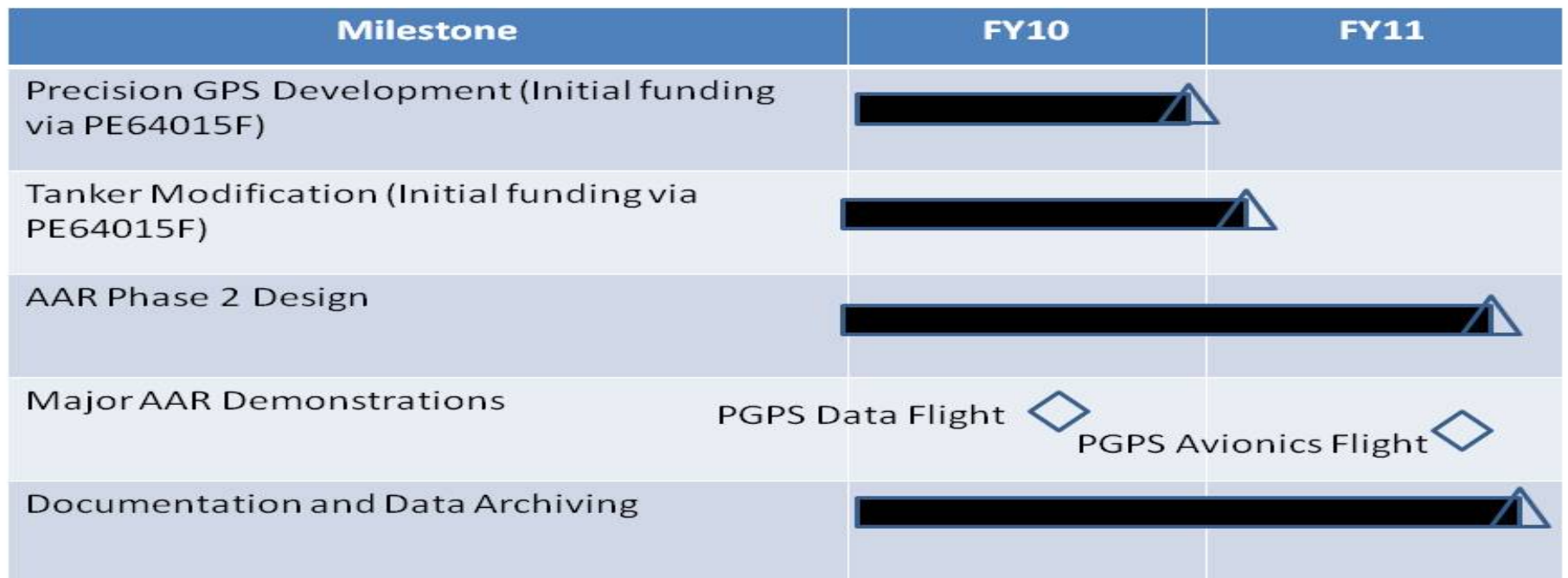
E. Acquisition Strategy
 Principal acquisitions to be performed through Broad Area Announcements (BAA) resulting in competitive Cost Plus Fixed Fee contracts.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604830F: <i>Automated Air-to-Air Refueling</i>	PROJECT 642214: <i>Improved Aerial Refueling Systems</i>

0604830F, chart 7



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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604830F: <i>Automated Air-to-Air Refueling</i>	PROJECT 642214: <i>Improved Aerial Refueling Systems</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Documentation and Data Archiving	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604857F: <i>Operationally Responsive Space</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	124.983	110.379	-	-	-	-	-	-	-	Continuing	Continuing
64A015: <i>ORS Common Services</i>	18.963	13.169	-	-	-	-	-	-	-	Continuing	Continuing
64A020: <i>AF Funded ORSSats</i>	106.020	97.210	-	-	-	-	-	-	-	Continuing	Continuing

Note

Beginning in FY 2013, 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.

There is no funding required for this program beyond the FYDP.

A. Mission Description and Budget Item Justification

The successful integration of space-based capabilities into the core of U.S. national security operations has resulted in dramatically increased demand for and dependence upon space capabilities. As a result, U.S. Strategic Command (USSTRATCOM) identified three needs: 1) to rapidly augment existing space capabilities when needed to expand operational capability; 2) to rapidly reconstitute/replenish critical space capabilities to preserve “continuity of operations” capability; 3) to rapidly exploit and infuse space technological or operational innovations to increase U.S. advantage.

Since the ORS standup in 2007, the terms resiliency and responsiveness in association with space programs are now seen in almost every policy and guidance document, not just at the DoD level, but at a National level as well. Resilience has become a key criterion in evaluating alternative architectures, including cost-effective space system protection, hosting payloads on a mix of platforms in various orbits, drawing on distributed international and commercial partner capabilities, and developing and maturing responsive space capabilities. We are transitioning the activities of the ORS program, and synergistically applying its efforts to other space technology efforts.

This refocused effort will integrate the operationally responsive space efforts, principles and activities into the Air Force Space and Missile Systems Center (SMC). SMC will then be better able to develop various enablers to ensure resilience, survivability and flexibility and to explore space mission augmentation options. SMC will also be better positioned to incorporate responsive and resilient R&D efforts into other platforms.

The Department of Defense will support the new approach by developing architectures for space mission areas that will include international cooperation and commercial solutions and will also look at how space missions are sustained and augmented to support the warfighter in all contingencies. This strategy will also integrate the lessons learned from the ORS program office’s accomplishments into existing space programs of record. The end result of the program’s termination will be that operationally responsive space activities are fully integrated into SMC’s ongoing architectures and Space Modernization Initiative, increasing resilience and flexibility in space systems.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604857F: <i>Operationally Responsive Space</i>
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This program is in Budget Activity 04, Advanced Component Development and Prototypes, because the efforts are necessary to evaluate integrated technologies, representative modes, and prototype systems in a high fidelity and realistic environment.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	93.978	86.543	76.386	-	76.386
Current President's Budget	124.983	110.379	-	-	-
Total Adjustments	31.005	23.836	-76.386	-	-76.386
• Congressional General Reductions	-	-1.164			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	25.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	31.005	-	-76.386	-	-76.386

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

Project: 64A020: *AF Funded ORSSats*

Congressional Add: *Responsive Launch Capability*

Congressional Add Subtotals for Project: 64A020

Congressional Add Totals for all Projects

	FY 2011	FY 2012
	31.492	25.000
	31.492	25.000
	31.492	25.000

Change Summary Explanation

FY2011: (+32.000) Congressional add for Responsive Launch Capability; (-0.995) for Congressional General Reductions.

FY2012: (+25.000) Congressional add for Responsive Launch Capability; (-1.164) for Congressional General Reduction.

FY2013: (-76.386M) due to transitioning ORS efforts to other space programs and reallocation of funding to higher Department 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604857F: <i>Operationally Responsive Space</i>	PROJECT 64A015: <i>ORS Common Services</i>
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COST (\$ in Millions)	FY 2011		FY 2012		FY 2013		FY 2014		FY 2015		Cost To Complete	Total Cost
	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017			
64A015: <i>ORS Common Services</i>	18.963	13.169	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0		

Note

Beginning in FY 2013, 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.

A. Mission Description and Budget Item Justification

ORS Common Services supports the entire ORS partnership (Services, Intelligence Community, Reserve Component, NASA, and our Allies). These activities include studies and analysis to maintain the ORS investment roadmap and coordination and planning activities across the ORS Enterprise. ORS Common Services works with Joint Force Commanders (JFC) and the Services to identify the most likely emergent space needs, make plans and preparations to meet those needs, evaluate results of operational experimentation, and prepare plans and procedures for operational employment and transition. These foundational activities ensure ORS enabler investments are optimally targeted to quickly mature ORS's ability to execute rapid responses to time-critical needs when they arise. Common Services identifies and presents options for concepts/solutions and experimentation including international efforts, conducts concepts development, solutions assessment, rapid evaluation of alternatives, experimentation planning, modeling and simulation, and develops budgetary recommendations for ORS solutions.

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

	FY 2011	FY 2012	FY 2013
Title: Analysis, modeling, simulation, and program support	18.963	13.169	-
Description: Perform concepts and solutions for warfighter urgent needs. Perform modeling, simulations, and analyses for various alternative concepts, and develop conceptual requirements.			
FY 2011 Accomplishments: Integrated the findings from the Rapid Deployable Space (RDS) Initial Capabilities Document (ICD). Performed kick off study for the Missile Warning urgent need. Developed the ground systems architectures for the Radio Frequency (RF) modular mission kit and Missile Warning mission kit. Oversaw the Rapid Response Space Works (RRSW) Independent Validation & Verification (IV&V) efforts through the RRSW Jumpstart/Joint Operational Demonstration (JOD) evaluation process. Concluded the protected communications mission design study. Supported the Synthetic Aperture Radar (SAR) mission kit development. Began the TacSat-4 and ORS-1 Military Utility Assements (MUAs).			
FY 2012 Plans:			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604857F: <i>Operationally Responsive Space</i>	PROJECT 64A015: <i>ORS Common Services</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Perform further kick-off studies for urgent needs as presented by JFCs. Continue to fund operations and transition support and joint military utility analyses for ORS-1 and TacSat-4. Support the transition of the ORS Office and transfer of data to the Space and Missile Systems Center.			
Accomplishments/Planned Programs Subtotals	18.963	13.169	-

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
Competitively award contracts through ORS Office or partner organizations.

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 4: Advanced Component Development & Prototypes (ACD&P)

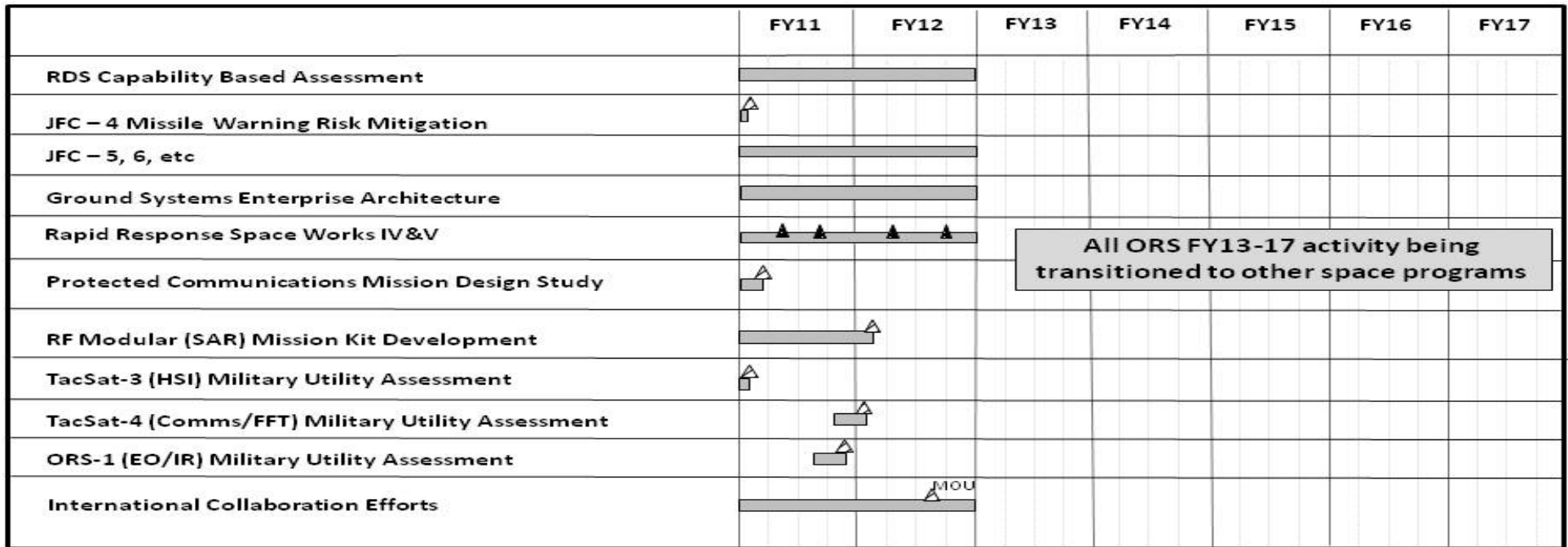
R-1 ITEM NOMENCLATURE

PE 0604857F: Operationally Responsive Space

PROJECT

64A015: ORS Common Services

Operationally Responsive Space BPAC A015 Schedule



All ORS FY13-17 activity being transitioned to other space programs

- [Bar] Design / Modification / Enablers
- ▲ Jumpstarts / JOD events
- ▲ Deliverable

- RDS – Rapidly Deployable Space
- JFC – Joint Force Commander
- RRSW – Rapid Response Space Works
- IV&V – Independent Validation & Verification

- RF – Radio Frequency
- SAR – Synthetic Aperture Radar
- HSI – Hyper-Spectral Imagery
- Comms – Communications

- FFT – Friendly Force Tracking
- JODs – Joint Operational Demonstrations
- MOU – Memorandum of Understanding

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604857F: <i>Operationally Responsive Space</i>	PROJECT 64A015: <i>ORS Common Services</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Rapidly Deployable Space (RDS) Capability Based Assessment	1	2011	4	2012
JFC-4 Missile Warning Risk Mitigation	1	2011	1	2011
Additional JFC urgent need analyses	1	2011	4	2012
Ground Systems Enterprise Architecture for surveillance/reconnaissance, communications, and space situational awareness	1	2011	4	2012
RRSW IV&V	1	2011	4	2012
Protected Comms Mission Design Study	1	2011	1	2011
SAR Mission Kit Development Support	1	2011	1	2012
TacSat-3 military utility assessment	1	2011	1	2011
TacSat-4 military utility assessment	4	2011	2	2012
ORS-1 military utility assessment	3	2011	4	2011
International collaboration efforts	1	2011	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604857F: <i>Operationally Responsive Space</i>	PROJECT 64A020: <i>AF Funded ORSSats</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
64A020: <i>AF Funded ORSSats</i>	106.020	97.210	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Beginning in FY 2013, 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.

A. Mission Description and Budget Item Justification

Operationally Responsive Space projects were optimized for prioritized theater use and/or surge, augmentation and replenishment of traditional space capabilities. The ORS Concept of Operations (CONOPS) drives the need for satellites featuring high degrees of modularity, standard interface vehicles, and the use of plug and play payloads and buses.

The Air Force will continue to maintain ORS-1, launched 29 Jun 2011 to respond to USCENTCOM's urgent need, validated by USSTRATCOM, to provide ISR for theater warfighters. The additional ORS Office efforts of maturing enabling elements will be descoped and the knowledge base will be transitioned as appropriate to other space programs including Global Positioning System, Advanced EHF Milsatcom, Space Based Infrared System, Space Control Technology, and the rest of the space architecture.

ORS is working with the University of Hawaii's (U of H) Hawaii Space Flight Laboratory (HSFL) and Sandia National Laboratory on the Low Earth Orbit Nanosatellite Integrated Defense Autonomous Systems (LEONIDAS) program. LEONIDAS is to design, fabricate, launch, and perform on-orbit operations of small and micro-satellites for early detection of missile launches by hostile forces.

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

	FY 2011	FY 2012	FY 2013
Title: Cross Cutting	5.428	11.510	-
Description: Perform cross-cutting activities that support all three tiers of ORS activities.			
FY 2011 Accomplishments: Provided TacSat-4 launch and on-orbit flight support and performance analysis. Continued developing the small space crypto package. Continued ORS-1 Mission Systems Engineering/Program Management (SEPM) support. Provided assessment and evaluation of Plug 'n Play maturity and technology for follow-on mission kits. Continued SEPM and Independent Verification & Validation (IV&V) for RRSW & the Modular Space Vehicle (MSV). Continued ongoing systems engineering support of future mission development.			
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604857F: <i>Operationally Responsive Space</i>	PROJECT 64A020: <i>AF Funded ORSSats</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Continue operations, transition support, and joint military utility analyses for ORS-1 and TacSat-4. Continue SEPM and IV&V for RRSW & the Modular Space Vehicle (MSV). Continue ongoing systems engineering support of future mission development. Continue ORS-1 Mission Operations and Lessons Learned studies. Conduct Modeling and Simulations for Mission Evaluations for ORS Mission Kits. Refine ORS CONOPS, Enterprise and Architecture, and Systems Engineering Processes. Transfer lessons learned, designs, data, and processes to the Space and Missile Systems Center.				
<p>Title: Tier-1</p> <p>Description: Perform Tier-1 activities--establishing the use of existing space systems, operations, and processes to provide responsive effects in minutes to days from when need is established.</p> <p>FY 2011 Accomplishments: Coordinated operational demonstrations and assessed utility of nano and microsatellites with partners. Conducted operational demonstrations with services and combatant commanders using ORS and ORS-like assets. Released the automated Toolkit for use on Virtual Mission Operations Center (VMOC) to combatant commanders and other users.</p> <p>FY 2012 Plans: Coordinate integration of ORS Tier-1 solutions, experiments and demonstrations into COCOMs and Component exercises and operations in order to establish visibility and socialization of ORS concepts and solutions. Develop CONOPs for COCOM use of assets. Transfer the automated Toolkit to the Joint Space Operations Center Mission System.</p>		2.600	2.600	-
<p>Title: Tier-2</p> <p>Description: Perform Tier-2 deployment demonstrations to provide field-ready capabilities and enabler maturation projects.</p> <p>FY 2011 Accomplishments: Designed a definitive MSV Bus and modular RF Payload (PDR-level design) with demonstration of end-to-end RRSW capabilities for technology development and integration. Initiated Phase 2 for RRSW-complete facility modifications, major equipment installation, completed clean room and started RRSW initial operations. Conducted limited operations for participation in wargames and exercises to demonstrate rapid assembly, integration, and test. Completed trials ("Jump Start") for maturing rapid assembly, integration, and test (AI&T) processes to include adaptation for changing payload configurations.</p> <p>FY 2012 Plans: Continue to support RRSW capabilities at the minimum required to support the ORS Enabler Mission and ultra-low cost, rail launched payload integration for FY13 launches; MSV bus delivery; and maintain facility safety. Transfer residual RRSW to AF Research Lab.</p>		40.800	7.200	-
<p>Title: Tier-3</p>		25.700	50.900	-

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604857F: <i>Operationally Responsive Space</i>	PROJECT 64A020: <i>AF Funded ORSSats</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Description: Perform Tier-3 design, fabrication, and integration to satisfy joint force commander needs. Provide strategic science and technology direction and execution and low cost launch vehicle development.</p> <p>FY 2011 Accomplishments: Launched ORS-1 to support USCENTCOM urgent need. Launched TacSat-4 for UHF Communications operational demonstration (launch delayed from FY10 target). Conducted enabler demonstration mission for innovation cell (conduit for enabling science and technology capabilities and improvements to architecture).</p> <p>FY 2012 Plans: Develop the MSV modular RF Payload to a CDR-level design and complete and deliver the MSV multi-mission Bus and its associated hardware (space common data link radio) along with the Gryphon cryptology unit (software based encryption for satellite command and control) in FY13. Complete the Super Stryper launcher (employing an Autonomous Flight Safety System) and launch a 300Kg microsatellite class space vehicle in 4QFY13. Transfer capability to Space and Missile Systems Center.</p>			
Accomplishments/Planned Programs Subtotals	74.528	72.210	-

	FY 2011	FY 2012
<p>Congressional Add: Responsive Launch Capability</p> <p>FY 2011 Accomplishments: Continued developing a responsive launch capability focused on six key components: storable launch vehicles, including ultra low cost versions; rapid orbital trajectory automation; autonomous flight safety; on-board metric tracking; space based range; and automated range safety analyses.</p> <p>FY 2012 Plans: Continue the ORS Enabler Mission and selected launch vehicle improvements leading to a launch in 4QFY13. Continue developing an ultra-low cost, rail launched new small launch capability. Continue development and qualification testing of autonomous flight safety assemblies, on-board metric tracking, and space based range.</p>	31.492	25.000
Congressional Adds Subtotals	31.492	25.000

C. Other Program Funding Summary (\$ in Millions)										Cost To		
<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>Complete</u>	<u>Total Cost</u>	
• R-30: <i>RDT&E AF, PE 0603430F, Advanced EHF Milsatcom</i>	0.000	0.000	1.500	0.000	1.500	1.500	1.500	1.500	1.500	1.500	Continuing	Continuing

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604857F: <i>Operationally Responsive Space</i>	PROJECT 64A020: <i>AF Funded ORSSats</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>
• R-32: <i>RDT&E AF, PE 0603438F, Space Control Technology</i>	0.000	0.000	2.000	0.000	2.000	2.000	2.000	2.000	2.000	Continuing	Continuing
• R-55: <i>RDT&E AF, PE 0604858F, Technology Transition</i>	0.000	0.000	3.000	0.000	3.000	3.000	3.000	3.000	3.000	Continuing	Continuing
• R-69: <i>RDT&E AF, PE 0604441F, SBIRS High EMD</i>	0.000	0.000	2.000	0.000	2.000	2.000	2.000	2.000	2.000	Continuing	Continuing
• R-112: <i>RDT&E AF, PE 0603423F, GPS III Operational Control Segment</i>	0.000	0.000	1.500	0.000	1.500	1.500	1.500	1.500	1.500	Continuing	Continuing

D. Acquisition Strategy

Expediently award contracts through ORS Office or partner organizations.

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 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0604857F: Operationally Responsive Space	PROJECT 64A020: AF Funded ORSSats



Operationally Responsive Space BPAC A020 Schedule

* Mission Kits include satellite vehicle, launch, integration, operational experimentation, and interim transitions to operational capabilities

FY11 FY12 FY13 FY14 FY15 FY16 FY17

Plans and Programs

Experiments and Flight Demonstrations

**Systems Engineering & Architecture
JFC Needs**

**Operational Capabilities Development and
Integration**

**JFC Urgent Needs and Enabler
Maturation projects**

ORS-1

Electro-optical/Infra-red

USCENTCOM Urgent Need (OCO funded)

MSV RF Modular

Bus
Payload Synthetic Aperture Radar
PDR CDR Delivery
(FY12 funded)

C² & TPED Enablers

MSI
Gryphon Crypto

Launch and Range Enablers

AFSS
GPS Metric Track Space Based Range
RR (FY12 funded)

Rapid Response Space Works

Joint Operational Demos

Capabilities and launch dates subject to change due to USSTRATCOM needs

- AFSS: Automated Flight Safety Sys
- C2: Command and Control
- CDR: Critical Design Review
- FFT: Friendly Force Tracking
- HSI: Hyper Spectral Imager
- JFC: Joint Force Commander
- MSI: Mission Service Interface
- MSV: Modular Space Vehicle
- PDR: Preliminary Design Review
- RF: Radio Frequency
- RR: Rapid Retargeting
- TPED: Tasking, Processing, Exploitation & Dissemination

- Co-Funded Operational Experiments
- Design / Modification / Enablers
- ▨ Production / Fielding
- ▩ Operations / Sustainment
- ◇ TacSat Launch
- ▲ Mission Launch
- ▲ Design Review
- ▲ Initial Operational Capability
- ▲ ORS Capability Demo

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604857F: <i>Operationally Responsive Space</i>	PROJECT 64A020: <i>AF Funded ORSSats</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
TacSat-3 launch and ops	1	2011	3	2012
TacSat-4 launch and ops	4	2011	2	2013
Cross-Cutting Activities: Systems Engineering & Architecture	1	2011	4	2012
Tier-1 Operational Capabilities Development and Integration	1	2011	4	2012
ORS-1 (CENTCOM Urgent Need)	1	2011	4	2013
MSV RF Modular Bus & Payload	1	2011	2	2013
C2 & TPED Enablers	1	2011	2	2012
Launch and Range Enabler Maturity	1	2011	4	2013
Rapid Response Space Works	1	2011	4	2012
Jumpstart / Joint Operational Demonstrations	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604858F: <i>Technical Transition 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	11.842	2.766	37.558	-	37.558	16.833	59.023	76.140	79.333	Continuing	Continuing
645350: <i>Transition Prioritization</i>	11.842	2.766	37.558	-	37.558	16.833	59.023	76.140	79.333	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Technology Transition Program (TTP) provides funding to mature and demonstrate technologies to enable or accelerate their transition to legacy or acquisition programs of record. It addresses the gap that exists between when a technology is first demonstrated and when it can be successfully acquired as an operational capability. TTP bridges that gap by funding promising system and subsystem concepts for technology integration and demonstration to continue beyond the laboratory. It allows acquisition program managers (the developers and providers) and warfighters (the end users) to integrate, prototype, and demonstrate candidate technologies and assess them in an operational environment. As a result, the warfighters can assess the capability first-hand and accurately fund the follow-on acquisition program during the next budgeting cycle. TTP includes research and development funds for the following transition activities: (1) prototyping of promising, high-priority concepts and technologies in an operational environment to lower acquisition risk by raising the technology readiness level; (2) performing pre-acquisition systems engineering to facilitate transition from a demonstration program into acquisition programs of record; (3) assessing interface requirements of candidate concepts, technologies, and demonstration projects to better understand true engineering costs resulting from insertion of new technologies into the Air Force architecture; and (4) capturing data through information technology tools and databases to help formulate strategies and gather proposals for development that have the potential to perform Department of Defense (DoD) missions. The program provides funding to mature adaptive turbine engine technologies for next generation propulsion systems. The program will leverage adaptive turbine engine science and technology demonstrations to develop a multi-platform common adaptive engine built around a commercially derived core. It will enable multiple high confidence engine acquisition programs through the common engine architecture, and accomplishment of early risk reduction and early competition prior to an acquisition program. TTP funding will also provide for the demonstration of systems and technology to enable increasingly responsive, resilient, and affordable architectures via development of hostable payloads, small satellites, interface standards, and government/commercial hosting opportunities. These efforts are in Budget Activity 4, Advanced Component Development and Prototypes, since they involve system specific efforts that help expedite technology transition from the laboratory to operational use.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604858F: <i>Technical Transition 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	12.260	2.773	-	-	-
Current President's Budget	11.842	2.766	37.558	-	37.558
Total Adjustments	-0.418	-0.007	37.558	-	37.558
• Congressional General Reductions	-	-0.007			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.355	-			
• Other Adjustments	-0.063	-	37.558	-	37.558

Change Summary Explanation

In FY11, Other Adjustments include: -0.063 (Congressional Rescissions)

Increased Air Force emphasis for energy efficiency initiatives and responsive, resilient space technologies caused increase in FY13 and out funding.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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Title: Major Thrust 1.	11.842	2.766	-
Description: Technology transition project execution to facilitate long-term acquisition planning and budget development			
FY 2011 Accomplishments: Demonstrated technologies supporting persistent wide area air and maritime surveillance to enable defense against threats in the interior of and in the approaches to North America. Continued the demonstration and transition of an advanced optical self-protection system for protection of aircraft from guided projectiles; a multi-intelligence correlation, visualization and analysis software tool for rapid integration of multi-source data into a scalable analysis environment supporting combat zone command and control facilities; a no or low collateral damage counter-electronics capability; a satellite communications capability for simultaneous multiple satellite links and advanced antenna control.			
FY 2012 Plans: Complete the demonstration and transition of technologies supporting persistent wide area air and maritime surveillance to enable defense against threats in the interior of and in the approaches to North America.			
FY 2013 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604858F: <i>Technical Transition Program</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Effort completed in FY12.			
Title: Major Thrust 2 Description: Next generation fuel efficient military propulsion system FY 2011 Accomplishments: N/A FY 2012 Plans: N/A FY 2013 Plans: Accomplish an adaptive turbine engine prototype conceptual design. Perform engine configuration definition and component conceptual design. Complete early performance, durability, and operability assessments.	-	-	34.558
Title: Major Thrust 3 Description: Responsive Resilient Space Technologies FY 2011 Accomplishments: N/A FY 2012 Plans: N/A FY 2013 Plans: Pursue opportunities to mature systems and technologies which enable increasingly responsive, resilient and affordable architectures via hostable payloads, small satellites and government/commercial hosting opportunities.	-	-	3.000
Accomplishments/Planned Programs Subtotals	11.842	2.766	37.558

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
 TTP enables a more effective and prioritized transition of technologies to the warfighter. It allows more accurate cost estimating and more comprehensive systems integration to occur through the use of prototypes and user assessments until the sponsoring MAJCOM can incorporate the technology into their subsequent budget

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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 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE

PE 0604858F: *Technical Transition Program*

submission. The Air Force, through appropriate program offices, will manage the acquisition and development process for the integration and fielding of SAE-approved TTP projects. Each project will have a complete acquisition plan defined and approved as a criterion for subsequent funding.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604858F: <i>Technical Transition Program</i>	PROJECT 645350: <i>Transition Prioritization</i>

Technology Transition Program - PE 0604858F

	FY11				FY12				FY13				FY14				FY15				FY16				FY17			
Fiscal Year	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
FY10 Project Funding Award																												
FY10 Project Progress Rvw		◆																										
FY11 Project Funding Award		▲																										
FY11 Project Progress Rvw				◆		◆																						
FY12 Project Funding Award						▲																						
FY12 Project Progress Rvw								◆		◆																		
FY13 Project Funding Award											▲			▲														
FY13 Project Progress Rvw												◆			◆					◆							◆	
FY14 Project Funding Award															▲													
FY14 Project Progress Rvw															◆			◆				◆					◆	

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604858F: <i>Technical Transition Program</i>	PROJECT 645350: <i>Transition Prioritization</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FY11 Project Funding Award	2	2011	2	2011
FY11 Project Progress Review 1	4	2011	4	2011
FY11 Project Progress Review 2	2	2012	2	2012
FY12 Project Funding Award	2	2012	2	2012
FY12 Project Progress Review 1	4	2012	4	2012
FY12 Project Progress Review 2	2	2013	2	2013
FY13 Project Funding Award	1	2013	1	2013
FY13 Project Progress Review 1	4	2013	4	2013
FY13 Project Funding Award 2	1	2014	1	2014
FY14 Project Funding Award	2	2014	2	2014
FY13 Project Progress Review 2	4	2014	4	2014
FY14 Project Progress Review 1	4	2014	4	2014
FY14 Project Progress Review 2	3	2015	3	2015
FY13 Project Progress Review 3	1	2016	1	2016
FY14 Project Progress Review 3	3	2016	3	2016
FY14 Project Progress Review 4	3	2017	3	2017
FY13 Project Progress Review 4	4	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305164F: <i>NAVSTAR Global Positioning System User Equipment Space</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	-	-	96.840	-	96.840	125.926	122.756	153.727	160.714	Continuing	Continuing
643833: <i>MILITARY GLOBAL POSITIONING SYSTEM USER EQUIP</i>	-	-	96.840	-	96.840	125.926	122.756	153.727	160.714	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 Global Positioning System (GPS) is a space-based radio Positioning, Navigation, and Time (PNT) distribution system. GPS User Equipment (UE) consists of standardized receivers, antennas, antenna electronics, etc., grouped together in sets to derive navigation and time information transmitted from GPS satellites. These receiver sets are used by DoD. RDT&E funds UE development, test, and analysis for new PNT receiver capabilities in Navigation Warfare (Navwar) across all military platforms using GPS services.

The Military GPS User Equipment (MGUE) program is responsible for the development of standard modernized receiver form factors for the service-nominated lead platforms identified in the draft MGUE Capability Development Document (CDD). This new family of modernized GPS receivers will enhance existing and deliver improved capabilities to counter current and emerging Positioning, Navigation, and Timing (PNT) threats and enable military operations in a Navigation Warfare (NAVWAR) environment where current legacy receiver performance would be compromised.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305164F: <i>NAVSTAR Global Positioning System User Equipment Space</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	-	-	-	-	-
Current President's Budget	-	-	96.840	-	96.840
Total Adjustments	-	-	96.840	-	96.840
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	96.840	-	96.840

Change Summary Explanation

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

C. Accomplishments/Planned Programs (\$ in Millions)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>
Title: MGUE	-	-	96.840
Description: The Military GPS User Equipment (MGUE) program will develop standard modernized receiver form factors for the service-nominated lead platforms identified in the draft MGUE Capability Development Document (CDD).			
FY 2013 Plans: Execute the Technology Development phase MGUE Increment 1 contracts with the completion of the System Requirements Review (SRR) and System Design Review (SDR). Conduct efforts for MGUE Increment 2 early engineering analysis. Provide program and technical support as well as receiver testing, integration and security/performance certification efforts.			
Accomplishments/Planned Programs Subtotals			96.840

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>
• P-42: <i>OPAF, PE 0305164F, NAVSTAR GPS Space</i>	5.151	2.008	2.031	0.000	2.031	2.061	2.093	2.131	2.169	2.200	188.563

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305164F: <i>NAVSTAR Global Positioning System User Equipment Space</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>
• R-198: <i>RDT&E, AF, PE 0305164F, NAVSTAR GPS User Equipment Space</i>	155.778	131.832	29.621	0.000	29.621	0.000	0.000	0.000	0.000	0.000	1,266.878

E. Acquisition Strategy

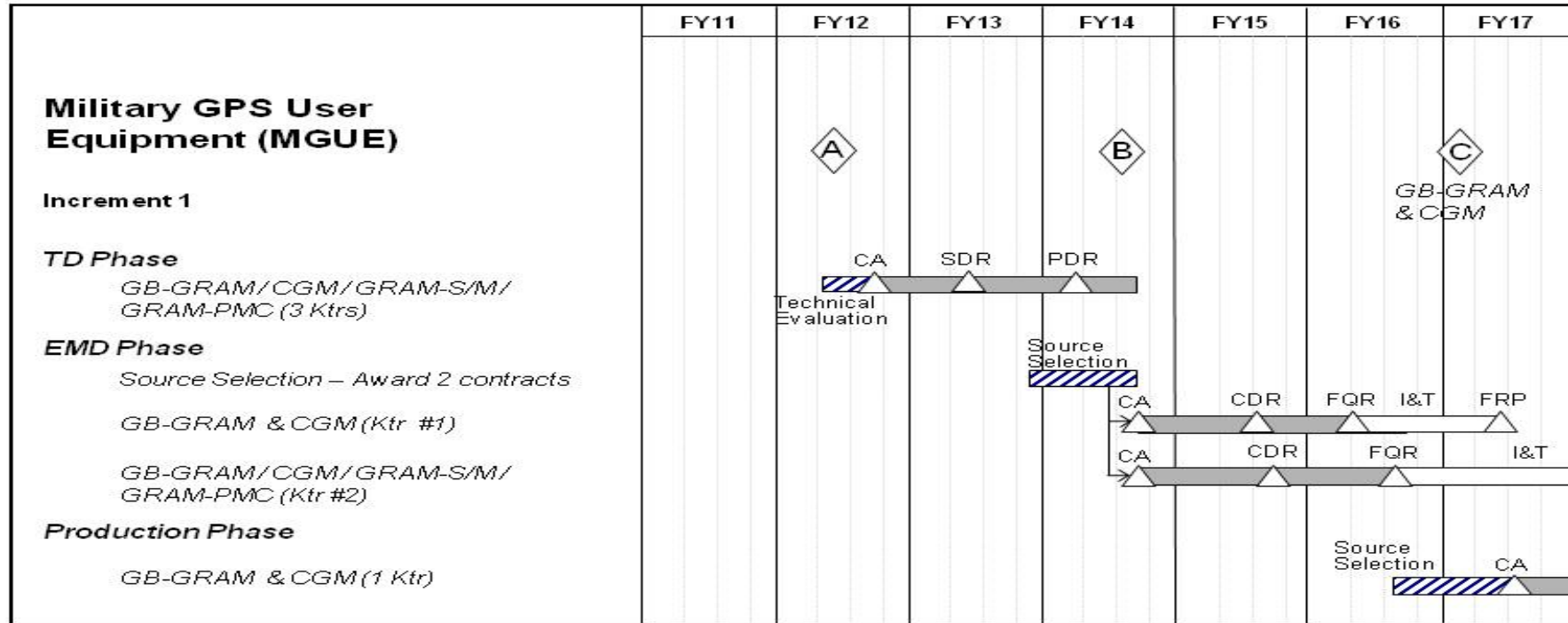
The MGUE program has developed a comprehensive acquisition strategy to provide modernized GPS capabilities to US and Allied forces by: (a) establishing time-certain and low risk development; (b) bounding requirements to leverage mature technology to the maximum extent possible; (c) focusing on the development of form factors based on well-defined standards to support lead platform integration; (d) introducing the Common GPS Module (CGM) to support long term vision and modernized capabilities for non-lead platform and unique applications providing a secure, common core GPS capability to a broader range of military applications; and (e) implementing a proactive, collaborative MGUE Platform integration activity to mitigate risk and reduce cost for DoD modernization.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305164F: <i>NAVSTAR Global Positioning System User Equipment Space</i>	PROJECT 643833: <i>MILITARY GLOBAL POSITIONING SYSTEM USER EQUIP</i>



ASIC – Application Specific Integrated Circuit	FQR – Functional Qualification Review	I & T – Integration and Test
CA – Contract Award	FRP – Full Rate Production	Ktr – Contractor (s)
CDR – Critical Design Review	FY – Fiscal Year	PDR – Preliminary Design Review
CGM – Common GPS Module	GB – Ground Based	PMC – PCI Mezzanine Card
EMD – Engineering, Manufacturing & Development	GRAM – GPS Receiver Applications Module	S/M – Standard Electronics Module

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305164F: <i>NAVSTAR Global Positioning System User Equipment Space</i>	PROJECT 643833: <i>MILITARY GLOBAL POSITIONING SYSTEM USER EQUIP</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Milestone A	2	2012	2	2012
MGUE Increment 1 Contract Award (x3)	3	2012	3	2012
System Design Review (SDR)	2	2013	2	2013
JROC Capabilities Development Document (CDD) Approval	2	2013	2	2013
Milestone B	3	2014	3	2014
MGUE Source Selection	4	2013	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305178F: <i>National Polar-Orbiting Op Env Satellite</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	173.016	43.000	-	-	-	-	-	-	-	Continuing	Continuing
644056: <i>National Polar-orbiting Operational Env. Sat. Syst.</i>	173.016	43.000	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note
 The restructure from the National Polar-orbiting Operational Environmental Satellite System (NPOESS) program to the Defense Weather Satellite System (DWSS) was finalized in FY 2011. The DWSS program was terminated per Congressional direction in FY 2012. DoD will utilize the remaining Defense Meteorological Satellite Program (DMSP) satellites to satisfy DoD overhead weather requirements until a follow-on capability can be acquired. All FY 2012 activities in this PE support DWSS program termination.

Weather Satellite Follow-on (WSF) activities were funded starting in FY 2012 using a new RDT&E, AF PE (0604422F).

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
 Presidential Decision Directive/National Science and Technology Council-2 (PDD/NCTC-2) (May 1994) directed the DoD, Department of Commerce (DOC), and the National Aeronautics and Space Administration (NASA) to establish a converged national polar-orbiting weather satellite program. The converged program, the National Polar-orbiting Operational Environmental Satellite System (NPOESS), combined the follow-on to DoD's Defense Meteorological Satellite System (DMSP) and the DOC's Polar-orbiting Operational Environmental Satellite (POES) program.

On 1 February 2010, the Executive Office of the President announced a restructure of the NPOESS program which directed the acquisition and development of separate military and civil weather satellite programs. The Air Force began acquisition of the Defense Weather Satellite System (DWSS) to satisfy military weather requirements. The National Oceanographic and Atmospheric Administration (NOAA) will acquire the Joint Polar Satellite System (JPSS) and a shared common ground system to address civil weather and environmental requirements. The DWSS system was designed to produce environmental data records for regional/global meteorological, oceanographic, environmental, climatic data, and space environmental remote sensing information. DWSS capabilities would enable the anticipation and exploitation of atmospheric and space environment conditions for military operations planning. DWSS data would also be instrumental to civilian weather forecasters as they work to improve climate forecasting and severe weather modeling and prediction, reducing the potential for loss of civilian life and property.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305178F: <i>National Polar-Orbiting Op Env Satellite</i>
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The DWSS program was designed to satisfy DoD's environmental monitoring requirements in the early morning orbit by developing and launching two satellites [flight-1 (F1) and flight-2 (F2)], each with an electro-optical sensor, Space Environment Monitor (SEM-N), and a microwave sensor, with a planned initial launch capability no earlier than 2018.

RDT&E funds in FY 2011 were used for early development of the two DWSS satellites, contract restructure efforts, and continued transition of non-DoD payloads to NASA/NOAA for JPSS.

RDT&E funds in FY 2012 were used to support DWSS program termination activities such as: leveraging and/or transitioning government investments in the NPOESS/ DWSS program including electro-optical, microwave, and space weather sensors, spacecraft, materials, algorithms and other DoD-specific elements of the common ground system; acquiring if necessary, any intellectual property rights and data; storage of program assets for potential future use; and covering any contractor or government liabilities incurred while performing termination activities. FY 2012 funds were also used to complete the transition of non-DoD payloads and support to NOAA/NASA for the Joint Polar Satellite System (JPSS).

BA-4 - This program is a Budget Activity 4, Advanced Component Development and Prototypes (ACP&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	325.505	444.900	526.785	-	526.785
Current President's Budget	173.016	43.000	-	-	-
Total Adjustments	-152.489	-401.900	-526.785	-	-526.785
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-444.900			
• Congressional Rescissions	-	-			
• Congressional Adds	-	43.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.091	-			
• Other Adjustments	-151.398	-	-526.785	-	-526.785

Change Summary Explanation

The restructure from the National Polar-orbiting Operational Environmental Satellite System (NPOESS) program to the Defense Weather Satellite System (DWSS) was finalized in FY 2011. The DWSS program was terminated per Congressional direction in FY 2012. DoD will utilize the remaining Defense Meteorological Satellite Program (DMSP) satellites to satisfy DoD overhead weather requirements until a follow-on capability can be acquired. All FY 2012 activities in this PE supported DWSS program termination. Weather Satellite Follow-on activities (WSF) were funded starting in FY 2012 using a new PE (0604422F).

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305178F: <i>National Polar-Orbiting Op Env Satellite</i>
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FY11: -\$225.5M congressional-directed reduction for program reduction; +\$75M congressional add; -\$0.898M congressional general reduction; -\$1.091M SBIR
 FY12: \$43M congressional add (DWSS termination liability)
 FY12: -\$444.9M congressional directed reduction (DWSS program termination)
 FY13: -\$526.785M removes FY13 DWSS funding and is reallocated to higher DoD priorities

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: DWSS</p> <p>Description: Develop and acquire DWSS satellites and sensors, fund development of DoD-specific elements within the common ground system, and develop algorithms.</p> <p>FY 2011 Accomplishments: Completed contract restructure and early development of DWSS. Continued transition of non-DoD payloads to NOAA/NASA for JPSS.</p> <p>FY 2012 Plans: Performed activities related to DWSS program termination such as: leveraging and/or transitioning government investments in the NPOESS/DWSS program including electro-optical, microwave, and space weather sensors, spacecraft, materials, algorithms and other DoD-specific elements of the common ground system; acquiring if necessary, any intellectual property rights and data; storage of program assets for potential future use; and covering any contractor or government liabilities incurred while performing termination activities. FY 2012 funds were also used to complete the transition of non-DoD payloads and support to NOAA/NASA for the Joint Polar Satellite System (JPSS).</p> <p>FY 2013 Base Plans: Starting in FY 2013, DWSS will no longer be funded. DoD will utilize the remaining DMSP satellites until a follow-on capability can be acquired.</p> <p>FY 2013 OCO Plans: Not applicable</p>	173.016	43.000	-	-	-
Accomplishments/Planned Programs Subtotals	173.016	43.000	-	-	-

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305178F: <i>National Polar-Orbiting Op Env Satellite</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>
• R-48: <i>RDT&E, AF, PE 0604422F, Weather Satellite Follow-On</i>	0.000	125.000	2.000	0.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000

E. Acquisition Strategy

The restructure from the National Polar-orbiting Operational Environmental Satellite System (NPOESS) program to the Defense Weather Satellite System (DWSS) was finalized in FY 2011. The DWSS program was terminated per Congressional direction in FY 2012. DoD will utilize the remaining Defense Meteorological Satellite Program (DMSP) satellites to satisfy DoD overhead weather requirements until a follow-on capability can be acquired. All FY 2012 activities in this PE support DWSS program termination.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305178F: <i>National Polar-Orbiting Op Env Satellite</i>	PROJECT 644056: <i>National Polar-orbiting Operational Env. Sat. Syst.</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
DWSS Development and System Integration	C/CPIF	Northrop Grumman:Redondo Beach, CA	465.687	34.000		-		-		-	0.000	499.687	0.000
GFE Sensor Development	MIPR	Naval Research Lab and Johns Hopkins Applied Physics Lab:Laurel, MD & Wash, DC,	71.577	8.000		-		-		-	0.000	79.577	0.000
Subtotal			537.264	42.000		-		-		-	0.000	579.264	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
System Program Office (SPO) Support	Various	Support:El Segundo, CA	30.712	1.000		-		-		-	0.000	31.712	0.000
Subtotal			30.712	1.000		-		-		-	0.000	31.712	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
Program Management Admin	Various	Support,.	-	-		-		-		-	0.000	0.000	0.000
Subtotal			-	-		-		-		-	0.000	0.000	0.000

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305178F: <i>National Polar-Orbiting Op Env Satellite</i>	PROJECT 644056: <i>National Polar-orbiting Operational Env. Sat. Syst.</i>
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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				

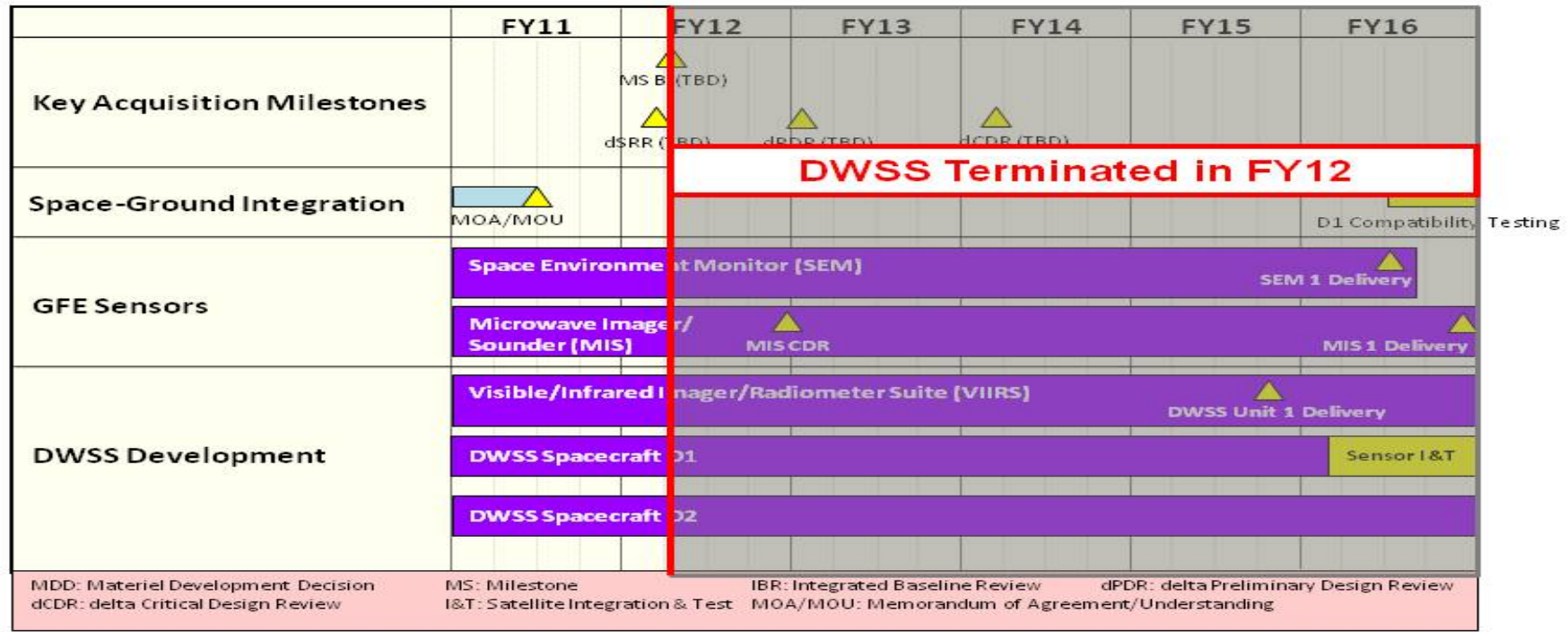
Remarks
Included in IPO Support for FY12 and out.

	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	567.976	43.000	-	-	-	0.000	610.976	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305178F: <i>National Polar-Orbiting Op Env Satellite</i>	PROJECT 644056: <i>National Polar-orbiting Operational Env. Sat. Syst.</i>



Acquisition Milestones
 Development
 Integration/Test

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305178F: <i>National Polar-Orbiting Op Env Satellite</i>	PROJECT 644056: <i>National Polar-orbiting Operational Env. Sat. Syst.</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Microwave Sensor for DWSS F1	2	2011	4	2012
Early Electrical Power Subsystem and Attitude Control Subsystem Electrical Engineering Model Testbed (EEMTB)	4	2011	4	2012
Electro-optical Sensor for DWSS F1	2	2011	4	2012
DWSS Program Termination Settlement	2	2012	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0603840F: <i>Global Broadcast Service (GBS)</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	25.793	5.631	14.652	-	14.652	-	-	-	-	Continuing	Continuing
65A023: <i>Satellite Broadcast Management Transition</i>	25.793	5.631	14.652	-	14.652	-	-	-	-	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

Global Broadcast Service provides DoD with an efficient, high data rate broadcast capability from distributed information sources to dispersed warfighters who receive the broadcast directly on small, inexpensive user terminals. This Program Element funds the broadcast transmit activities associated with the GBS architecture. The GBS broadcast receive segment consists of Service-funded terminals, known as Receive Suites, which receive the broadcast and then disseminate information to local users. Service Receive Suites and the integration into service networks are funded in other Program Elements. GBS broadcast data includes video (especially from Unmanned Aerial Vehicles), imagery, logistics, weather data, maps and operational orders. The GBS space segment includes transponders on operational Navy satellites, currently Ultra High Frequency Follow-On (UFO) 8 and UFO 10, augmentation by commercial leased Ku-band transponders, and now the Wideband Global SATCOM (WGS) System.

Currently, the GBS broadcast segment consists of Satellite Broadcast Managers (SBMs) for the broadcast build and Primary Injection Points (PIPs) for the broadcast uplink, and the Transportable Satellite Broadcast Managers (TSBMs) for the broadcast build in theatre. The SBMs and PIPs, together known as Transmit Suites, are located at Navy facilities. The Theatre Injection Point (TIP) is a ground mobile satellite terminal suite transportable via two heavy High Mobility Multi-purpose Wheeled Vehicles (HMMWV) consisting of the TSBM and the Army Phoenix terminal.

During FY09-13, the broadcast creation transitions to existing Defense Information Systems Agency (DISA) Defense Enterprise Computing Centers (DECCs). This transition addresses SBM hardware/software obsolescence issues. The DECC transition contract was awarded on 15 May 09. This effort was designated as an ACAT III program and funding was realigned (i.e., a separate project was created) to delineate between the current ACAT I GBS program and the ACAT III SBM Transition program.

In FY13, this effort completes SBM transition/upgrade to DECCs, as well as systems transmission security, test, information assurance, program office support and Operational Requirements Document (ORD) III studies.

Funding is in Budget Activity 5, System Development and Demonstration, since program is fielding pre-production equipment.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0603840F: <i>Global Broadcast Service (GBS)</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	18.171	5.680	2.337	-	2.337
Current President's Budget	25.793	5.631	14.652	-	14.652
Total Adjustments	7.622	-0.049	12.315	-	12.315
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	7.715	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.093	-0.049	12.315	-	12.315

Change Summary Explanation

FY11: $-\$0.093M$ for Congressional General Reduction; $\$7.715$ reprogramming due to higher DoD priorities

FY13: $\$12.315M$ funding increase due to schedule realignment

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Satellite Broadcast Management Transition	25.793	5.631	14.652
Description: Develop a robust satellite broadcast management architecture and implement systems transmission security (TRANSEC).			
FY 2011 Accomplishments: Continued development of a robust satellite broadcast management architecture and implemented systems TRANSEC.			
FY 2012 Plans: Continue development of a robust satellite broadcast management architecture and implement systems TRANSEC.			
FY 2013 Plans: Complete development of a robust satellite broadcast management architecture and implement systems TRANSEC.			
Accomplishments/Planned Programs Subtotals	25.793	5.631	14.652

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0603840F: <i>Global Broadcast Service (GBS)</i>
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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
• P-46: OPAF, PE 0303600F, GBS <i>Transmit Strings</i>	1.661	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	30.097
• P46: OPAF, PE 0303601F, GBS <i>Receive Suites/TIPs</i>	29.845	16.117	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	129.979
• R-180: RDT&E AF, PE 0303601F, <i>MILSATCOM Terminals, GBS</i> <i>Receive Suites</i>	3.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.036

E. Acquisition Strategy

Awarded a new contract in FY09 based on full and open competition to transfer Satellite Broadcast Management functionality to two Defense Enterprise Computing Center (DECC) facilities. The DECC will utilize a new hardware and software architecture to resolve impending Commercial off the Shelf (COTS) obsolescence, Information Assurance compliance and sustainment issues.

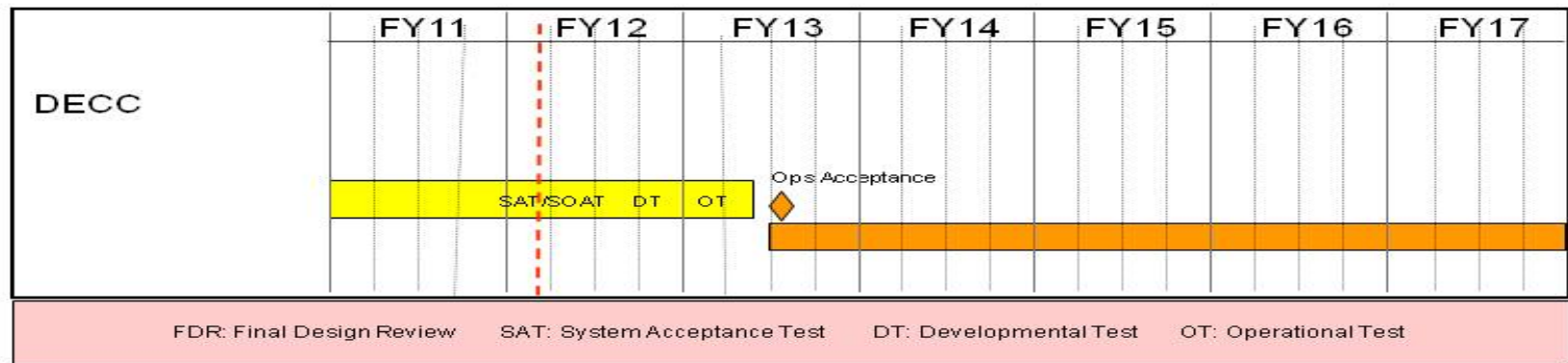
F. Performance Metrics

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0603840F: <i>Global Broadcast Service (GBS)</i>	PROJECT 65A023: <i>Satellite Broadcast Management Transition</i>

GBS DECC Schedule RDoc



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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0603840F: <i>Global Broadcast Service (GBS)</i>	PROJECT 65A023: <i>Satellite Broadcast Management Transition</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Systems Acceptance Test	3	2012	4	2012
Operational Turnover	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons 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	59.591	18.475	25.713	-	25.713	27.226	27.001	27.512	23.801	Continuing	Continuing
654236: <i>Engineering Analysis</i>	16.425	2.891	3.813	-	3.813	3.243	2.496	2.565	0.512	Continuing	Continuing
654807: <i>Nuclear Weapons & CP Technologies</i>	4.795	6.332	6.717	-	6.717	6.805	6.945	7.138	7.232	Continuing	Continuing
655708: <i>Nuclear Weapons Support</i>	38.371	9.252	15.183	-	15.183	17.178	17.560	17.809	16.057	Continuing	Continuing

Note

In FY2012, Joint Fuze efforts were transferred to PE 0604851F, ICBM-EMD, project number 657006, in order to consolidate service activities as they progress towards deployable products.

In FY2012, B61 Life Extension Program (LEP) efforts were transferred to PE 0101125F, Nuclear Weapon Modernization, in order to support B61 LEP development.

A. Mission Description and Budget Item Justification

The Air Force Nuclear Weapons Center, Kirtland AFB, NM, is the executing agency for this program. The Air Force is tasked with maintaining and providing technical expertise on all AF nuclear weapons and weapon systems and with developing and maintaining counter-chemical, biological, radiological, and nuclear (C-CBRN) capabilities. This program provides resources for technical and programmatic activities which includes performing independent analyses on all AF nuclear weapons systems activities including weapons development and sustainment; interoperability; compatibility; safety, security, and reliability; Air Force legacy nuclear stockpile management/retirement; C-CBRN assessments; and nuclear certification and nuclear certification management.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons 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	60.545	18.538	24.051	-	24.051
Current President's Budget	59.591	18.475	25.713	-	25.713
Total Adjustments	-0.954	-0.063	1.662	-	1.662
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.954	-0.063	1.662	-	1.662

Change Summary Explanation

FY13 adjustments for 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>	PROJECT 654236: <i>Engineering Analysis</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
654236: <i>Engineering Analysis</i>	16.425	2.891	3.813	-	3.813	3.243	2.496	2.565	0.512	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2012, Joint (Common) Fuze efforts were transferred to PE 0604851F, ICBM - EMD, project number 657006, in order to consolidate service activities as they progress towards deployable products. In FY13, W78 LEP will join Common Fuze in PE 0604933F, ICBM Fuze Modernization, project number 655082.

A. Mission Description and Budget Item Justification

Provide for the technical oversight of all Air Force (AF) nuclear weapons, delivery systems, and support systems to include all phases of acquisition. Provide the engineering and technical management expertise required in critical areas of nuclear weapons safety, security, reliability, operations, modernization, testing, certification, and counter proliferation.

Analyze and document nuclear weapons issues related to risk assessment, data collection, model development, model validation, and weapon effectiveness in support of the DoD-DoE Annual Surety Report; DoE Stockpile Stewardship Plan; DoD-DoE Nuclear Weapon Annual Assessment; and DoD-DoE nuclear stockpile planning and requirements assessment.

Air Force Legacy Nuclear Stockpile: In accordance with DoDI 5030.55 and AFI 63-103, funding is used for scheduled, planned, and unplanned activities that support current active and inactive stockpile. Activities include stockpile maintenance; exploratory testing associated with significant finding investigations; DoD leadership, management, and oversight of the Air Force-led, joint DoD-DoE Nuclear Project Officer and Life Extension Groups to manage the B61, B83, W78, W87, W80 and W84 nuclear warheads and associated weapons; testing in support of DoE; associated AF components, and independent technical reviews of DoE National Laboratory processes.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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

	FY 2011	FY 2012	FY 2013
Title: Joint Fuze	9.740	-	-
Description: The AF portion of a joint AF-US Navy (USN)-United Kingdom (UK) Ministry of Defense (MoD) project to evaluate/develop new arming and fuzing technologies and components (to include mature modern safety, security, and use control technologies) for use on ballistic missile warheads. Efforts will assess functional requirements, interfaces, environmental requirements, logistics/CONOPs constraints, and technologies/capabilities relating to arming, fuzing, and firing systems (AF&F) for future Air Force, Navy, and UK reentry systems. The primary goal is the development of a joint arming, fuzing, and firing 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>	PROJECT 654236: <i>Engineering Analysis</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
for application to the Air Force Mk12A, Mk21, the Navy Mk5, and a UK reentry system, and a common high-surety warhead for the Mk12A/W78 and Mk5/W88.				
<p><i>FY 2011 Accomplishments:</i> Evaluated performance requirements, physical characteristics, logistical and operation concepts, and physical environments with the goal of developing common Military Characteristics (MCs) and Stockpile-to-Target Sequence (STS) requirements. Identify potential concepts and technologies and evaluate Technology Readiness Level/Manufacturing Readiness Level (TRL/MRL).</p> <p><i>FY 2012 Plans:</i> Effort moved to ICBM EMD PE 0604851F, project number 657006</p> <p>N/A</p> <p><i>FY 2013 Plans:</i> Effort moved to ICBM Fuze Modernization PE 0604933F, project number 655082</p> <p>N/A</p>				
<p><i>Title:</i> W78 LEP</p> <p><i>Description:</i> Execute W78 Life Extension Program (LEP), specifically identifying, assessing, and integrating design features, to both extend W78 service life and enhance the nuclear security of Minuteman III (MMIII) and MMIII follow-on missile systems, to include engineering and production development through First Production Unit.</p> <p><i>FY 2011 Accomplishments:</i> Developed draft Military Characteristics (MCs) and Stockpile to Target Sequences (STs) to support 6.1 and 6.2 studies. Developed finite element model integration for testing. Performed Environmental Ground Testing design and planning. National Nuclear Security Administration (NNSA) & Air Force Finite Element Model (FEM) development, validation, and verification. Created ITT Support draft Risk Management Plan and draft Life Cycle Management Plan.</p> <p><i>FY 2012 Plans:</i> Provide DoD leadership, management, and oversight of the Air Force-led ICBM Warheads Project Officer's Group (POG) and W78/W87 stockpile. Prepare for the future W78 Life Extension Program via the W78 Joint Life Extension Study (JLES).</p> <p><i>FY 2013 Plans:</i></p>		1.022	0.373	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>	PROJECT 654236: <i>Engineering Analysis</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Effort transferred to PE 0604933F, ICBM Fuze Modernization, project number 655082.				
Title: Air Force Legacy Nuclear Stockpile		3.100	2.000	3.813
<p>Description: Air Force Legacy Nuclear Stockpile: In accordance with DoDI 5030.55 and AFI 63-103, funding is used for scheduled, planned, and unplanned activities that support current active and inactive stockpile activities to include, but not limited to, stockpile maintenance, exploratory testing associated with significant finding investigations, DoD leadership, management, and oversight of the Air Force-led, joint DoD-DOE Nuclear Project Officer and Life Extension Groups to manage the B61, B83, W78, W87, W80 and W84 nuclear weapon active and inactive stockpile, conduct ground and flight tests in support of DOE, independent technical reviews of National Laboratory process with stakeholders, and studies and analyses.</p> <p>FY 2011 Accomplishments: Conducted oversight of the Air Force Legacy Nuclear Stockpile in accordance with DoDI 5030.55 and AFI 63-103. Performed activities supporting current active and inactive stockpile including: stockpile maintenance analysis; stockpile logistics planning; DoD leadership management; oversight of the Air Force-led, joint DoD-DOE Nuclear Project Officer and Life Extension Groups to manage the B61, B83, W78, W87, W80 and W84 nuclear weapon active and inactive stockpile; independent technical reviews of National Laboratory process with stakeholders; nuclear data management; and studies and analyses as required to meet stockpile planning needs.</p> <p>FY 2012 Plans: Conduct oversight responsibilities for the Air Force Legacy Nuclear Stockpile in accordance with DoDI 5030.55 and AFI 63-103. Perform activities supporting current active and inactive stockpile including: stockpile maintenance analysis; stockpile logistics planning; providing DoD leadership, management, and oversight of the Air Force-led, joint DoD-DOE Nuclear Project Officer and Life Extension Groups to manage the B61, B83, W78, W87, W80 and W84 nuclear weapon active and inactive stockpile; conducting independent technical reviews of National Laboratory process with stakeholders; performing nuclear data management; and conducting studies and analyses as required to meet stockpile planning needs.</p> <p>FY 2013 Plans: Conduct oversight responsibilities for the Air Force Legacy Nuclear Stockpile in accordance with DoDI 5030.55 and AFI 63-103. Perform activities supporting current active and inactive stockpile including: stockpile maintenance analysis; stockpile logistics planning; providing DoD leadership, management, and oversight of the Air Force-led, joint DoD-DOE Nuclear Project Officer and Life Extension Groups to manage the B61, B83, W78, W87, W80 and W84 nuclear weapon active and inactive stockpile; conducting independent technical reviews of National Laboratory process with stakeholders; performing nuclear data management; and conducting studies and analyses as required to meet stockpile planning needs.</p>				
Title: Technical Analysis		2.021	0.518	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>	PROJECT 654236: <i>Engineering Analysis</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012
<p>Description: Provide leadership to and management of the AF-led Project Officer's Group (POG) for the Air Force legacy nuclear active and inactive stockpile. Includes technical analysis and studies in support of nuclear sustainment and Life Extension Programs.</p> <p>FY 2011 Accomplishments: Worked with national laboratories to begin recoding legacy software so it will operate on modern computing systems. Developed Nuclear Weapons support tools and models.</p> <p>FY 2012 Plans: Continue to work with national laboratories to recode legacy software so it will operate on modern computing systems. Develop Nuclear Weapons support tools and models.</p> <p>FY 2013 Plans: Effort combined with AF Legacy Nuclear Stockpile in FY13.</p>			
<p>Title: SAP Security</p> <p>Description: Provide Special Access Program and Sensitive Compartmented Information (SAP/SCI) security.</p> <p>FY 2011 Accomplishments: Provided a secure environment to facilitate successful development and execution of programs. Coordinated security matters with all levels of the AF to include subordinate units, MAJCOMS and Air Staff. Provided personnel security, first tier adjudication and coordination with Special Access Program Central Office in personnel matters. Provided information security to include training, safeguarding, development, and implementation of security operation procedures, test plans and inspections. Provided unique hardware protection method in accordance with EO 12598 (Executive Order 12598 (Classified National Security Information)), National Industrial Security Program Operating Manual (NISPOM), NISPOMSUP (NISPOM Supplement), Joint Air Force - Army - Navy (JAFAN), and Director of Central Intelligence Directive (DCID) requirements.</p> <p>FY 2012 Plans: Organic support FY12.</p>		0.042	-
<p>Title: C-CBRN</p> <p>Description: Provide technical analysis on nuclear weapon systems design and C-CBRN advanced concepts.</p> <p>FY 2011 Accomplishments:</p>		0.500	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>	PROJECT 654236: <i>Engineering Analysis</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Provided technical analysis on nuclear weapon systems design and C-CBRN advanced concepts.			
FY 2012 Plans: Effort moved to Project 654807.			
Accomplishments/Planned Programs Subtotals	16.425	2.891	3.813

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 0604933F, RDT&E: <i>ICBM Fuze Modernization</i>	0.000	0.000	73.512	0.000	73.512	140.511	284.843	389.212	433.741	Continuing	Continuing

D. Acquisition Strategy
Cost Plus Award Fee (CPAF) and Military Interdepartmental Purchase Requests (MIPRs) are/will be used to obtain technical analyses and technical support for safety, operations and counterproliferation assessments. Supporting activities are contracted separately using contract strategies deemed most appropriate to the effort. All contracts will be openly competed.

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-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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>	PROJECT 654236: <i>Engineering Analysis</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
W78 LEP	1	2011	4	2012
AF Legacy Nuclear Stockpile Support	2	2013	4	2017
Technical Analysis	1	2011	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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>				PROJECT 654807: <i>Nuclear Weapons & CP Technologies</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
654807: <i>Nuclear Weapons & CP Technologies</i>	4.795	6.332	6.717	-	6.717	6.805	6.945	7.138	7.232	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Perform engineering analyses across the counter chemical, biological, radiological, and nuclear (C-CBRN) pillars for countering Weapons of Mass Destruction (WMD) with emphasis on asymmetric threats, specifically C-CBRN, and other difficult to attack targets. Execute technical & operational analysis support for system specific programs, using commands, and leadership as directed.

Develop proposed materiel solutions. Transition selected nuclear and non-nuclear concepts into an acquisition development effort to include identifying funding, and developing technical, schedule, and programmatic content.

Prepare the necessary acquisition-related documentation to support program and/or decision reviews.

Develop, evaluate, and utilize tools required for the employment of current inventory and new concepts for combating WMD weapons to include intelligence, surveillance, and reconnaissance; battle damage assessment; and target defeat and collateral effects predictions for current and future operations.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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

	FY 2011	FY 2012	FY 2013
Title: Air Delivered Studies	1.100	1.150	1.163
Description: Analyses of warhead and associated Air Delivered system capabilities and vulnerabilities to provide recommendations for system level implementation to maintain the air delivered leg of our nuclear deterrent.			
FY 2011 Accomplishments: Created methodology, and initiated baselining efforts of current Air Delivered platform and standoff capabilities against current and future threat environments. Completed an assessment of one aircraft, cruise missile, warhead, and the integration of these systems in an operation environment that has enabled a more focused review of potential gaps that may exist within current operational system employment and planning scenarios. Additionally, efforts were conducted to assess vulnerabilities			

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>	PROJECT 654807: <i>Nuclear Weapons & CP Technologies</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>in our direct attack weapons. This information has been provided to aid in current weapon sustainment efforts, current weapon acquisitions, and is also helping shape future operational employment considerations.</p> <p>FY 2012 Plans: Continuation of FY11 efforts addressing threats to air delivered warhead, platform, gravity weapons and/or support equipment risks and shortfalls in order to assure system viability. Continue evaluation of the gaps that currently exist in our required capabilities, and an analysis of technologies and capabilities to address these gaps. This effort will evaluate, direct, and integrate warhead efforts, platform integration, and operational suitability.</p> <p>FY 2013 Plans: Continuation of FY12 efforts addressing threats to air delivered warhead, gravity weapons, platform, and/or support equipment risks and shortfalls in order to assure system viability. Continue evaluation of the gaps that currently exist in our required capabilities, and an analysis of technologies and capabilities to address these gaps. This effort will evaluate, direct, and integrate warhead efforts, platform integration, and operational suitability.</p>				
<p>Title: C-CBRN</p> <p>Description: The Counter Chemical, Biological, Radiological, and Nuclear (C-CBRN) studies and evaluation effort will address capability gaps, and conduct concept studies and technical assessments for countering CBRN threats from state and non-state entities to provide recommendations for system level implementation to maintain the nuclear deterrent. Additionally, the effort will address the evaluation of warhead and associated system capabilities relative to vulnerabilities, weapon effects, and hardness assessments to enable US forces to survive and operate efficiently and effectively.</p> <p>FY 2011 Accomplishments: Initiated a comprehensive review of the C-CB counterforce technologies that are being pursued in order to evaluate their effectiveness and operational value to the warfighter. Spearheaded international collaborations with industry to assess NATO nation capabilities that could be utilized in countering Weapons of Mass Destruction (WMD). Completed the survey of all technologies brought forth by the international community for countering WMD. Continued collaborations with the United Kingdom's Ministry of Defense in establishing capabilities to develop counter WMD capabilities and assess their effectiveness. Provided operational weaponizing assessments to support high level planning efforts against potential adversary's WMD targets.</p>		3.695	5.182	5.554

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>	PROJECT 654807: <i>Nuclear Weapons & CP Technologies</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Continued efforts to evaluate WMD decontamination methods & requirements necessary for USAF assets. Integrated GPS-denied technologies with USN efforts to more cost effectively address this mission need.			
<i>FY 2012 Plans:</i> Continue comprehensive review of the C-CB counterforce technologies that are being pursued. Complete the evaluation of their effectiveness and operational value to the warfighter and help develop an incremental investment strategy to achieve counterforce capability goals. Continue update of assessments of current capabilities to counter CBRN threats based on current and future threat environments, evaluation of gaps that currently exist in our required capabilities, and an analysis of technologies and capabilities to address these gaps. Continue collaborations with the United Kingdom's Ministry of Defense in order to address identified gaps and leverage their robust capabilities to evaluate WMD.			
<i>FY 2013 Plans:</i> Continue and update comprehensive review of the C-CB counterforce technologies that are being pursued. Complete the evaluation of their effectiveness and operational value to the warfighter and help develop an incremental investment strategy to achieve counterforce capability goals. Continue update of assessments of current capabilities to counter CBRN threats based on current and future threat environments, evaluation of gaps that currently exist in our required capabilities, and an analysis of technologies and capabilities to address these gaps. Continue collaborations with the United Kingdom's Ministry of Defense in order to address identified gaps and leverage their robust capabilities to evaluate WMD. Continue efforts to upgrade, develop, and manage a comprehensive data base system mission planning tool and associated models, to verify the nuclear air-delivered system safe-escape certification criteria, profiles, and planning tables for effective weapon employment.			
Accomplishments/Planned Programs Subtotals	4.795	6.332	6.717

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>
• None: 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
Multiple Cost Plus Award Fee (CPAF) and/or Time and Materials (T&M) contracts (the emphasis is minimal use), and Military Interdepartmental Purchase Requests (MIPRs) are/will be used to obtain technical analyses and technical support for safety, operations and counterproliferation assessments. All contracts will be competed.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>	PROJECT 654807: <i>Nuclear Weapons & CP Technologies</i>

BPAC 654807

• **Air Delivered**

• **C-CBRN**

	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Air Delivered	◆	◆	◆	◆	◆	◆	◆
	Study and Evaluation Report	Study and Evaluation Report	Study and Evaluation Report	Study and Evaluation Report	Study and Evaluation Report	Study and Evaluation Report	Study and Evaluation Report
C-CBRN	▲◆	◆	◆	◆	◆	◆	◆
	Study and Evaluation Report	Study and Evaluation Report	Study and Evaluation Report	Study and Evaluation Report	Study and Evaluation Report	Study and Evaluation Report	Study and Evaluation Report

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>	PROJECT 654807: <i>Nuclear Weapons & CP Technologies</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Air Delivered Studies	1	2011	4	2017
C-CBRN Engineering Analysis	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>	PROJECT 655708: <i>Nuclear Weapons 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
655708: <i>Nuclear Weapons Support</i>	38.371	9.252	15.183	-	15.183	17.178	17.560	17.809	16.057	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2012 B61 Life Extension Program (LEP) efforts were transferred to PE 0101125F, Nuclear Weapon Modernization, in order to support B61 LEP development.

A. Mission Description and Budget Item Justification

(U) Provide direct technical and engineering support for all Air Force (AF) nuclear weapon systems, support systems, facilities, and special procedures. Perform studies and analyses for nuclear capable aircraft and missile systems to include ground and maintenance support equipment required to meet certification, safety, security, reliability, operational, and other requirements; oversee and manage the AF nuclear certification process; interface with the DoD and DoE to include national laboratories, the Air Staff, operational commands, and AF nuclear weapon system program offices to accomplish nuclear weapon sustainment and life extension programs. Provide nuclear surety and certification support. Prepare nuclear surety design criteria, standards, specifications, and related requirements documents for all nuclear capable Air Force ground launched missile systems. Includes nuclear certification program management.

(U) Budget Activity Justification: This program is in Budget Activity 5, System Development and Demonstration (SDD), because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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

	FY 2011	FY 2012	FY 2013
Title: B61 LEP	24.111	-	-
Description: Perform B61 Life Extension Program (LEP), Option Studies, and associated DoD acquisition.			
FY 2011 Accomplishments: Provided leadership, management, and oversight of the Air Force-led Nuclear Project Officer Group (NPOG) and B61 LEP active and inactive stockpile. Perform activities in support of associated DoD acquisition, potential competitive prototype analyses, aircraft and weapon integration efforts.			
FY 2012 Plans: Effort moved to Nuclear Weapon Modernization PE 0101125F, project number 657007			
Title: Nuclear Surety and Certification	5.105	0.400	4.462

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>	PROJECT 655708: <i>Nuclear Weapons Support</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Description: Prepare nuclear surety design criteria, standards, specifications, and related requirements documents for all nuclear capable Air Force ground launched missile systems. Includes nuclear certification program management.</p> <p>FY 2011 Accomplishments: Completed scheduled nuclear capable aircraft surveillance testing and bomb rack performance testing. Completed Abbreviated Technical Nuclear Surety Analyses for Minuteman III Remote Visual Assessment system and Strike Fighter Operational Safety Review. Completed Facilities Configuration Certification for Kirtland Munitions Maintenance and Storage Complex (KUMMSC). Determined compatibility of over 30 nuclear weapon system modifications and provided numerous technical reviews, independent safety evaluations, and nuclear surety evaluations. Provided oversight of nuclear certification activities; Updated Master Nuclear Certification List.</p> <p>FY 2012 Plans: Continue to perform the engineering and surety analysis role by continuing studies and analyses. Continue to study issues affecting AFMC and AF nuclear weapons facilities and implement improvements.</p> <p>FY 2013 Plans: Continue to perform the engineering and surety analysis role by continuing studies and analyses. Continue to study issues affecting AFMC and AF nuclear weapons facilities and implement improvements.</p>				
<p>Title: Nuclear Surety Support</p> <p>Description: Provides civilian pay for acquisition professional functional expertise in support of the Air Force Nuclear Surety and Certification effort.</p> <p>FY 2011 Accomplishments: Provided civilian pay for acquisition professional functional expertise in support of the Air Force Nuclear Surety and Certification effort as new systems and items are introduced or existing systems and items were modified.</p> <p>FY 2012 Plans: Provide civilian pay for acquisition professional functional expertise in support of the Air Force Nuclear Surety and Certification effort as new systems and items are introduced or existing systems and items are modified.</p> <p>FY 2013 Plans:</p>		9.005	8.852	10.721

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>	PROJECT 655708: <i>Nuclear Weapons Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Provide civilian pay for acquisition professional functional expertise in support of the Air Force Nuclear Surety and Certification effort as new systems and items are introduced or existing systems and items are modified.			
Title: C-CBRN	0.150	-	-
Description: Identify orders of battle and provide mapping and data on sites of interest for Counter-Chemical, Biological, Radiological, and Nuclear (C-CBRN) requirements. Effort moved to Project 654807.			
FY 2011 Accomplishments: Identified orders of battle and provided mapping and data on sites of interest for Counter-Chemical, Biological, Radiological, and Nuclear (C-CBRN).			
FY 2012 Plans: Effort moved to Project 654807.			
N/A			
Accomplishments/Planned Programs Subtotals	38.371	9.252	15.183

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 0101125F, RDT&E: <i>B61 Life Extension Program</i>	0.000	83.941	80.200	0.000	80.200	110.223	185.340	156.500	134.500	Continuing	Continuing

D. Acquisition Strategy
Research, Development, Test, and Evaluation (RDT&E) projects performed by AF organizations are direct funded, other DoD and government agencies by Military Interdepartmental Purchase Request (MIPR) or other appropriate means. Contractor efforts are accomplished via cost plus award fee (CPAF) contracts awarded as a result of 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>	PROJECT 655708: <i>Nuclear Weapons Support</i>

0604222F 655708 Schedule

Task Name	2011	2012	2013	2014	2015	2016	2017
Nuclear Surety and Certification							

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604222F: <i>Nuclear Weapons Support</i>	PROJECT 655708: <i>Nuclear Weapons Support</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Nuclear Surety/Certification 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604233F: <i>Specialized Undergraduate Pilot 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	7.794	21.780	6.583	-	6.583	9.209	16.299	67.178	326.704	Continuing	Continuing
654102: <i>Joint Primary Aircraft Training System (JPATS)</i>	3.598	4.720	3.836	-	3.836	2.327	3.795	2.398	2.430	Continuing	Continuing
654376: <i>T-38 Avionics Upgrade Program (AUP)</i>	1.110	1.151	1.146	-	1.146	0.902	0.958	1.053	1.144	Continuing	Continuing
655340: <i>Advanced Trainer Replacement T-X</i>	3.086	15.909	1.601	-	1.601	5.980	11.546	63.727	323.130	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

Supports Air Education and Training Command's (AETC) implementation of Specialized Undergraduate Pilot Training (SUPT) and the Department of Defense initiative for joint pilot training. The Joint Primary Aircraft Training System (JPATS) is a joint USAF/USN venture to replace the Services' fleets of primary trainer aircraft (T-37 and T-34 respectively) and their associated Ground Based Training Systems (GBTS) with the T-6 and its GBTS. The Air Force is the Executive Service. The T-38 AUP is an integrated modernization of the T-38A and AT-38B cockpits to support mission ready fighter and bomber training. The Advanced Trainer Replacement (T-X) program is a replacement for the T-38 trainer aircraft used in the advanced fighter/bomber SUPT track.

Provides for development and test of upgrades and enhancements to aircraft and the Ground Based Training System (GBTS) hardware and software components.

Provides for studies and development of the next generation of advanced fighter/bomber pilot trainer aircraft and GBTS.

This program element is in Budget Activity 5, System Development and Demonstration (SDD), because it primarily involves the missionization of commercial derivative and essentially non-developmental aircraft, equipment, and components.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604233F: <i>Specialized Undergraduate Pilot Training</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	8.066	21.780	12.662	-	12.662
Current President's Budget	7.794	21.780	6.583	-	6.583
Total Adjustments	-0.272	-	-6.079	-	-6.079
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.231	-			
• Other Adjustments	-0.041	-	-6.079	-	-6.079

Change Summary Explanation

FY2011 Other Adjustments includes a Congressional General Reduction of \$41 thousand.

FY2013 includes a reduction in funding for Advanced Pilot Training to delay the Initial Operational Capability (IOC) from FY2017 to approximately FY2020.

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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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604233F: <i>Specialized Undergraduate Pilot Training</i>				PROJECT 654102: <i>Joint Primary Aircraft Training System (JPATS)</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
654102: <i>Joint Primary Aircraft Training System (JPATS)</i>	3.598	4.720	3.836	-	3.836	2.327	3.795	2.398	2.430	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 Primary Aircraft Training System (JPATS) is a joint USAF/USN venture to replace the Services' fleets of primary trainer aircraft (T-37 and T-34, respectively) and associated Ground Based Training Systems (GBTS). The T-6 aircraft and GBTS are used to train entry-level student aviators in the fundamentals of flying so they can transition into advanced training tracks leading to qualification as military pilots, combat systems officers, and naval flight officers. The program includes the purchase of aircraft, simulators, and other associated ground-based training devices, Training Integration Management System (TIMS), instructional courseware, and logistics support to include Diminishing Manufacturing Sources and Material Shortages (DMSMS) and development activities related to DMSMS. FY2013-FY2017 JPATS funding will be used to develop and test upgrades and enhancements to hardware and software components.

FY2011, FY2013 and FY2015 include funding to upgrade software and threat libraries for the Simulator for Electronic Combat Technology (SECT), a generic electronic warfare simulator used to train student combat systems officers. Although in the same project, SECT is unrelated to the JPATS program.

This program element is in Budget Activity 5, System Development and Demonstration (SDD), because it primarily involves the missionization of commercial derivative aircraft, equipment, and components.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: JPATS	2.105	4.720	2.340	-	2.340
Description: JPATS studies & development efforts					
FY 2011 Accomplishments: JPATS studies and development activities such as parachute surveillance study.					
FY 2012 Plans: JPATS studies and development activities to include development of a T-6 Power Management Unit (PMU) software upgrade, parachute surveillance, safe/arm handle development, and engine Component Improvement Program (CIP) study.					
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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604233F: <i>Specialized Undergraduate Pilot Training</i>	PROJECT 654102: <i>Joint Primary Aircraft Training System (JPATS)</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
JPATS studies and development activities to include development of the T-6 Power Management Unit (PMU) software upgrade, parachute surveillance, safe/arm handle, and engine Component Improvement Program (CIP) studies. FY 2013 OCO Plans: N/A					
Title: SECT Description: Simulator for Electronic Combat Technology (SECT) FY 2011 Accomplishments: Update threat database definitions and threat library FY 2012 Plans: N/A FY 2013 Base Plans: Update threat database definitions and threat library. FY 2013 OCO Plans: N/A	1.493	-	1.496	-	1.496
Accomplishments/Planned Programs Subtotals	3.598	4.720	3.836	-	3.836

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>
• APAF, PE 0804740F, JPATS Initial...: <i>JPATS Initial Spares</i>	0.454	1.944	0.021	0.000	0.021	0.824	0.838	0.847	0.861	Continuing	Continuing
• APAF, PE 0804740F, JPATS Modific...: <i>JPATS Modifications</i>	24.508	15.086	15.494	0.000	15.494	10.027	12.471	12.800	13.632	Continuing	Continuing
• APAF, PE 0804740F, JPATS Post Pr...: <i>JPATS Post Production Support</i>	9.398	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.398

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604233F: <i>Specialized Undergraduate Pilot Training</i>	PROJECT 654102: <i>Joint Primary Aircraft Training System (JPATS)</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>
• APN, PE 0804745N, JPATS <i>Acquisition: JPATS USN Weapon System</i>	26.100	256.906	278.884	0.000	278.884	289.950	15.959	0.110	0.126	Continuing	Continuing
• APN, PE 0804745N, JPATS <i>Modifica...: JPATS USN Modifications</i>	1.821	0.524	1.552	0.000	1.552	1.579	1.606	1.650	1.679	Continuing	Continuing
• APN, PE 0804745N, JPATS <i>Initial ...: JPATS USN Initial Spares</i>	0.000	7.285	7.434	0.000	7.434	12.022	0.000	0.000	0.000	0.000	76.841

D. Acquisition Strategy

JPATS was competitively awarded with the intent of maximizing the use of commercially available equipment and best commercial practices. Initially, the JPATS Program competitively awarded two contracts: a Firm Fixed Price Contractor Logistics Support (CLS) Operations and Maintenance funded contract and a Fixed Price Incentive Firm Target (FPIF) manufacturing development (MD)/production contract with seven options. The FY2002 (Lots 9-13) production contract for both the air vehicle and GBTS is Firm Fixed Price, FAR Part 12 (commercial). The FY2007 production follow-on contract for both the air vehicle and GBTS was awarded as a FAR Part 15 action.

The SECT upgrade effort is an Engineering Change Proposal (ECP) to the competitively awarded Firm Fixed Price Contractor Logistics Support (CLS) contract.

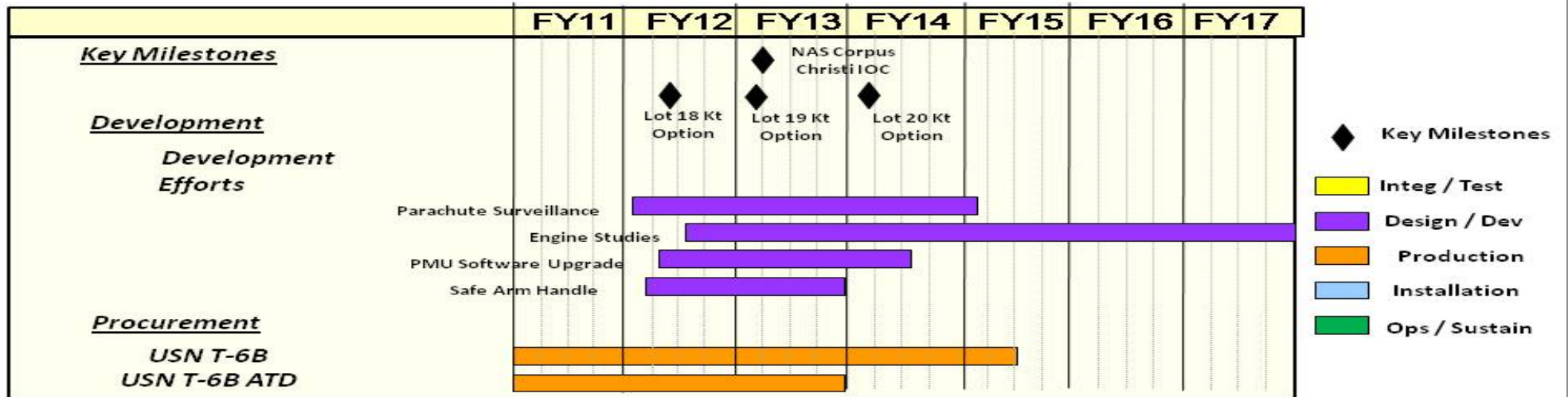
E. Performance Metrics

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.

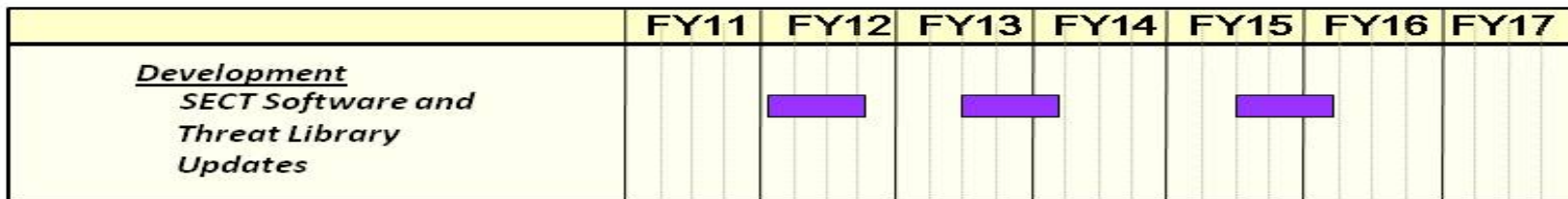
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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604233F: <i>Specialized Undergraduate Pilot Training</i>	PROJECT 654102: <i>Joint Primary Aircraft Training System (JPATS)</i>

Joint Primary Aircraft Training System (JPATS)



Simulator for Electronic Combat Technology (SECT)



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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604233F: <i>Specialized Undergraduate Pilot Training</i>	PROJECT 654102: <i>Joint Primary Aircraft Training System (JPATS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JPATS Parachute Surveillance System Development	1	2012	1	2015
JPATS Engine Studies	3	2012	4	2017
JPATS Power Management Unit (PMU) Software Upgrade	2	2012	3	2014
Award JPATS Lot 18 Contract Option	2	2012	2	2012
Award JPATS Lot 19 Contract Option	1	2013	1	2013
JPATS Safe Arm Handle Development	1	2012	4	2013
JPATS IOC NAS Corpus Christi	1	2013	2	2013
Award JPATS Lot 20 Contract Option	1	2014	1	2014
Continue USN T-6B Deliveries	1	2011	2	2015
Continue USN T-6B Aircrew Training Device (ATD) Deliveries	1	2011	4	2013
Update SECT Software and Threat Library (FY2011)	1	2012	4	2012
Update SECT Software and Threat Library (FY2013)	3	2013	1	2014
Update SECT Software and Threat Library (FY2015)	3	2015	1	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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604233F: <i>Specialized Undergraduate Pilot Training</i>				PROJECT 654376: <i>T-38 Avionics Upgrade Program (AUP)</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
654376: <i>T-38 Avionics Upgrade Program (AUP)</i>	1.110	1.151	1.146	-	1.146	0.902	0.958	1.053	1.144	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The T-38C Avionics Upgrade Program (AUP) installed a "Glass Cockpit" in the T-38 upgrading T-38A/B models to T-38C models. The AUP modification, which utilizes a Commercial Off-The-Shelf (COTS)/Non-Developmental Item (NDI) approach to acquire kits, is currently in sustainment phase and requires regular block upgrades to incorporate software, hardware improvements, and new requirements as mandated by Department of Defense, Federal Aviation Administration and National Aerospace System (DoD/FAA/NAS) and flight safety issues into both the aircraft and Aircrew Training Devices (ATD). This effort also includes support to obtain Joint Mission Planning System (JMPS) certification associated with each block upgrade. Further, engineering services, studies, analysis and support to determine the feasibility of incorporating changes for making informed lifecycle cost business decisions based on Diminishing Manufacturing Resources and Material Shortages (DMSMS).

This project is in Budget Activity 5, System Development and Demonstration (SDD), because it primarily involves the missionization of NDI or COTS equipment and components.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: T-38 AUP	1.110	1.151	1.146	-	1.146
Description: T-38 Avionics Upgrade Program (AUP) block software upgrades					
FY 2011 Accomplishments: Continued development of Block 9 AUP aircraft and ATD hardware/software upgrades, mission planning software, requirements driven by DoD/FAA/NAS mandates, and/or improvements identified during Test and Evaluation and AETC operations. Supported OGC, A&AS and Travel in FY11					
FY 2012 Plans: Complete test and fielding of Block 9 aircraft and Aircrew Training Device (ATD) hardware/software upgrades and JMPS mission planning software. Begin requirements definition of Block 10. Develop and replace proprietary ATD software with Government Purpose rights to ensure future viability of the aircraft and ATD systems. Design and develop hardware and software solution for requirements driven by DoD and FAA/NAS					

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604233F: <i>Specialized Undergraduate Pilot Training</i>	PROJECT 654376: <i>T-38 Avionics Upgrade Program (AUP)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
mandates, and improvements identified during test and evaluation and AETC operations. Provide travel, OGC and A&AS costs related to software development activities.					
<i>FY 2013 Base Plans:</i> Complete requirement definition and begin development of Block 10 aircraft and Aircrew Training Device (ATD) hardware/software upgrades and JMPS mission planning software. Develop and replace proprietary ATD software with Government Purpose rights to ensure future viability of the aircraft and ATD systems. Design and develop hardware and software solution for requirements driven by DoD and FAA/NAS mandates, and improvements identified during test and evaluation and AETC operations. Provide travel, OGC and A&AS costs related to software development activities.					
<i>FY 2013 OCO Plans:</i> N/A					
Accomplishments/Planned Programs Subtotals	1.110	1.151	1.146	-	1.146

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	0.000	Continuing	Continuing

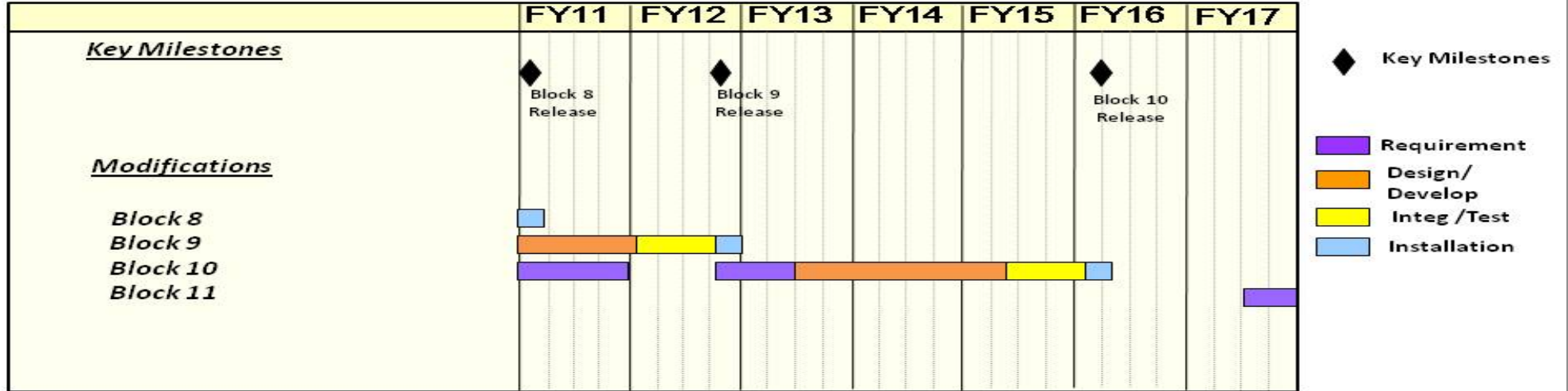
D. Acquisition Strategy
T-38 block updates are cost plus award fee options through block 9 under a contract negotiated in FY 2004, which terminates in FY12. The AUP program sustainment effort will continue through a competitive bid, Lowest Price Technically Acceptable (LPTA), C type contract from FY12 through FY17, awarded in FY12. Upon the competitive award of the AUP sustainment efforts in FY2012, software updates will be firm fixed price unless the Government negotiates an out of cycle update that is not within scope of the sustainment contract

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604233F: <i>Specialized Undergraduate Pilot Training</i>	PROJECT 654376: <i>T-38 Avionics Upgrade Program (AUP)</i>

T-38 Avionics Upgrade Program (AUP)



Break in Block 10 Requirement is due to Avionics Post Production Support (APPS) source selection process and possible transition to a new contractor.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604233F: <i>Specialized Undergraduate Pilot Training</i>	PROJECT 654376: <i>T-38 Avionics Upgrade Program (AUP)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AUP Block 8 Release	1	2011	1	2011
AUP Block 8 Fielding	1	2011	1	2011
AUP Block 9 Design/Development	1	2011	1	2012
AUP Block 9 Integration and Test	1	2012	4	2012
AUP Block 9 Fielding	4	2012	4	2012
AUP Block 9 Release	4	2012	4	2012
AUP Block 10 Requirements	1	2011	4	2011
AUP Block 10 Requirements II	4	2012	2	2013
AUP Block 10 Design/Development	2	2013	2	2015
AUP Block 10 Integration and Test	2	2015	1	2016
AUP Block 10 Fielding	1	2016	2	2016
AUP Block 10 Release	1	2016	1	2016
AUP Block 11 Requirements	2	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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604233F: <i>Specialized Undergraduate Pilot Training</i>				PROJECT 655340: <i>Advanced Trainer Replacement T-X</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
655340: <i>Advanced Trainer Replacement T-X</i>	3.086	15.909	1.601	-	1.601	5.980	11.546	63.727	323.130	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Advanced Trainer Replacement, T-X, will replace the USAF T-38 aircraft and associated Ground Based Training System (GBTS) currently used in the fighter/ bomber advanced Specialized Undergraduate Pilot Training (SUPT) track as well as in the Introduction to Fighter Fundamentals (IFF) program. The T-38 was first introduced in 1961. FY13 will consist of studies and acquisition activities to support future technology, engineering and manufacturing development.

This project is in Budget Activity 5, System Development and Demonstration (SDD), because it primarily involves the missionization of essentially non-developmental aircraft, equipment, and components.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Advanced Pilot Training (APT) Family of Systems (FoS)	3.086	15.909	1.601	-	1.601
Description: Conduct studies, analysis and acquisition activities to support technology, engineering and manufacturing development.					
FY 2011 Accomplishments: Conduct studies, analysis and acquisition activities to support technology, engineering and manufacturing development.					
FY 2012 Plans: Conduct studies, analysis and acquisition activities to support technology, engineering and manufacturing development.					
FY 2013 Base Plans: Conduct studies, analysis and acquisition activities to support technology, engineering and manufacturing development.					
FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	3.086	15.909	1.601	-	1.601

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604233F: <i>Specialized Undergraduate Pilot Training</i>	PROJECT 655340: <i>Advanced Trainer Replacement T-X</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>
• O&MAF 0804741F, Undergradua...: <i>Undergraduate Pilot Training</i>	1.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.000

D. Acquisition Strategy

A full and open competitive source selection is anticipated with a specific acquisition strategy to be determined.

E. Performance Metrics

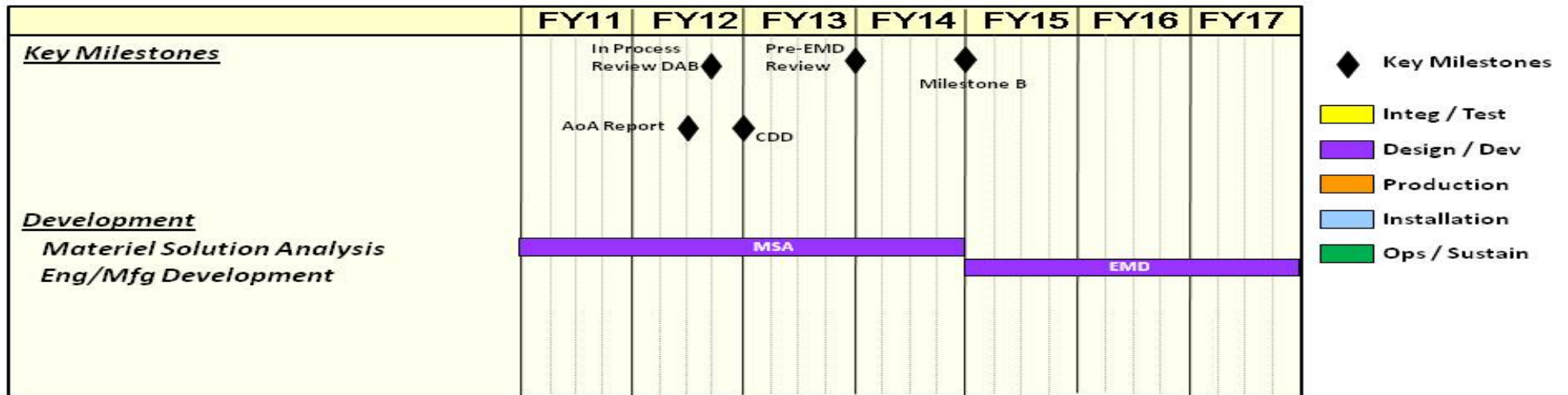
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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604233F: <i>Specialized Undergraduate Pilot Training</i>	PROJECT 655340: <i>Advanced Trainer Replacement T-X</i>

T-X (Advanced Pilot Training Family of Systems)

Notional Schedule



Note 1: Schedule is tentative pending acquisition direction (In Process Review DAB), funding, and approval
 Note 2: Anticipate acquisition strategy that directs Milestone B entry. Minor technology development activities to occur concurrently with Material Solution Analysis and Eng/Mfg Development activities.

AoA = Analysis of Alternatives
 DAB = Defense Acquisition Board
 CDD = Capability Development Document
 MS = Milestone

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604233F: <i>Specialized Undergraduate Pilot Training</i>	PROJECT 655340: <i>Advanced Trainer Replacement T-X</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Material Solution Analysis	1	2011	4	2014
Analysis of Alternatives Report	2	2012	2	2012
In Process Review Defense Acquisition Board (DAB)	3	2012	3	2012
Capability Development Document	4	2012	4	2012
Pre-Engineering Manufacturing Development (EMD) Review	4	2013	4	2013
Milestone B	4	2014	4	2014
Engineering and Manufacturing Development	1	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW 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
Total Program Element	86.955	16.880	1.975	-	1.975	1.971	2.002	2.021	2.048	Continuing	Continuing
653891: <i>Advanced IR Counter Measures (AIRCM)</i>	-	1.963	1.975	-	1.975	1.971	2.002	2.021	2.048	Continuing	Continuing
654832: <i>Precision Location and Identification (PLAID)</i>	2.795	-	-	-	-	-	-	-	-	Continuing	Continuing
655305: <i>MALD-J</i>	84.160	-	-	-	-	-	-	-	-	Continuing	Continuing
657004: <i>MALD-J Increment II</i>	-	14.917	-	-	-	-	-	-	-	Continuing	Continuing

Note

In FY 2013, Project 657004, MALD-J Increment II is terminated.

A. Mission Description and Budget Item Justification

This Program Element (PE) consolidates Air Force funding and management of common Electronic Warfare (EW) systems from Materiel Solutions Analysis through Engineering and Manufacturing Development and transition to operational capability. EW is an integral warfighting effect supporting AF Global Strike, Global Persistent Attack and Global Mobility operations as well as Joint-Coalition operations. EW systems influence, deceive, disrupt, degrade, deny, and destroy threats to air operations throughout the electromagnetic spectrum. This PE supports Electronic Support (ES), Electronic Protection (EP), and Electronic Attack (EA). ES programs support the collection, analysis, and dissemination of information related to the detection, geo-location, characterization, and identification of threats to air operations. EP Programs preserve the electromagnetic spectrum for use by friendly forces. EA programs provide self-protection through active and passive measures that deceive threats to air operations using kinetic and non-kinetic means to defeat threats that rely on the electromagnetic spectrum (Radio Frequency (RF), Electro-Optical (EO), Infrared (IR)).

This program is in budget activity 5 - System Development and Demonstration of common EW systems to meet user requirements.

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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 0604270F: <i>EW Development</i>				
BA 5: <i>Development & Demonstration (SDD)</i>					

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	89.966	26.880	56.744	-	56.744
Current President's Budget	86.955	16.880	1.975	-	1.975
Total Adjustments	-3.011	-10.000	-54.769	-	-54.769
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-10.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.552	-			
• Other Adjustments	-0.459	-	-54.769	-	-54.769

Change Summary Explanation

FY11: Adjustments of \$0.459M for economic assumptions.
 FY12: Congressional reduction of \$10M for MALD-J Increment II.
 FY13: MALD-J Increment II program 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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>				PROJECT 653891: <i>Advanced IR Counter Measures (AIRCМ)</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
653891: <i>Advanced IR Counter Measures (AIRCМ)</i>	-	1.963	1.975	-	1.975	1.971	2.002	2.021	2.048	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Advanced Infrared Countermeasure (AIRCМ) project contains related aircraft self-protection efforts aimed at increasing aircraft survivability against the increasing threat of sophisticated infrared-guided surface-to-air and air-to-air missiles. These missiles may employ sophisticated next-generation electro-optics or dual-mode IR and radio frequency seekers. AIRCМ will provide advanced IR expendable countermeasures and/or IRCМ techniques that will be functionally compatible with existing dispenser systems and employed across multiple USAF weapons systems. This also explicitly includes any and all flare and decoy development and testing that may be demanded or needed in current operations supporting the war on terrorism regardless of aircraft platform. Similar activities that are supplementary to this effort may be accomplished ad hoc using platform specific funding or through other testing activities such as joint services or NATO test groups.

This program is in budget activity 5 - System Development and Demonstration of common EW systems to meet user requirements.

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

	FY 2011	FY 2012	FY 2013
Title: IR Flare Testing	-	1.963	1.975
Description: IR flare testing and qualification on aircraft			
FY 2011 Accomplishments: NA			
FY 2012 Plans: New start FY12. Activities include qualification of IR flare cocktails on F-16 and A-10 aircraft. Flight testing on other platforms TBD.			
FY 2013 Plans: Activities include qualification of IR flare cocktails on various aircraft.			
Accomplishments/Planned Programs Subtotals	-	1.963	1.975

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 653891: <i>Advanced IR Counter Measures (AIRCM)</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>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, War Reserve Munitions - Fl...: N/A	77.234	29.244	30.932	0.000	30.932	34.931	64.624	74.853	76.200	Continuing	Continuing

D. Acquisition Strategy

Do not anticipate need to award contracts as activities will be completed with Military Interdepartmental Purchase Requests.

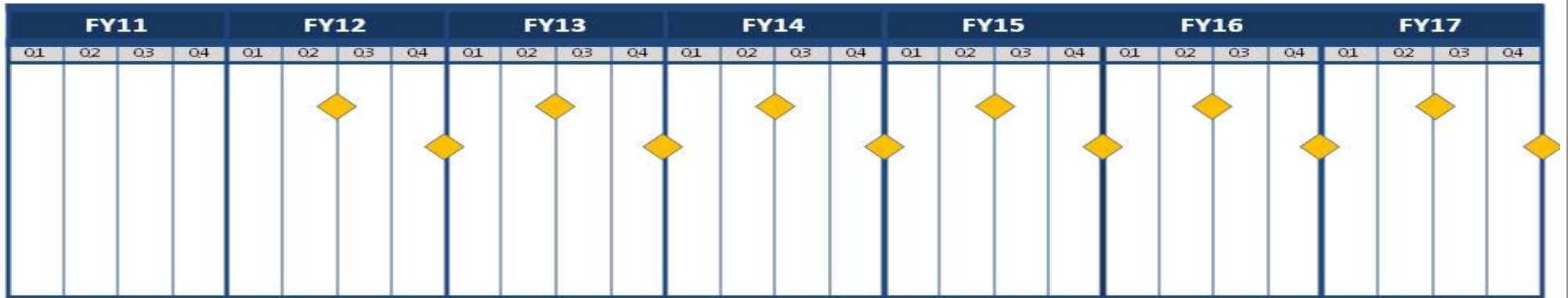
E. Performance Metrics

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: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 653891: <i>Advanced IR Counter Measures (AIRCM)</i>

Schedule



Legend:
 **Notional Test Event (Approx. 2 events per year)**

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 653891: <i>Advanced IR Counter Measures (AIRCM)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Test Events	4	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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>				PROJECT 654832: <i>Precision Location and Identification (PLAID)</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
654832: <i>Precision Location and Identification (PLAID)</i>	2.795	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

FY11: \$2.7M increase to support Developmental and Operational Test and Evaluation.

A. Mission Description and Budget Item Justification

The AN/ALR-69A Radar Warning Receiver (RWR) is an evolutionary development program consisting of a core digital receiver/processor with growth increments. The core ALR-69A program objectives are to improve identification of threat type, detect threat signals while outside of the threat envelope, and operate in a dense signal environment. Evolutionary growth spirals include single and multi-ship Precision Geolocation (PG) as well as Specific Emitter Identification (SEI). The underlying technologies and algorithms enabling PG and SEI are often collectively referred to as Precision Location and Identification (PLAID).

ALR-69A development is currently focused on a replacement RWR for AFSOC and AMC C-130 aircraft. The ALR-69A is also under consideration by AFSOC, AMC and ACC for integration and installation in other mission design series aircraft.

This program is in budget activity 5 - System Development and Demonstration of common EW systems to meet user requirements.

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

	FY 2011	FY 2012	FY 2013
Title: AN/ALR-69A	2.795	-	-
Description: Develop a common digital radar warning receiver for USAF platforms			
FY 2011 Accomplishments: Completed developmental testing and will complete operational testing certification requirements and Initial Operational Test and Evaluation (IOT&E).			
FY 2012 Plans: NA			
Accomplishments/Planned Programs Subtotals	2.795	-	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 654832: <i>Precision Location and Identification (PLAID)</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>
• None: <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

D. Acquisition Strategy

Acquisition was accomplished through full and open competition. The System Development and Demonstration (SDD) contract was awarded to Raytheon Corporation in August 2001.

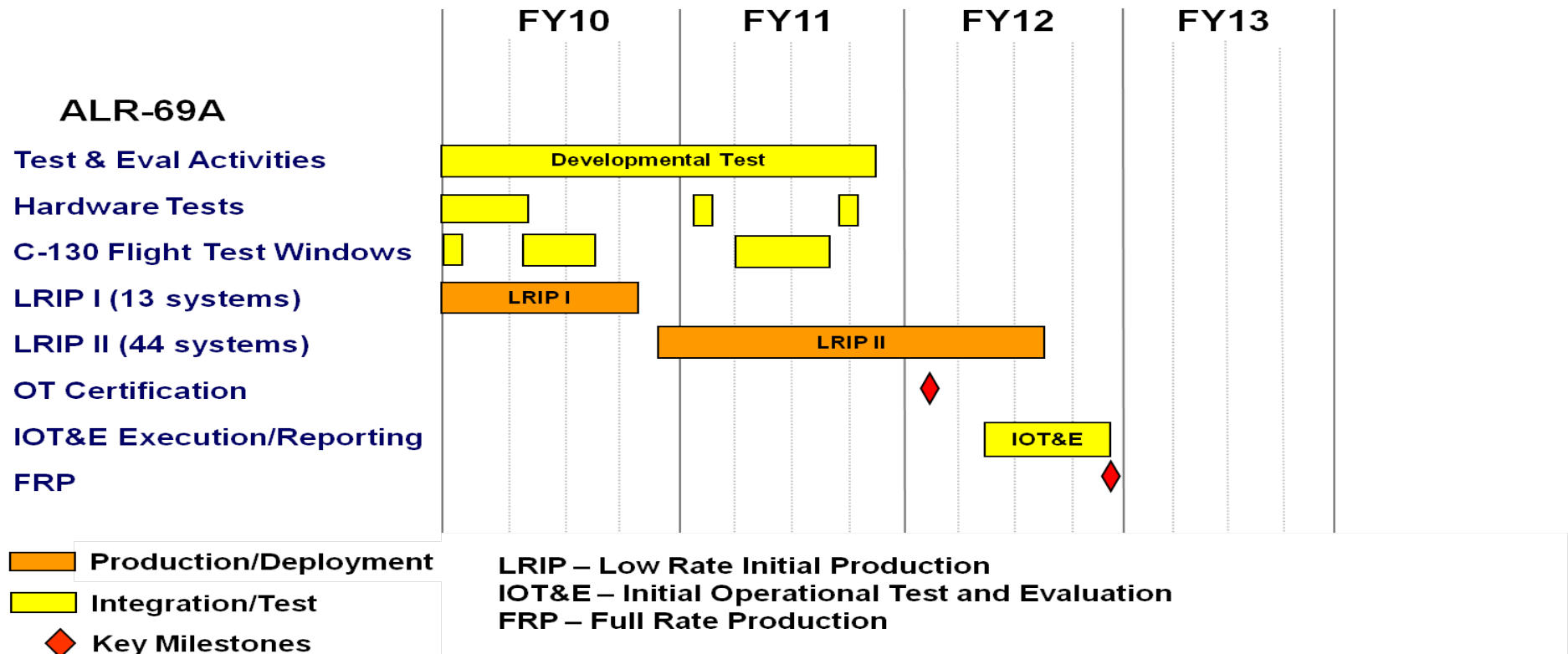
E. Performance Metrics

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 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604270F: EW Development	PROJECT 654832: Precision Location and Identification (PLAID)



ALR-69A 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 654832: <i>Precision Location and Identification (PLAID)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Initial Operational Test and Evaluation	2	2012	4	2012
Full Rate Production Decision	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 655305: <i>MALD-J</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
655305: <i>MALD-J</i>	84.160	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project develops the Miniature Air Launched Decoy Jammer (MALD-J). The jammer is a variant of the MALD decoy and will be able to operate in both decoy and jammer modes. The decoy and jammer configurations are key enablers supporting the Air Force Global Strike, Global Response, Space and C4ISR, and the Air and Space Expeditionary Force Concepts of Operations. MALD-J will provide stand-in jamming capability for the Airborne Electronic Attack Systems of Systems. It will be launched against a preplanned target and jam specific radars in a stand-in role to degrade or deny the Integrated Air Defense System (IADS) detection of friendly aircraft or munitions.

Planned efforts for this program are risk reduction (to include prototyping) and Engineering Manufacturing and Development (EMD) of the jammer configuration and any other direct increment or variant. This will include design, development, test, aircraft integration, and seamless verification.

This program is in budget activity 5 - System Development and Demonstration of common Electronic Warfare (EW) systems to meet user requirements.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Development</p> <p>Description: MALD-J Engineering and Manufacturing Development will demonstrate the ability of the MALD-J system to operate within the approved Key Performance Parameters, and that system production can be supported by demonstrated manufacturing processes.</p> <p>FY 2011 Accomplishments: Completed MALD-J EMD to include final Development Test & Evaluation and manufacturing readiness. Accomplished Milestone C to enter the Production and Deployment phase and begin Initial Operational Test & Evaluation.</p> <p>FY 2012 Plans: NA</p>	67.657	-	-
<p>Title: Feasibility Studies</p> <p>Description: Future MALD-J concept refinement to characterize the technological feasibility and capability of a future variant utilizing Gallium Nitride (GaN) technology.</p> <p>FY 2011 Accomplishments:</p>	16.503	-	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 655305: <i>MALD-J</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Continue payload, system development and modeling and simulation support. Conducted payload performance and interoperability testing and technical interchange meetings.			
FY 2012 Plans: NA, funding separated into Budget Activity Project Code 657004, represented as MALD-J Increment II.			
Accomplishments/Planned Programs Subtotals	84.160	-	-

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>
• PE0207442F, MALD/MALD-J APAF, pr...: <i>APAF, 0207442F</i>	87.144	83.022	87.556	0.000	87.556	89.348	92.448	94.987	95.059	Continuing	Continuing

D. Acquisition Strategy

A full and open competition for MALD was held in FY03 resulting in award of a cost plus award fee contract to Raytheon.

In 2010, the program completed MS B and an Engineering and Manufacturing Development (EMD) contract was awarded to Raytheon.

EMD and Milestone C completed in September 2011, and was followed by MALD-J cut-in to production.

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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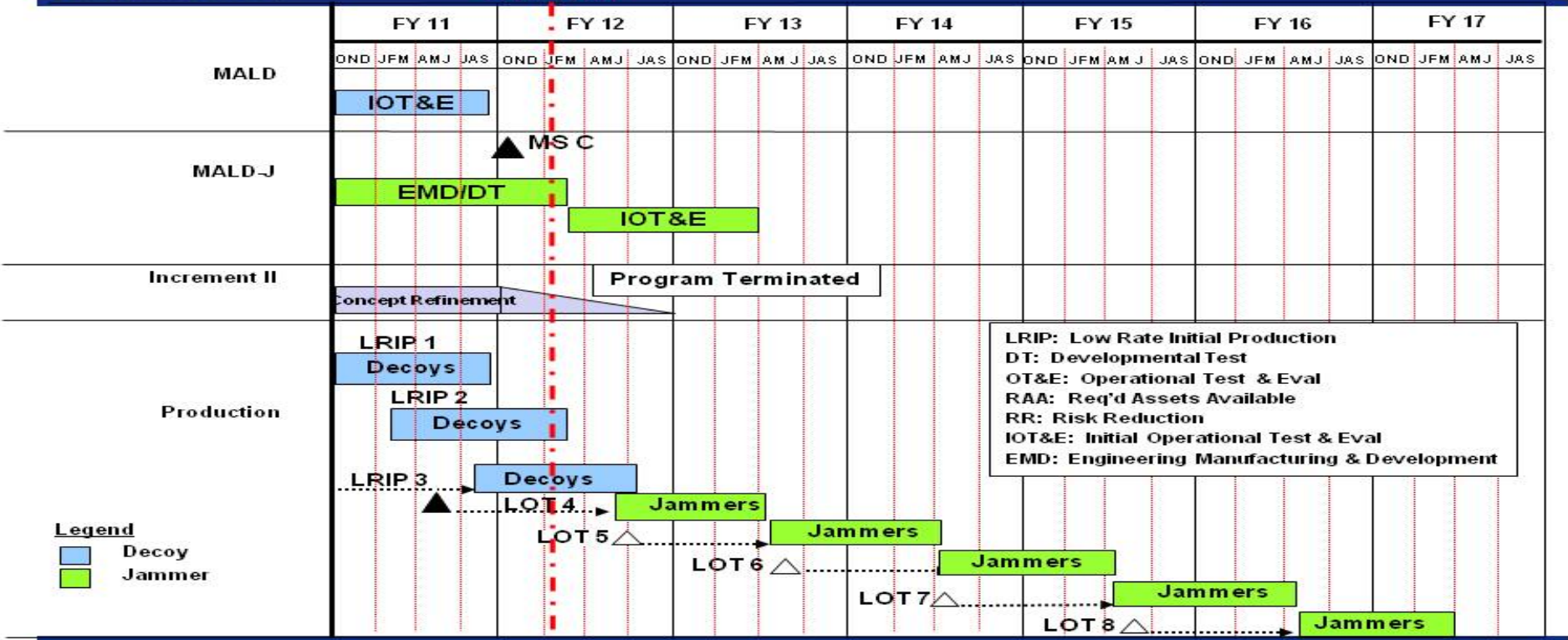
Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 655305: <i>MALD-J</i>



MALD/MALD-J Schedule

U.S. AIR FORCE

Time Now



Legend
■ Decoy
■ Jammer

LRIP: Low Rate Initial Production
DT: Developmental Test
OT&E: Operational Test & Eval
RAA: Req'd Assets Available
RR: Risk Reduction
IOT&E: Initial Operational Test & Eval
EMD: Engineering Manufacturing & Development

Integrity - Service - Excellence

5 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 655305: <i>MALD-J</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MALD-J Engineering and Manufacturing Development	1	2011	4	2011
MALD-J Milestone C	4	2011	4	2011
MALD-J Initial Operational Test and Evaluation	2	2012	2	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 657004: <i>MALD-J Increment II</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
657004: <i>MALD-J Increment II</i>	-	14.917	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2012, This project is broken out from BPAC 655305.
In FY2013 Project 657004, MALD-J Increment II was terminated.

A. Mission Description and Budget Item Justification

This project develops the Miniature Air Launched Decoy Jammer (MALD-J) Increment II. Increment II will have increased effective radiated power, sensitivity, and improved techniques to counter emerging threats and will be able to operate in both decoy and improved jammer modes. Increment II will be a key enabler for the Airborne Electronic Attack Systems of Systems supporting the Air Force Global Strike, Global Response, Space and C4ISR, and the Air and Space Expeditionary Force Concepts of Operations. It will be launched against a preplanned target and jam specific radars in a stand-in role to degrade or deny integrated air defense system detection of friendly aircraft or munitions.

This program is terminated in FY13. The Air Force is completing concept refinement and will initiate program shutdown activities.

This program is in budget activity 5 - System Development and Demonstration of common EW systems to meet user requirements.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Development & Demonstration</p> <p>Description: Development to include detailed design and test planning.</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans: Finish Increment II payload development studies and complete program shut down activities.</p>	-	14.487	-
<p>Title: System Test & Eval/Aircraft Integration</p> <p>Description: Conduct payload performance and interoperability testing.</p> <p>FY 2011 Accomplishments:</p>	-	0.430	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 657004: <i>MALD-J Increment II</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
N/A			
<i>FY 2012 Plans:</i> Finish initial payload performance testing.			
Accomplishments/Planned Programs Subtotals	-	14.917	-

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 0207442F, MALD/MALD-J APAF pr...: <i>APAF, 0207442F</i>	87.144	83.022	87.556	0.000	87.556	89.348	92.448	94.987	95.059	Continuing	Continuing

D. Acquisition Strategy
MALD-J Increment II is terminated in FY13.

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 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE
 PE 0604270F: EW Development

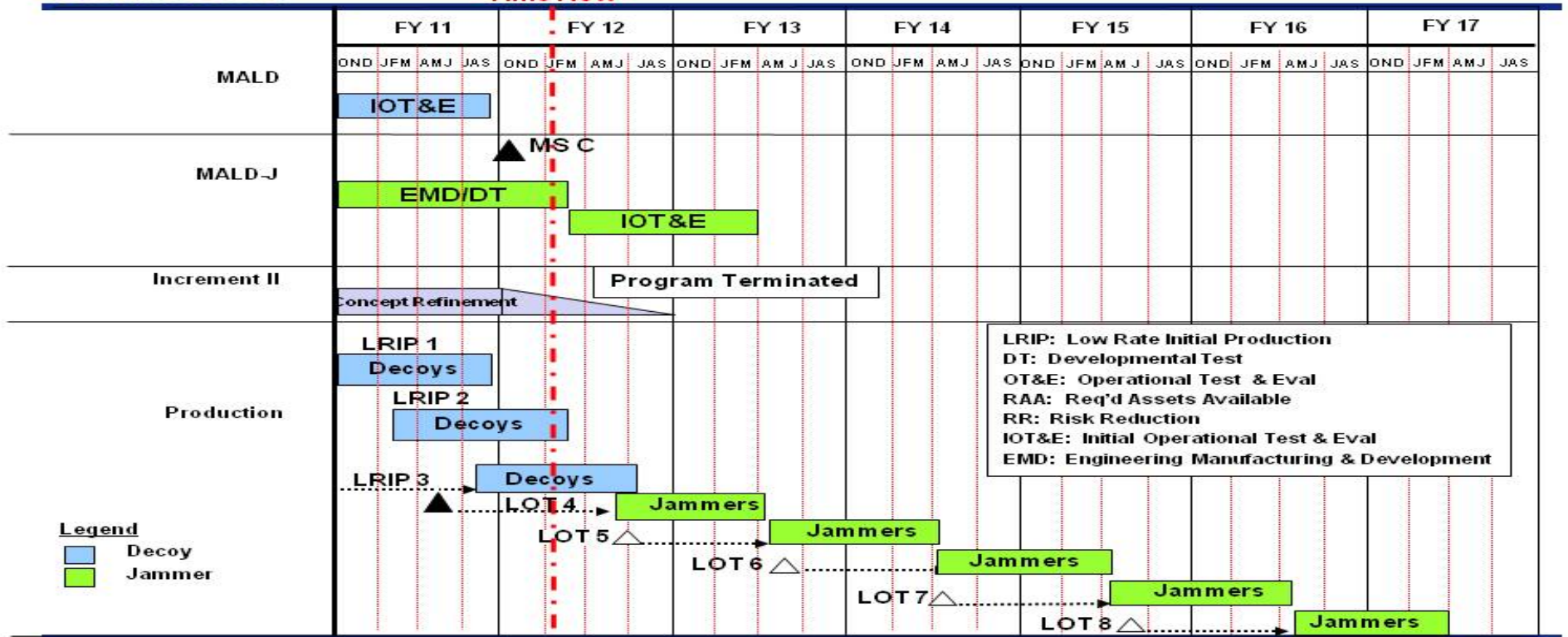
PROJECT
 657004: MALD-J Increment II



MALD/MALD-J Schedule

U.S. AIR FORCE

Time Now



LRIP: Low Rate Initial Production
 DT: Developmental Test & Eval
 OT&E: Operational Test & Eval
 RAA: Req'd Assets Available
 RR: Risk Reduction
 IOT&E: Initial Operational Test & Eval
 EMD: Engineering Manufacturing & Development

Legend
 Decoy
 Jammer

Integrity - Service - Excellence

5 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 657004: <i>MALD-J Increment II</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Program Termination	1	2013	1	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280F: <i>JOINT TACTICAL RADIO SYSTEMS (JTRS)</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	0.628	-	2.594	-	2.594	29.823	21.395	22.705	22.529	Continuing	Continuing
655068: <i>Joint Tactical Radio System (JTRS)</i>	0.628	-	2.594	-	2.594	29.823	21.395	22.705	22.529	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 JTRS Budget Item Justification is located in the Navy's FY 2013 President's Budget under Joint Tactical Radio System Program (PE 0604280N, BA 5). The JTRS development program is a joint program managed through the JTRS JPEO. The funding for the program resides in the Navy budget. Joint Tactical Radio System (JTRS) is the Department of Defense family of common software-defined programmable radios that will form the foundation of radio frequency information transmission for Joint Vision 2020. JTRS radios are intended to interoperate with existing radio systems and provide the warfighter with additional communications capability to access maps and other visual data, communicate via voice and video and obtain information directly from battlefield sensors. JTRS will provide internet protocol (IP)-based capability to the warfighter and will replace all existing tactical radios based on the Services' migration plans. 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. JTRS is a key enabler that will provide dynamic connectivity throughout the battle space to operate within the network centric operational environment. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280F: <i>JOINT TACTICAL RADIO SYSTEMS (JTRS)</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	0.631	180.364	64.848	-	64.848
Current President's Budget	0.628	-	2.594	-	2.594
Total Adjustments	-0.003	-180.364	-62.254	-	-62.254
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.003	-180.364	-62.254	-	-62.254

Change Summary Explanation

FY11 Congressional General Reduction of 0.003M in Other Adjustment row.

The JTRS development program is a joint program managed through the JTRS JPEO. Each of the joint services, including the Air Force, transfers its funding to the Navy's budget under Joint Tactical Radio System Program (PE 0604280N, BA 5). This annual transfer of funds to the Navy PE is the cause of the seemingly drastic change from current (\$180M in FY12, and \$65M in FY13) to future fiscal years. The reduction in funding in RDT&E predicted from FY 2013 to 2016 is based upon the anticipated maturation of program development.

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: JTRS	0.628	-	2.594	-	2.594
Description: The JTRS budget justification is located in the Navy's FY 2013 President's Budget under Joint Tactical Radio System Program (PE 0604280N, BA 5).					
FY 2011 Accomplishments: The JTRS budget justification is located in the Navy's FY 2011 President's Budget under Joint Tactical Radio System Program (PE 0604280N, BA 5) since the JTRS program is a joint program and the funding resides in the Navy's Budget.					
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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280F: <i>JOINT TACTICAL RADIO SYSTEMS (JTRS)</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
The JTRS budget justification is located in the Navy's FY 2012 President's Budget under Joint Tactical Radio System Program (PE 0604280N, BA 5) since the JTRS program is a joint program and the funding resides in the Navy's Budget. FY 2013 Base Plans: The JTRS budget justification is located in the Navy's FY 2013 President's Budget under Joint Tactical Radio System Program (PE 0604280N, BA 5) since the JTRS program is a joint program and the funding resides in the Navy's Budget. FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	0.628	-	2.594	-	2.594

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 0207423F, JTRS: <i>Other Aircraft (BP11)</i>	8.275	58.542	11.639	0.000	11.639	5.790	4.605	0.000	0.000	Continuing	Continuing
• OPAF, PE 0207423F, JTRS: <i>Tactical C-E Equipment</i>	170.673	38.567	56.229	0.000	56.229	68.756	32.837	26.161	25.597	Continuing	Continuing
• RDT&E, PE 0207423F, JTRS: <i>Advanced Comm Systems</i>	52.480	43.964	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.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280F: <i>JOINT TACTICAL RADIO SYSTEMS (JTRS)</i>	PROJECT 655068: <i>Joint Tactical Radio System (JTRS)</i>

JTRS Development Schedule

The JTRS budget justification is located in the Navy's FY2013 Budget under Joint Tactical Radio System program (PE 0604280N, BA5) since the JTRS program is a joint program and the funding resides in the Navy's budget.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280F: <i>JOINT TACTICAL RADIO SYSTEMS (JTRS)</i>	PROJECT 655068: <i>Joint Tactical Radio System (JTRS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
The JTRS budget justification is located in the Navy's FY 2013 Budget under Joint Tactical Radio System Program (PE 0604280N, BA 5) since the JTRS program is a joint program.	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS ENTERPRISE</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	192.882	47.057	24.534	-	24.534	25.116	17.268	19.105	22.138	Continuing	Continuing
655050: <i>TDL System Integration</i>	67.362	32.636	20.310	-	20.310	19.604	17.268	19.105	22.138	Continuing	Continuing
655262: <i>Family of Gateways</i>	125.520	14.421	4.224	-	4.224	5.512	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Tactical Data Networks Enterprise (TDNE) contributes to the development, delivery and deployment of the next generation aerial layer network through a portfolio of legacy and advanced waveform and network management development/management efforts that advance interoperability and connectivity. This will be accomplished via fielded and future ground and gateway investments while addressing warfighter urgent demands through the establishment of Quick Reaction Capabilities (QRC). The TDNE conceptualizes, acquires and fields aerial networking capabilities to support legacy, current, in-development, and future systems across all domains of information exchange that enables strike, mobility, special operations, Command and Control (C2), Intelligence, Surveillance and Reconnaissance (ISR), air, surface, subsurface and space operations. These capabilities ensure a robust and agile extension of the global information domain down to the tactical edge in support of the warfighter.

Funding will provide for the study, analysis, enhancement, development, integration, demonstration, test, and evaluation of Tactical Data Links (TDLs) as a subset of the broader Aerial Layer Network. TDLs are used in both peace time and combat environments to exchange information such as character-oriented and 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 by providing enhanced situational awareness, positive combat identification of aircraft in the network, correlation of on- and off-board sensor data, digital sharing of machine to machine target and threat information, thereby, 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).

Funding also supports Family of Gateway study, analysis, enhancement, development, integration, demonstration, test, and evaluation efforts that will allow joint combat forces to exchange information quickly and accurately by bridging discrete airborne, terrestrial, maritime, and space-based C4ISR networks to produce operational effects not possible within individual networks. Gateway functions include enabling interoperability between data formats, protocols, and communication mediums. Additionally, gateway functions extend the range of connectivity, consolidate data from multiple networks into high capacity links for transmission to key C4ISR nodes, routes information between disadvantaged users, and correlates data from multiple sources to improve accuracy. Gateway functions also provide application hosting, shared data storage, on-demand information access, smart data forwarding, and system monitoring/network management. Funding will also support Quick Reaction Response capability requests by the warfighter and support activities associated with the Joint Aerial Layer Network (JALN) Analysis of Alternatives.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS ENTERPRISE</i>
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This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	132.941	52.355	32.351	-	32.351
Current President's Budget	192.882	47.057	24.534	-	24.534
Total Adjustments	59.941	-5.298	-7.817	-	-7.817
• Congressional General Reductions	-	-1.048			
• Congressional Directed Reductions	-	-4.250			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	59.941	-	-7.817	-	-7.817

Change Summary Explanation

FY11 Congressional General Reduction of 0.658M in Other Adjustment row.

FY11 OMNIBUS increase of 60.599M in Other Adjustment row.

FY12 Congressional General Reduction (FFRDC, Sec. 8023) of 1.048M.

FY12 Congressional Directed Reduction of 4.25M from FY12 Defense Appropriation Act (incl. 3.0M for STRATCOM DNC2 and 1.25M for CLIP)

FY13 funding decrease is due to programs transitioning to sustainment.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS</i> <i>ENTERPRISE</i>	PROJECT 655050: <i>TDL System 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
655050: <i>TDL System Integration</i>	67.362	32.636	20.310	-	20.310	19.604	17.268	19.105	22.138	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Funding will provide for the study, analysis, enhancement, development, integration, demonstration, test, and evaluation of Tactical Data Links (TDL) as a subset of the broader Aerial Layer Network. TDLs are used in both peacetime and combat environments to exchange information such as character-oriented and 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 by providing enhanced situational awareness, positive combat identification of aircraft in the network, correlation of on- and off-board sensor data, digital sharing of machine to machine target and threat information and, thereby, 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.

The number of Air Force platforms hosting TDLs has expanded from C2 aircraft (E-3, E-8, etc.) to the fighter, bomber, Intelligence, Surveillance and Reconnaissance (ISR), tanker, airlift and other tactical fleets (F-15, F-16, F-22A, Rivet Joint, B-1, B-2, B-52, etc.), as well as to precision guided munitions. Utilization of TDLs in a joint environment requires the integration of terminals into host platforms and interoperability of TDL networks across all deployed joint and coalition platforms.

Efforts in this project include waveform and integration activities.

Waveform:
Waveform activities include, but are not limited to, enabling and supporting Joint Interoperability of Tactical Command and Control Systems (JINTACCS), interoperable System Management and Requirements Transformation (iSMART), Coalition Interoperability, Cursor on Target, Tactical Edge Network C2 efforts, and Link 16 Enhancements. Funding will provide training, logistics development, certification of individual TDL implementations to joint/allied standards, establishment of service-wide network management procedures/operations, and system wide enhancements/testing.

Integration:
Integration activities include, but are not limited to, the Joint Aerial Layer Network (JALN) Analysis of Alternatives (AoA), Data Link Test Facility (DTF), Air Force Participating Test Unit (AFPTU), Network Centric Capability Assessment (NCCA), the Joint Warfighting Integrated NetOps (JWIN) Joint Concept Technology Demonstration (JCTD), and Tactical Communications Suite (TCS). Funding will ensure continued enhanced interoperability of Air Force and joint assets through efforts such as the development/coordination of all TDN standards and management capabilities, configuration management, platform/system interoperability assessments, participation in the Future Airborne Capability Environment (FACE) consortium, and interoperability certification testing.

Activities also include studies and analysis to support both current program planning and execution and future program planning efforts for Tactical Data Networks.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS ENTERPRISE</i>	PROJECT 655050: <i>TDL System Integration</i>		
This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Title: Link 16 Enhancements</p> <p>Description: Link 16 Support and Sustainment efforts include enhancements to Link 16.</p> <p>FY 2011 Accomplishments: Funding supported and enabled enhancements to the Link 16 network to include the development and prototyping of the Enhanced 1553 bus chipset.</p> <p>FY 2012 Plans: N/A</p> <p>FY 2013 Plans: N/A</p>		4.683	-	-
<p>Title: Network Enabled Weapons (NEW)</p> <p>Description: Network Enabled Weapons efforts standardize weapon additions to the tactical data network; enhance precision-guided munitions effectiveness through target updates, in-flight tracking, hit indication, and abort messages; and improves operational assessment, re-strike decisions, and ISR tasking decisions.</p> <p>FY 2011 Accomplishments: Completed Link 16 message standard updates allowing for the future integration of network enabled weapons into current and future warfighting capabilities.</p> <p>FY 2012 Plans: N/A</p> <p>FY 2013 Plans: N/A</p>		0.744	-	-
<p>Title: TDN Integration</p> <p>Description: TDN Integration efforts include JSS, IFS, DTF, NCCA, JAN-TE, Coalition Interoperability, JALN AoA, and JWIN JCTD.</p> <p>FY 2011 Accomplishments:</p>		14.965	9.832	7.050

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS</i> <i>ENTERPRISE</i>	PROJECT 655050: <i>TDL System Integration</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Funding provided training, logistics, development, and certification to individual TDL implementations to joint/allied standards.</p> <p>FY 2012 Plans: Funding provides training, logistics, development, and certification to individual TDL implementations to joint/allied standards.</p> <p>FY 2013 Plans: Funding will provide training, logistics, development, and certification to individual TDL implementations to joint/allied standards.</p>				
<p>Title: Joint Interoperability of Tactical Command and Control Systems (JINTACCS)</p> <p>Description: JINTACCS efforts include JINTACCS, iSMART, and AFPTU. JINTACCS ensures interoperability of AF TDL systems with associated joint, allied, and coalition systems and includes development, interoperability certification, TDL message standard implementation (e.g., Links 11A/B, 16, 22, VMF, IBS, MADL), and configuration management of standards.</p> <p>FY 2011 Accomplishments: Ensured compatibility and interoperability of Tactical Data Links by conducting necessary joint compatibility and interoperability tests.</p> <p>FY 2012 Plans: Ensuring compatibility and interoperability of Tactical Data Links by conducting necessary joint compatibility and interoperability tests.</p> <p>FY 2013 Plans: Funding will ensure compatibility and interoperability of Tactical Data Links by conducting necessary joint compatibility and interoperability tests.</p>		6.217	7.353	6.387
<p>Title: Cursor on Target (CoT)</p> <p>Description: CoT is a simple, extensible, 'What, When, Where' (W3) XML message format for interconnecting tactical information systems. The CoT suite consists of the W3 base schema, 14 tailored sub-schemas, and a set of S/W plug-ins and translators that facilitate machine to machine (M2M) transmission of C2, ISR, and situational awareness data at reduced cost compared with traditional integration methods.</p> <p>FY 2012 Plans: Funding supports development, test, certification and accreditation of new CoT apps/plug-ins/schema and transitioning of apps/plug-ins/schema to sustainment.</p> <p>FY 2013 Plans:</p>		-	1.495	1.528

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS</i> <i>ENTERPRISE</i>	PROJECT 655050: <i>TDL System Integration</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Funding will support development, test, certification and accreditation of new CoT apps/plugin-schema and transitioning of apps/plugin-schema to sustainment.			
Title: Gateways Integration	40.753	13.956	5.345
Description: Supporting integration efforts including CLIP, Quick Reaction Capabilities (QRC), that cover work to support AF and Joint Urgent Operational Needs, CABLE, and Other Gateways.			
FY 2011 Accomplishments: Supported integration efforts including CLIP, Quick Reaction Capabilities (QRC), that cover work to support AF and Joint Urgent Operational Needs, CABLE, and Other Gateways.			
FY 2012 Plans: Supporting integration efforts including CLIP, Quick Reaction Capabilities (QRC), that cover work to support AF and Joint Urgent Operational Needs, and Other Gateways.			
FY 2013 Plans: Funding will support integration efforts including QRC, that cover work to support AF and Joint Urgent Operational Needs, and Other Gateways.			
Accomplishments/Planned Programs Subtotals	67.362	32.636	20.310

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>	
• 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	0.000	Continuing	Continuing
• RDT&E AF, PE 0207448F: <i>C2ISR TDL</i>	1.528	1.522	1.633	0.000	1.633	1.650	1.691	1.736	1.755		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

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS</i> <i>ENTERPRISE</i>	PROJECT 655050: <i>TDL System 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>
• 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

D. Acquisition Strategy

The Airborne Networking Directorate provides for common development, integration, and interoperability across the entire Airborne Network and ensures that data links are procured and maintained as a joint, end-to-end command and control systems. Platform acquisition strategies vary by program, but the majority of development and integration is normally accomplished by the weapon system prime contractor.

E. Performance Metrics

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

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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 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PE 0604281F: TACTICAL DATA NETWORKS
ENTERPRISE

PROJECT

655050: TDL System Integration



Tactical Data Networks Enterprise/ Tactical Data Link System Integration

5 Jan 2012

PE 0604281F/Project 655050	FY11	FY12	FY13	FY14	FY15	FY16	FY17
NEW	[Blue bar spanning FY11 to FY12]						
JSS	[Green bar from FY11 to FY12] [Orange bar from FY11 to FY12]						
TDN Integration/Fielding	[Orange bar from FY11 to FY12] Initial/Integration/Fielding/Support Services						
JINTACCS	[Blue bar from FY11 to FY17] Configuration Management of TDL MIL-STDs						
iSMART	[Blue bar from FY11 to FY17] Interoperability Analysis of MIL-STD Compliance						
DTF/AFPTU	[Green bar from FY11 to FY17] Testing Facility Supporting AF RDT&E Efforts						
Cursor on Target (CoT)	[Blue bar from FY12 to FY17] Development, test, certification, and accreditation						
Studies and Analysis	[Blue bar from FY11 to FY17] Multiple studies/analysis for current and future program planning						

△◇ Key Events

Program Phases: [Blue] Development/Demonstration, [Green] Test, [Orange] Integration/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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS</i> <i>ENTERPRISE</i>	PROJECT 655050: <i>TDL System Integration</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NEW	1	2011	4	2011
JSS	1	2011	4	2011
TDN Integration/Fielding	1	2011	4	2011
Joint Interoperability of Tactical Command and Control Systems (JINTACCS)	1	2011	4	2017
Interoperable System Management and Requirements Transformation (iSMART)	1	2011	4	2017
Data Link Test Facility/Air Force Participating Test Unit (DTF/AFPTU)	1	2011	4	2017
Cursor on Target (CoT)	1	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS ENTERPRISE</i>	PROJECT 655262: <i>Family of Gateways</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
655262: <i>Family of Gateways</i>	125.520	14.421	4.224	-	4.224	5.512	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note
FY 2011 funding totals include \$30.0M appropriated for Overseas Contingency Operations.

A. Mission Description and Budget Item Justification

Funding supports Family of Gateway study, analysis, enhancement, development, integration, demonstration, test, and evaluation efforts that will allow joint combat forces to exchange information quickly and accurately by bridging discrete airborne, terrestrial, maritime, and space-based C4ISR networks to produce operational effects not possible within individual networks. Gateway functions include enabling interoperability between data formats, protocols, and communication mediums. Additionally, gateway functions extend the range of connectivity, consolidate data from multiple networks into high capacity links for transmission to key C2ISR nodes, route information between disadvantaged users, and correlate data from multiple sources to improve accuracy. Gateway functions also provide application hosting, shared data storage, on-demand information access, smart data forwarding, and system monitoring/network management. Funding in this project will also support Quick Reaction Capability requests by the warfighter such as the Battlefield Airborne Communications Node (BACN), 5th to 4th Generation efforts, and the STRATCOM Distributed Nuclear Command and Control (DNC2) capabilities. Additionally, funding will support activities associated with the Joint Aerial Layer Network (JALN) Analysis of Alternatives.

Efforts in this project include waveform, ground, and quick reaction capability activities.

Waveforms:

Waveform activities include, but are not limited to Common Link Integration Processing (CLIP), Situational Awareness Data Link (SADL), and 5th to 4th Generation efforts. CLIP is a software-only, platform-independent middleware application that provides gateway services between diverse message sets and waveforms. CLIP will initially be fielded on the B-1 and B-52 platforms. SADL integrates US Air Force close air support aircraft with the digitized battlefield via the US Army's Enhanced Position Location Reporting System (EPLRS).

Ground:

Ground activities include, but are not limited to the Joint Air Defense System Integrator (JADSI), Joint Range Extension (JRE) functionality [which includes the JRE Transparent Multi-Platform Gateway (TMPG) Equipment Package (JTEP)], Pocket J, and Link 16 Alaska (LAK). Funding will support enhancements to the interoperability and capabilities of fielded gateways through processing capability upgrades, operating system updates, display/graphical user interface upgrades, incorporation of additional messaging standards and protocols, and completion of gateway architecture fielding.

Quick Reaction Capability:

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS</i> <i>ENTERPRISE</i>	PROJECT 655262: <i>Family of Gateways</i>
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Quick Reaction Capability activities include, but are not limited to, BACN, Communications Airborne Layer Expansion (CABLE), and STRATCOM DNC2. Funding will support AF rapid acquisition requirements for communications bridging of waveforms through Gateway technology. Additionally, funding will be utilized for STRATCOM classified capabilities.

Activities also include studies and analysis to support both current program planning and execution and future program planning efforts for Family of Gateways.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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

	FY 2011	FY 2012	FY 2013
<p>Title: J-Range Ext/Transparent Equip Pkg (JRE/JTEP)</p> <p>Description: JRE efforts provide for TDL translation, routing, and forwarding between Link 16 and SADL networks. JTEP efforts provide for connection of line-of-sight networks and long-haul beyond-line-of-sight networks using serial and satellite links.</p> <p>FY 2011 Accomplishments: Completed fielding and technical activities in preparation for transition to sustainment.</p>	1.555	-	-
<p>Title: Common Link Integration Processing (CLIP)</p> <p>Description: Common Link Integration Processing efforts provide Link 16 and Joint Range Extension Application Protocol (JREAP) A & C message processing to the B-1B FIDL and B-52 CONECT Platforms via a software upgrade.</p> <p>FY 2011 Accomplishments: Provided an enterprise solution for Link-16 and Joint Range Extension Application Protocol (JREAP) message processing.</p> <p>FY 2012 Plans: Providing an enterprise solution for Link-16 and Joint Range Extension Application Protocol (JREAP) message processing.</p>	11.847	3.187	-
<p>Title: Situational Awareness Data Link (SADL)</p> <p>Description: Situational Awareness Data Link is the Link 16 gateway for exchange of situational awareness and command & control data based on U.S. Army Enhanced Position Location and Reporting System (EPLRS) radio. This activity develops and integrates capability enhancements to update crypto, facilitate imagery exchange, and support multiple tactical user groups within the network.</p> <p>FY 2011 Accomplishments: Provided a secure, robust Air-Air and Air-Ground data link and a means to interoperate with Link 16 through a gateway.</p> <p>FY 2012 Plans:</p>	1.960	0.261	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS ENTERPRISE</i>	PROJECT 655262: <i>Family of Gateways</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Providing a secure, robust Air-Air and Air-Ground data link and a means to interoperate with Link 16 through a gateway.				
Title: Link 16 Pocket J Description: Pocket J efforts provide for the primary ground-based TDL gateway supporting North American Aerospace Defense Command (NORAD) air sovereignty mission for Continental United States (CONUS) and President of the United States support. FY 2011 Accomplishments: Funding updated technical documents for the primary ground-based TDL gateway supporting North American Aerospace Defense Command (NORAD) air sovereignty mission for Continental United States (CONUS) and Presidential support.		1.442	-	-
Title: Joint Air Defense System Integrator (JADSI) Description: Joint Air Defense System Integrator efforts provide command & control centers a common tactical picture by receiving, processing, and correlating TDL, intelligence, and radar feeds. FY 2011 Accomplishments: Funding provided testing of a software and hardware package that connects and translates between multiple communication devices and provides situational awareness. FY 2012 Plans: Funding providing testing of a software and hardware package that connects and translates between multiple communication devices and provides situational awareness, permitting the program to transition to sustainment.		1.961	1.599	-
Title: Other Gateways Description: Other Gateways includes the Link-16 Alaska effort that provides communications infrastructure modernization for the Alaskan AOR through line-of-sight and beyond-line-of-sight Link 16 communications to facilitate early detection, identification, and intercept of potential threat aircraft. FY 2011 Accomplishments: Provided for integration of communications infrastructure modernization for the Alaskan AOR through LOS and beyond LOS Link 16 communications. FY11 funding for this program is accounted for in BPAC 655050. FY 2012 Plans: Providing for integration of communications infrastructure modernization for the Alaskan AOR through LOS and beyond LOS Link 16 communications. FY12 funding for this program is accounted for in BPAC 655050.		-	-	-
Title: Quick Reaction Capabilities		30.000	-	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS</i> <i>ENTERPRISE</i>	PROJECT 655262: <i>Family of Gateways</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Description: Quick Reaction Capabilities that include the execution of the BACN JUON, BLOS C2 TACPOD and TTNT ISR Net.</p> <p>FY 2011 Accomplishments: OCO funding supported BACN pre-planned product improvement (P3I), development, integration, and testing of multiple, high-capacity voice and data links.</p>				
<p>Title: BLOS C2</p> <p>Description: Support of the Beyond Line of Sight (BLOS) Command and Control (2) architecture. Incorporates seven Tactical Airborne Communication Pods (TACPods) into the BLOS C2 architecture on the MQ-9 vehicle and support the bi-directional movement of full motion video and collaboration between air and ground forces.</p> <p>FY 2011 Accomplishments: Funding supports the Beyond Line of Sight (BLOS) Command and Control (2) architecture. One Battlefield Airborne Communications Node (BACN) will be incorporated into the BLOS (C2) architecture and will provide the capability to receive over 50 channels of Full Motion and other C2 and intelligence, surveillance, reconnaissance information within its footprint for aggregation and subsequent transmission and provide in-theater data access. Funds also support the incorporation of seven Tactical Airborne Communication Pods (TACPods) into the BLOS C2 architecture on the MQ-9 vehicle and support the bi-directional movement of full motion video and collaboration between air and ground forces.</p>		41.000	-	-
<p>Title: TTNT ISR Net</p> <p>Description: Install Battlefield Airborne Communications Node Intelligence, Surveillance, and Reconnaissance Net (BACN ISR Net) (TTNT with C-band) on currently fielded BACN aircraft 3xBD-700 and 2xRQ-4 aircraft.</p> <p>FY 2011 Accomplishments: Funding provides an aerial layer extension to Army relevant ISR to the Edge 3G (R3G) and ISR Net and will extend the range of R3G and ISR Net beyond line-of-sight of the Persistent Threat Detection Systems (PTDS), and can provide R3G/ISR Net connectivity between forward operational bases when PTDS are non-operational due to maintenance or weather.</p>		19.600	-	-
<p>Title: STRATCOM DNC2</p> <p>Description: STRATCOM DNC2 efforts provide for the distribution of data from airborne assets to ground components for analysis, decision-making and re-tasking of critical assets.</p> <p>FY 2011 Accomplishments:</p>		16.155	9.374	4.224

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS</i> <i>ENTERPRISE</i>	PROJECT 655262: <i>Family of Gateways</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Funding supported development, test, and fielding of operational-hardened, wideband Ground Entry Points (GEPs) and testing with up to three aircraft to ensure functionality of the system in an operational environment.			
FY 2012 Plans: Funding supporting development, test, and fielding of operational-hardened, wideband Ground Entry Points (GEPs) and testing with up to three aircraft to ensure functionality of the system in an operational environment			
FY 2013 Plans: Funding will support development, test, and fielding of operational-hardened, wideband Ground Entry Points (GEPs) and testing with up to three aircraft to ensure functionality of the system in an operational environment.			
Accomplishments/Planned Programs Subtotals	125.520	14.421	4.224

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 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	0.000	Continuing	Continuing
• RDT&E AF, PE 0207448F: <i>C2ISR TDL</i>	1.528	1.522	1.633	0.000	1.633	1.650	1.691	1.736	1.755	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	

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS</i> <i>ENTERPRISE</i>	PROJECT 655262: <i>Family of Gateways</i>

D. Acquisition Strategy

The Airborne Networking Directorate provides for common development, integration and interoperability across the entire Airborne Network and ensures that data links are procured and maintained as a joint, end-to-end, command and control system. Platform acquisition strategies vary by program, but the majority of development and integration is normally accomplished by the weapon system prime contractor.

E. Performance Metrics

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

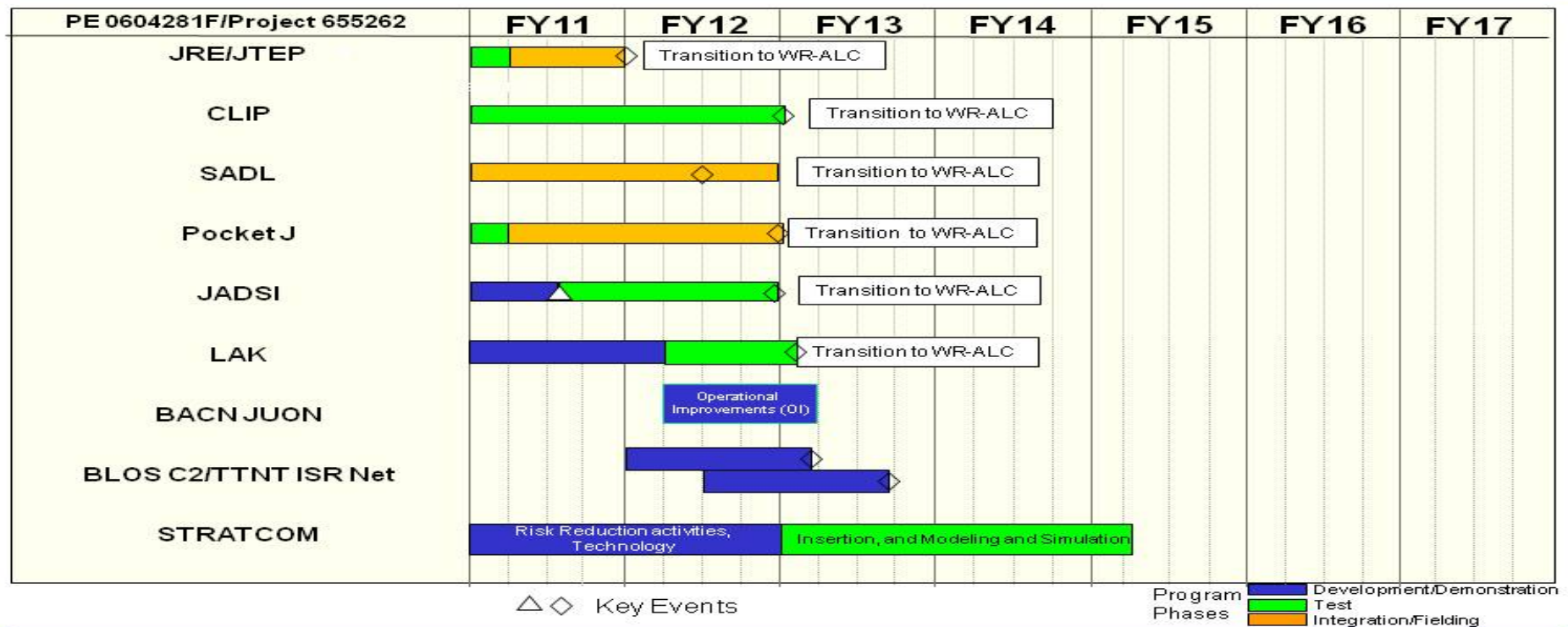
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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS ENTERPRISE</i>	PROJECT 655262: <i>Family of Gateways</i>



Tactical Data Networks Enterprise Family of Gateways Schedules

5 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604281F: <i>TACTICAL DATA NETWORKS</i> <i>ENTERPRISE</i>	PROJECT 655262: <i>Family of Gateways</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JRE/JTEP Test	1	2011	1	2011
JRE/JTEP Integration	2	2011	4	2011
JRE/JTEP Transition to WR-ALC	4	2011	4	2011
CLIP Test	1	2011	4	2012
CLIP Transition to WR-ALC	4	2012	4	2012
SADL Integration/Fielding	1	2011	4	2012
SADL Transition to WR-ALC	3	2012	3	2012
Pocket J Test	1	2011	1	2011
Pocket J Integration/Fielding	2	2011	4	2012
Pocket J Transition to WR-ALC	4	2012	4	2012
Joint Air Defense System Integrator (JADSI) Development	1	2011	3	2011
JADSI Test	3	2011	4	2012
JADSI Ver 15 Delivery	3	2011	3	2011
JADSI Transition to WR-ALC	4	2012	4	2012
Link 16 Alaska (LAK) Development	1	2011	1	2012
LAK Test	1	2012	4	2012
LAK Transition to WR-ALC	1	2013	1	2013
BACN JUON Operational Improvements	2	2012	1	2013
BLOS C2	1	2012	1	2013
TTNT ISR Net	3	2012	3	2013
STRATCOM Risk-Reduction Activities	1	2011	4	2012
STRATCOM Insertion and Modeling and Simulation	1	2013	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604287F: <i>Physical Security Equipment</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	0.049	0.051	0.051	-	0.051	0.050	0.050	0.051	0.052	Continuing	Continuing
655120: <i>Physical Security Equipment - SD/ED</i>	0.049	0.051	0.051	-	0.051	0.050	0.050	0.051	0.052	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This program is a budget activity level 5 based on the engineering and manufacturing development activities ongoing within the program. The purpose of this program is to develop, demonstrate, and test physical security equipment (PSE) systems, to include Force Protection. This program supports the protection of tactical, fixed, and nuclear weapons systems, AF personnel and AF facilities. The PSE program is organized to provide PSE RDT&E for Air Force specific needs but as a complement to and in conjunction with the PSE RDT&E programs funded by the DOD Physical Security Equipment Action Group (PSEAG). As such this program will develop, demonstrate, and test PSE in the same manner and to the same standards and architecture as PSEAG funded projects to ensure interoperability with PSEAG developed PSE. The program element also supports the identification and redesign of developmental, non-developmental, and commercial-off-the-shelf equipment to meet physical security requirements. Activities within this program will seek to reduce risk associated with integrating, fielding, and supporting the equipment once it becomes part of the overall security system. Two key means of accomplishing this mission will be through the support and conduct of PSE demonstrations and validating RF frequency and communication security (cyber) solutions. This program supports the maintenance and test support at Site C-3 and the Cold Weather Test Site (CWTS), as annotated in DoD Directive 3200.11, listing the 46TW as a Major Range and Test facility, conducting developmental and operational testing as the primary 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604287F: <i>Physical Security Equipment</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	0.050	0.051	0.051	-	0.051
Current President's Budget	0.049	0.051	0.051	-	0.051
Total Adjustments	-0.001	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.001	-			
• Other Adjustments	-	-	-	-	-

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: PHYSICAL SECURITY EQUIPMENT	0.049	0.051	0.051
Description: Demonstration and testing of Physical Security Equipment (PSE) in operational environments			
FY 2011 Accomplishments: Continue to support the demonstration and testing of PSE in operational environments			
FY 2012 Plans: Continue to support the demonstration and testing of PSE in operational environments			
FY 2013 Plans: Continue to support the demonstration and testing of PSE in operational environments			
Accomplishments/Planned Programs Subtotals	0.049	0.051	0.051

D. 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
• 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
Not Applicable

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604287F: <i>Physical Security Equipment</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.

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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 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PE 0604287F: Physical Security Equipment

PROJECT

655120: Physical Security Equipment - SD/ED



Plan of Action & Milestones (COTS)



	FY 11	FY 12	FY 13	FY 14
Wide Area Detection		RFI (Yellow Triangle), Test Start (Blue Triangle)	Test Finish (Orange Triangle), FPS2 List (Blue Triangle)	
Interior Video Motion Detection	RFI (Green Triangle)	Test Start (Blue Triangle), Test Finish (Orange Triangle)	FPS2 List (Blue Triangle)	
Video Management System	RFI (FY 10) (Green Triangle)	Test Start (Blue Triangle), Test Finish (Orange Triangle)	FPS2 List (Blue Triangle)	
Fence Sensor CWT	RFI (FY 10) (Green Triangle)	Test Start (Blue Triangle), FPS2 List (Blue Triangle)		
Predator Elite Upgrade		Equipment Install (Green Triangle), Test Start (Blue Triangle), FPS2 List (Blue Triangle)		
Interior Ceiling Sensor		RFI (Yellow Triangle), Test Start (Blue Triangle), FPS2 List (Blue Triangle)	Test Finish (Orange Triangle)	
WSTI & LRTI Refresh		RFI (Yellow Triangle), Test Start (Blue Triangle)	Test Finish (Orange Triangle), FPS2 List (Blue Triangle)	
Door Sensor/Balance Mag. Switch			RFI (Yellow Triangle), Test Start (Blue Triangle), FPS2 List (Blue Triangle)	Test Finish (Orange Triangle)
Break Beam/Active Infrared Sensor	FY13 & FY14 projects TBD based on identified capability gaps, life cycle management, etc.		RFI (Yellow Triangle), Test Start (Blue Triangle)	Test Finish (Orange Triangle), FPS2 List (Blue Triangle)
Passport Verification			RFI (Yellow Triangle), Test Start (Blue Triangle)	Test Finish (Orange Triangle), FPS2 List (Blue Triangle)

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604287F: <i>Physical Security Equipment</i>	PROJECT 655120: <i>Physical Security Equipment - SD/ED</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Demonstration and testing of PSE in operational environments	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604329F: <i>Small Diameter Bomb</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	99.992	132.881	143.000	-	143.000	115.000	54.000	18.000	64.000	Continuing	Continuing
655191: <i>SDB Increment II</i>	99.992	132.881	143.000	-	143.000	115.000	54.000	18.000	64.000	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

Small Diameter Bomb Increment II (SDB II) is a joint interest United States Air Force (USAF) and Department of Navy (DoN) ACAT ID program, with the Air Force (AF) as the lead service. SDB II provides the warfighter the capability to attack mobile targets from stand-off, through weather. SDB II addresses the following warfighter requirements: attack moving and stationary targets, adverse weather operations, multiple kills per pass, multiple ordnance carriage, precision munitions capability, reduced munitions footprint, increased weapons effectiveness, minimized potential for collateral damage, reduced susceptibility of munitions to countermeasures and provides a network enabled weapon capability via Link-16 and Ultra High Frequency (UHF) Weapon Data Link. The threshold aircraft for the AF is the F-15E, and the threshold aircraft for the DoN are the F-35B and F-35C. Objective aircraft include the F-22, F-16, F-35A, B-2, A-10, MQ-9, B-1, B-52, and the F/A-18 E/F. SDB II will be compatible with the BRU-61/A miniature munitions carriage, the CNU-660/E carriage system, the Common Munitions Bit and Reprogramming Equipment (CMBRE), and the Joint Mission Planning System (JMPS). The SDB II program will develop and field a single weapon storage container (USAF) and a dual weapon container (DoN).

SDB II completed a 42-month competitive Risk Reduction phase in October 2009. Milestone B approval to enter the Engineering and Manufacturing Development (EMD) phase was received on 29 July 2010 and the subsequent Acquisition Program Baseline was signed on 08 October 2010. A Fixed Price Incentive Firm EMD contract was awarded on 09 August 2010. SDB II is a key component of the Air Force's Global Strike Task Force CONOPs and Global Precision Attack Core Function.

Prior years funding estimate is \$493.1M.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting Engineering and Manufacturing Development tasks aimed at meeting validated requirements prior to full-rate production.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604329F: <i>Small Diameter Bomb</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	153.505	132.891	124.626	-	124.626
Current President's Budget	99.992	132.881	143.000	-	143.000
Total Adjustments	-53.513	-0.010	18.374	-	18.374
• Congressional General Reductions	-	-0.010			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-0.513	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-53.000	-	18.374	-	18.374

Change Summary Explanation

FY11 Adjustments for Congressional General Reductions -\$0.513, Congressional Directed Reductions -\$53.000

FY13 Adjustments included to fully fund approved SDB II program.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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Title: Development	76.752	100.628	113.434
Description: Engineering and Manufacturing Development (EMD): Development of SDB II design that delivers the capability described in the SDB II Capability Development Document (CDD) as specified in the government approved SDB II System Performance Specification (SPS) and prepare for production, deployment, and sustainment.			
FY 2011 Accomplishments: Completed Integrated Baseline Review (IBR) on the EMD prime contract in November 2010. Completed IBR at major subcontractor. Conducted the SDB II Critical Design Review. Continued Integrated Systems Design (ISD) activities. Activities include, but are not limited to designing, developing, and verifying production capability that will deliver production quantities while ensuring the "as built" items conform to the EMD design and meet SPS requirements. Completed build of first tri-mode seeker and completed integration onto a Captive Flight Test (CFT) vehicle. Completed first EMD Controlled Test Vehicle (CTV) drop.			
FY 2012 Plans: Continue ISD activity and deliver the first all-up-round (AUR). The first All-Up-Round (AUR) will be used to continue Developmental Testing (DT) for the SDB II Normal Attack Mode. Activities include, but are not limited to, designing, developing,			

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604329F: <i>Small Diameter Bomb</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>and verifying production capability that delivers production quantities while ensuring the “as built” items conform to the EMD design and meet SPS requirements.</p> <p>FY 2013 Plans: Continue ISD activity and deliver the first production representative AUR. Continue developmental test (DT) activities for SDB II Normal Attack Mode. Conduct first Live Fire test. Complete System Verification Review. Conduct Operational Assessment and prepare for Milestone C review. Begin reliability testing with a Captive Carry Reliability Test (CCRT) program. Activities include, but are not limited to, designing, developing, and verifying production capability that delivers production quantities while ensuring the “as built” items conform to the EMD design and meet SPS requirements.</p>			
<p>Title: Integration and Qualification Testing</p> <p>Description: F-15E aircraft Integration – Aircraft integration incorporates tests and targets, Modeling and Simulation (M&S), target lethality, data link and mission planning. Develop Suite 7E Operational Flight Program (OFP) upgrade to provide the capability to program the weapon with mission planned targets, weapon data link control, and exclusion zone information prior to launch of the weapon. It also allows the aircrew to make in-flight edits of target and weapon data link programming if/when required based on employment scenarios.</p> <p>FY 2011 Accomplishments: Conduct flight and ground testing. Continue F-15E OFP upgrades. Continue target acquisition to support testing. Conduct Advanced Joint Effectiveness Model (AJEM) lethality modeling and testing. Continue collaboration with National Security Agency (NSA) and Joint Interoperability Test Command (JITC) on weapon data link key management software. Continue Aviation and Missile Research Development and Engineering Center (AMRDEC) support used for modeling and simulation tasks and Verification, Validation, and Accreditation (VV&A). Plan development and modification of an Air and Space Operations Center software application to transmit data link network tasking. Continue to develop mission planning interfaces for the weapon.</p> <p>FY 2012 Plans: Continue to conduct ground and flight testing. Continue F-15E OFP upgrades. Continue target acquisition to support testing. Conduct AJEM lethality modeling and testing. Continue collaboration with NSA and JITC on weapon data link key managements software. Continue AMRDEC support for modeling and simulation tasks and VV&A. Continue to develop/modify Air and Space Operations Center software application to transmit data link network tasking. Deliver final release of mission planning software and continue mission planning support during Developmental Testing (DT).</p> <p>FY 2013 Plans: Continue to conduct ground and flight testing and target acquisition to support testing. Conduct Operational Assessment and prepare for Milestone C review. Conduct AJEM lethality modeling and testing. Continue collaboration with NSA and JITC on</p>	21.073	29.200	27.172

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604329F: <i>Small Diameter Bomb</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
weapon data link key managements software. Continue AMRDEC support for modeling and simulation tasks and VV&A. Continue mission planning support during DT.			
Title: Management	2.167	3.053	2.394
Description: Provide support for SDB II program office to conduct operations to accomplish its mission. This includes, but is not limited to, Advisory and Assistance Support (A&AS) for technical and managerial support, and program management administration for travel and miscellaneous supplies. The SDB II Program Office at Eglin Air Force Base will act as the Single Manager for the entire life cycle of the SDB II weapon system.			
FY 2011 Accomplishments: Continue support for Program Office to conduct operations to accomplish its mission. Provide support required to complete a CDR and IBR.			
FY 2012 Plans: Continue support for Program Office to conduct operations to accomplish its mission. Provide support required to obtain Milestone C approval.			
FY 2013 Plans: Continue support for Program Office to conduct operations to accomplish its mission. Provide support required to obtain Milestone C approval.			
Accomplishments/Planned Programs Subtotals	99.992	132.881	143.000

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>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 0207327F, Small Diameter Bomb...: <i>Production</i>	0.000	0.000	42.000	0.000	42.000	62.000	88.000	87.000	81.000	1,529.637	1,889.637
• PE 0604329N, Small Diameter Bomb...: <i>Navy RDT&E</i>	13.396	19.555	17.798	0.000	17.798	30.583	32.634	45.279	64.454	197.781	487.264
• PE 0204162N, Small Diameter Bomb...: <i>Navy Procurement</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	25.543	653.590	679.133

E. Acquisition Strategy
The SDB II Engineering and Manufacturing Development (EMD) contract was awarded using competitive procedures. At the completion of the 42-month Risk Reduction phase in October 2009, one contractor was selected in April 2010 and awarded the EMD contract in August 2010. The EMD contract is a Fixed-Price

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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 5: <i>Development & Demonstration (SDD)</i>	PE 0604329F: <i>Small Diameter Bomb</i>

Incentive Firm (FPIF) contract with priced production options for the first five production lots. SDB II production Lots 1-3 are FPIF. Production Lots 4-5 are fixed price not-to-exceed pricing with an economic price adjustment clause for labor and materials. The Government is buying the SDB II based on the contractor System Performance Specification (SPS). The contractor is accountable for system performance as defined in the SPS and a system warranty as defined in the EMD contract. Accordingly, the contractor is accountable to the Government for the design of the weapon system, as well as the planning and execution of the Development Test & Evaluation (DT&E) program to verify the system performance. The Government formally arranges and funds the use of Government flight test support for DT&E.

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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604329F: <i>Small Diameter Bomb</i>				PROJECT 655191: <i>SDB Increment II</i>					

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
Risk Reduction Contract 1	C/CPFF	Boeing:St. Louis, MO	151.592	-		-		-		-	0.000	151.592	151.592
Risk Reduction Contract 2	C/CPFF	Raytheon:Tucson, AZ	151.592	-		-		-		-	0.000	151.592	151.592
EMD Contract	C/FPIF	Raytheon:Tucson, AZ	175.195	87.116	Oct 2011	91.244	Oct 2012	-		91.244	130.724	484.279	401.129
Technical Support Contract	SS/Various	Raytheon:Tucson, AZ	0.324	3.294	Jan 2012	3.082	Jan 2013	-		3.082	3.379	10.079	10.079
MPACT High Pressure Air Compressor System	SS/FFP	Boeing:St. Charles, MO	3.175	-		-		-		-	0.000	3.175	3.175
F-15E Integration and Test Support	SS/Various	Boeing:St. Louis, MO	30.351	5.762	Nov 2011	7.247	Jan 2013	-		7.247	10.555	53.915	53.915
BRU-61/A Integration and Test Support	SS/Various	Boeing:St. Louis, MO	3.901	1.056	Mar 2012	0.594	Mar 2013	-		0.594	6.618	12.169	12.169
Mission Planning	Various	Various:Various,	4.124	0.871	Nov 2011	0.618	Dec 2012	-		0.618	1.777	7.390	7.390
Data Link Integration & Support	Various	Various:Various,	1.517	0.256	Jul 2012	0.385	Jul 2013	-		0.385	4.280	6.438	6.438
System Performance & Lethality	Various	Various:Various,	21.034	8.500	Nov 2011	4.684	Nov 2012	-		4.684	8.127	42.345	42.345
Other Product Development	Various	Various:Various,	5.504	8.685	Mar 2012	15.611	Mar 2013	-		15.611	71.999	101.799	101.799
Subtotal			548.309	115.540		123.465		-		123.465	237.459	1,024.773	941.623

Remarks
 Remarks:The EMD contract budget and Target Value differ due to:
 1) EMD contract is budgeted to the contract ceiling price.
 2) EMD contract budget includes funding for 28 additional developmental tests identified during Milestone B. The addition of the tests requires a modification to the contract and thus is not included in the current Target Value.

 The EMD Target Value includes AF funding only. The target value for the contract including Navy funding is \$450.827.

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 Government Costs	Various	Various:Various,	1.011	0.255	Apr 2012	-		-		-	0.000	1.266	1.266
Subtotal			1.011	0.255		-		-		-	0.000	1.266	1.266

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604329F: <i>Small Diameter Bomb</i>	PROJECT 655191: <i>SDB Increment II</i>
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Support (\$ 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
None.

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			
DT&E	PO	46th Test Wing:Eglin AFB, FL	7.766	8.987	Jan 2012	10.671	Jan 2013	-		10.671	38.431	65.855	65.855
Targets	PO	Various:Various,	14.763	3.823	Mar 2012	5.189	Mar 2013	-		5.189	5.959	29.734	29.734
Other Test Support	Various	Various:Various,	1.357	1.223	Dec 2011	1.281	Dec 2012	-		1.281	3.562	7.423	7.423
Subtotal			23.886	14.033		17.141		-		17.141	47.952	103.012	103.012

Remarks
None.

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			
Technical Acquisition Management Support (TAMS)	Various	COLSA Corp:Eglin AFB, FL	0.736	0.311	Mar 2012	0.142	Feb 2013	-		0.142	0.328	1.517	1.517
Technical and Engineering Acquisition Support (TEAS)	Various	Jacobs Technology:Eglin AFB, FL	13.442	0.676	Dec 2011	0.372	Dec 2012	-		0.372	0.517	15.007	15.007
Program Management Administration (PMA)	Various	Various:Eglin AFB, FL	5.719	2.066	Oct 2011	1.880	Oct 2012	-		1.880	4.424	14.089	14.089
Subtotal			19.897	3.053		2.394		-		2.394	5.269	30.613	30.613

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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 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604329F: <i>Small Diameter Bomb</i>			PROJECT 655191: <i>SDB Increment II</i>					
	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	593.103	132.881		143.000		-		143.000	290.680	1,159.664	1,076.514

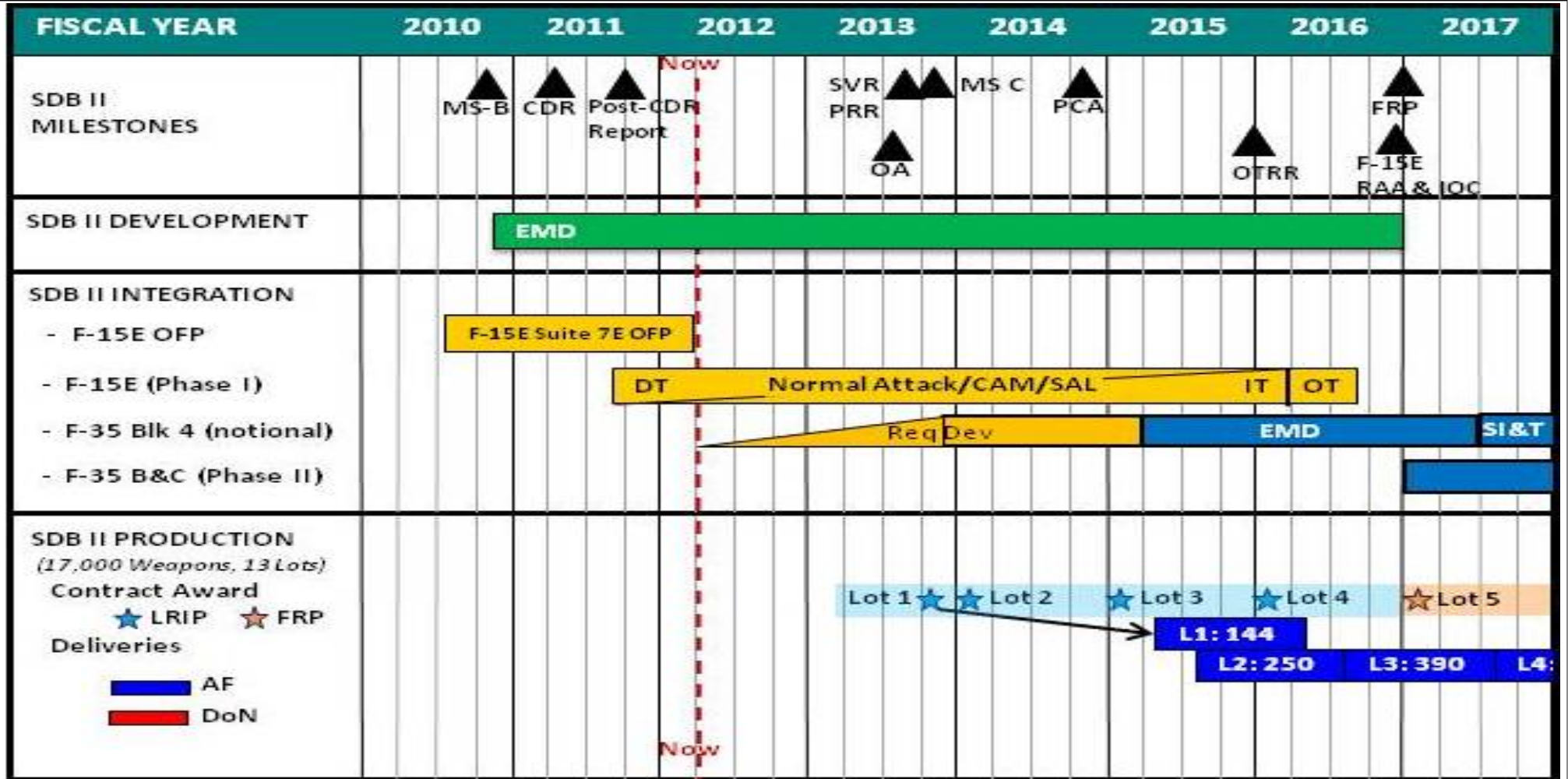
Remarks

None.

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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 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604329F: Small Diameter Bomb	PROJECT 655191: SDB Increment II
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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604329F: <i>Small Diameter Bomb</i>	PROJECT 655191: <i>SDB Increment II</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Critical Design Review	2	2011	2	2011
F-15 Integration Developmental/Operational Testing	1	2011	4	2016
Milestone C	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				R-1 ITEM NOMENCLATURE							
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>				PE 0604421F: <i>Counterspace Systems</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	37.994	31.578	28.797	-	28.797	23.930	24.187	26.676	-	Continuing	Continuing
65A001: <i>Counter Satellite Communications System</i>	20.045	19.128	16.362	-	16.362	16.277	16.373	16.728	-	Continuing	Continuing
65A003: <i>Rapid Identification Detection and Reporting System (RAIDRS)</i>	11.044	5.016	4.877	-	4.877	-	-	-	-	Continuing	Continuing
65A005: <i>Offensive Counterspace (OCS) C2</i>	6.905	7.434	7.558	-	7.558	7.653	7.814	9.948	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program supports the conduct of critical planning, technology and capability insertion, and system acquisition in support of Air Force space control systems and associated command and control development to meet current and future military space control needs. Development and acquisition of counterspace systems will be conducted, capitalizing on the technology development and risk reduction efforts of PE 0603438F, Space Control Technology. This funding supports the acquisition process including concept development, risk reduction, design, and demonstration. Space control systems include both offensive counterspace (OCS) and defensive counterspace (DCS) systems. OCS systems include the means to disrupt, deny, degrade, or destroy an adversary's space systems, or the information they provide, which may be used for purposes hostile to U.S. national security interests. DCS systems include both active and passive measures to protect U.S. and friendly space related capabilities (satellites, communications links, and supporting ground systems) from enemy attack or interference. This includes development efforts to prevent adversarial ability to use U.S. space systems and services for purposes hostile to U.S. national security interests. Counterspace Command and Control (C2) supports the development of command and control and mission planning capabilities in support of the fielding and employment of counterspace systems. This program is in Budget Activity 5, System Development and Demonstration, because it is conducting demonstration, engineering and manufacturing development tasks aimed at meeting validated counterspace and space control requirements.

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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 0604421F: <i>Counterspace Systems</i>
BA 5: <i>Development & Demonstration (SDD)</i>	

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	40.276	31.913	30.579	-	30.579
Current President's Budget	37.994	31.578	28.797	-	28.797
Total Adjustments	-2.282	-0.335	-1.782	-	-1.782
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-0.335			
• SBIR/STTR Transfer	-1.885	-			
• Other Adjustments	-0.397	-	-1.782	-	-1.782

Change Summary Explanation

FY11: -1.885M reduction for Small Business Innovative Research (SBIR)
 FY13: -\$1.782M reallocation of funding to higher Department priorities.

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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 5: <i>Development & Demonstration (SDD)</i>			PE 0604421F: <i>Counterspace Systems</i>					65A001: <i>Counter Satellite Communications 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
65A001: <i>Counter Satellite Communications System</i>	20.045	19.128	16.362	-	16.362	16.277	16.373	16.728	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This effort supports concept exploration and follow-on system development of mobile/transportable counter satellite communications capabilities derived from technologies prototyped in PE0603438F, Space Control Technology, in the area of Offensive Counterspace. Future advanced counter satellite communications systems will also be developed in this program. Included are: architecture engineering, system hardware design and development, software design and integration, testing and procurement of capabilities to provide disruption of satellite communications signals in response to USSTRATCOM requirements. This program is in Budget Activity 5, System Development and Demonstration, because it is conducting demonstration, engineering and manufacturing development tasks aimed at meeting validated counterspace and space control requirements.

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

	FY 2011	FY 2012	FY 2013
Title: Counter Communications System (CCS) Pre-planned Product Improvement (P3I)	20.045	19.128	16.362
Description: Develop, integrate, test and field the CCS Pre-planned Product Improvement (P3I) program. Includes architecture development, studies & analysis, and program office support.			
FY 2011 Accomplishments: Completed Critical Design Review and began integration and test effort for CCS P3I Increment 1.			
FY 2012 Plans: Complete integration and test of Increment 1 of the CCS P3I. Develop the Increment 1 trainer. Begin concept activities for the development of Increment 2.			
FY 2013 Plans: Continue with the CCS P3I. Deliver the Increment 1 Trainer and begin development of the Increment 2 capability.			
Accomplishments/Planned Programs Subtotals	20.045	19.128	16.362

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
• P-48: <i>OPAF, PE 0604421F, Counterspace Systems</i>	6.795	9.885	13.506	0.000	13.506	13.602	13.210	12.392	0.000	0.000	70.226

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604421F: <i>Counterspace Systems</i>	PROJECT 65A001: <i>Counter Satellite Communications System</i>

D. Acquisition Strategy

All contracts in this program element will be awarded using competitive procedures to the maximum extent possible, to upgrade existing capabilities as well as to acquire next generation capabilities through incremental acquisitions.

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.

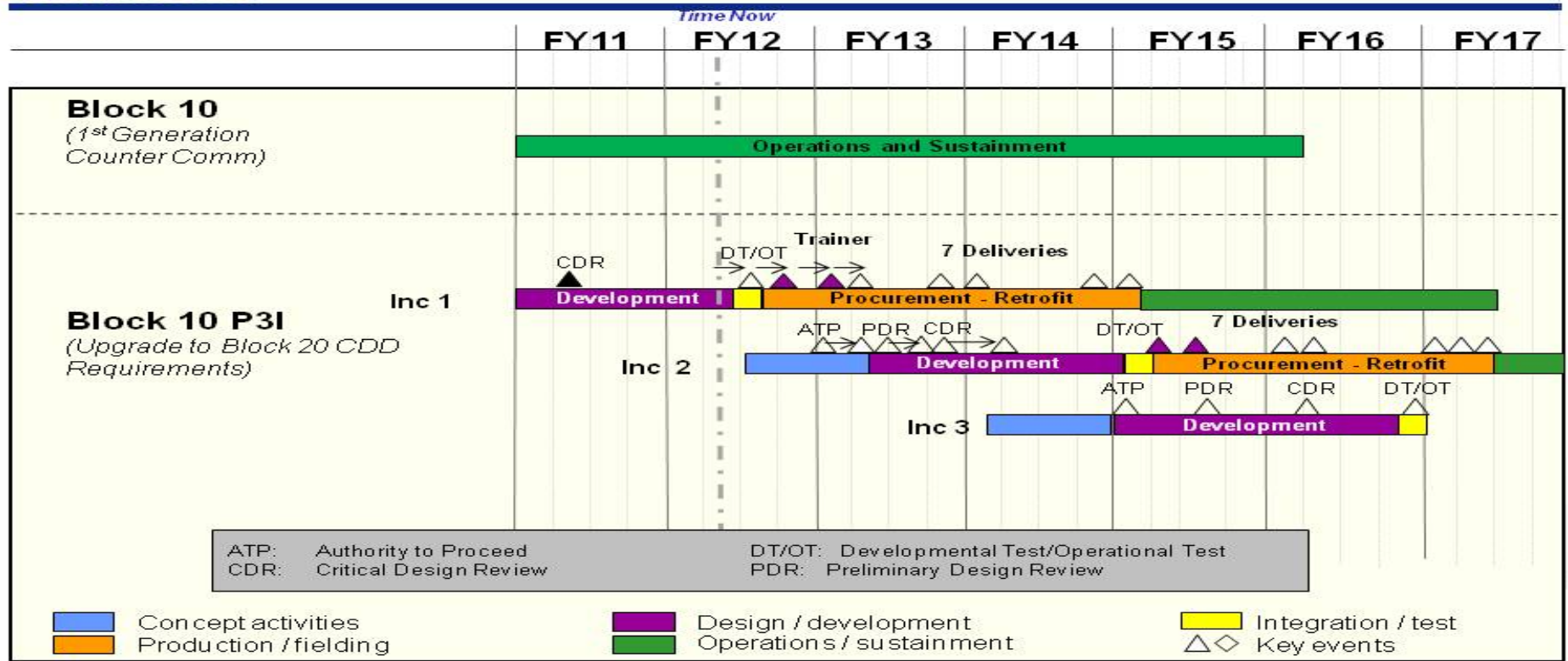
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE
 PE 0604421F: Counterspace Systems

PROJECT
 65A001: Counter Satellite Communications System



Counterspace Systems CCS 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604421F: <i>Counterspace Systems</i>	PROJECT 65A001: <i>Counter Satellite Communications System</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Block 10 P3I Increment 1 Critical Design Review	2	2011	2	2011
Block 10 P3I Increment 1 Developmental Test/Operational Test (DT/OT)	2	2012	3	2012
Block 10 P3I Increment 1 Procurement - Retrofit	3	2012	1	2015
Block 10 P3I Increment 1 Deliveries	3	2012	1	2015
Block 10 P3I Increment 2 Contract Award	2	2013	2	2013
Block 10 P3I Increment 2 Development	2	2013	4	2014
Block 10 P3I Increment 2 DT/OT	1	2015	2	2015
Block 10 P3I Increment 2 Procurement - Retrofit	2	2015	2	2017
Block 10 P3I Increment 2 Deliveries	2	2015	2	2017
Block 10 P3I Increment 3 Contract Award	1	2015	1	2015
Block 10 P3I Increment 3 Development	1	2015	3	2016
Block 10 P3I Increment 3 DT/OT	4	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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604421F: <i>Counterspace Systems</i>				PROJECT 65A003: <i>Rapid Identification Detection and Reporting System (RAIDRS)</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
65A003: <i>Rapid Identification Detection and Reporting System (RAIDRS)</i>	11.044	5.016	4.877	-	4.877	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The RAIDRS program performs attack detection, geolocation, reporting, characterization and mission impact assessment for US owned, operated or used space systems. RAIDRS capabilities support the National Security Strategy of the United States. RAIDRS is focused on detecting, characterizing, geolocating and reporting satellite communications (SATCOM) radio frequency interference (RFI) using currently existing Commercial-Off-the-Shelf (COTS) and Government-Off-the-Shelf (GOTS) technology. The event information provided by RAIDRS will allow operators to identify possible interference against space capabilities and enable rapid employment of protective responses. This program is in Budget Activity 5, System Development and Demonstration, because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements in preparation for deployment.

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

	FY 2011	FY 2012	FY 2013
Title: RAIDRS	11.044	5.016	4.877
Description: Develop, integrate, test and field the Rapid Attack Identification Detection and Reporting System (RAIDRS). RAIDRS is a counterspace system designed to identify, characterize and locate interference to SATCOM communications capabilities. Includes architecture development, systems engineering, site activation and program office support and test support.			
FY 2011 Accomplishments: Completed system development and integration. Developed Type 1 training and prepared for Operational Test and Evaluation (OT&E).			
FY 2012 Plans: Continue acceptance testing and Training system development. Will complete Operational Test & Evaluation (OT&E) and deliver the Full Operational Capability (FOC) Trainer.			
FY 2013 Plans: Complete Full Operational Capability trainer acceptance testing.			
Accomplishments/Planned Programs Subtotals	11.044	5.016	4.877

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604421F: <i>Counterspace Systems</i>	PROJECT 65A003: <i>Rapid Identification Detection and Reporting System (RAIDRS)</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>
• P-48: <i>OPAF, PE 0604421F</i> <i>Counterspace Systems</i>	18.739	9.433	6.055	0.000	6.055	0.000	0.000	0.000	0.000	0.000	33.459

D. Acquisition Strategy

All contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible.

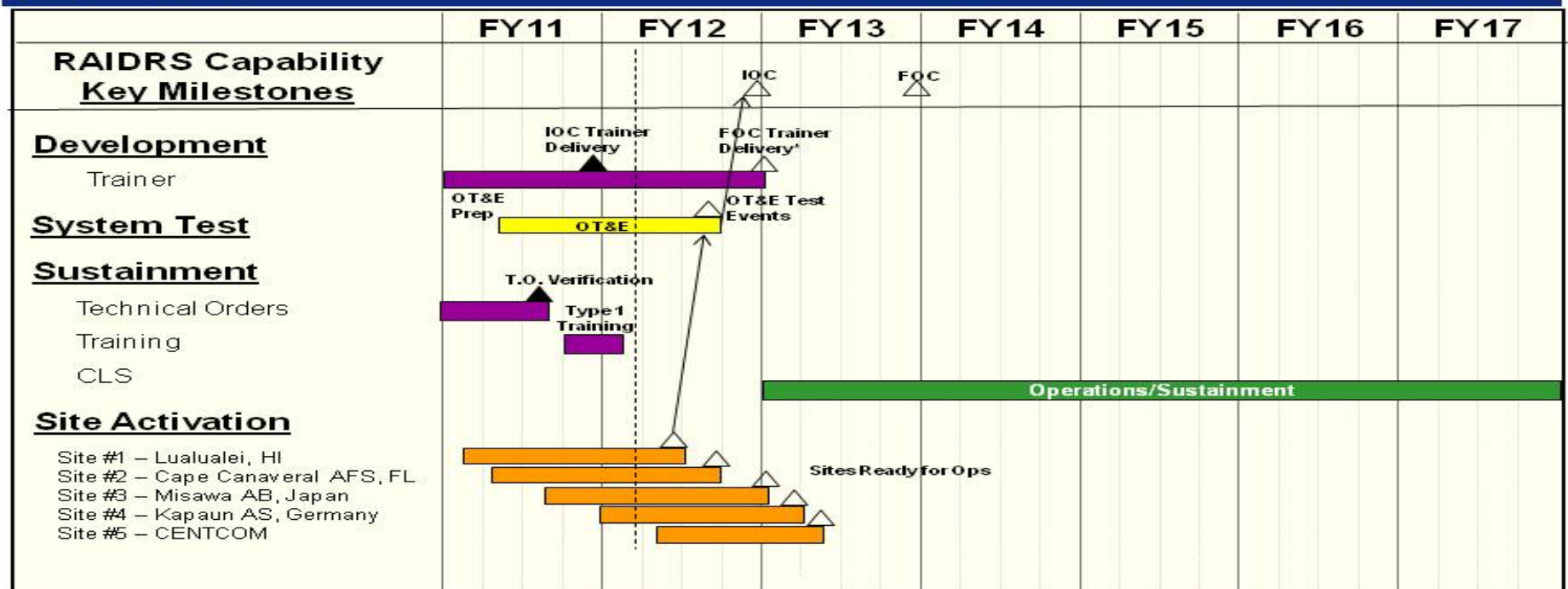
E. Performance Metrics

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

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 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604421F: Counterspace Systems	PROJECT 65A003: Rapid Identification Detection and Reporting System (RAIDRS)



Counterspace Systems RAIDRS Schedule



■ Concept activities
■ Production / fielding
■ Design / development
■ Operations / sustainment
■ Integration / test
△◇ Key events
 DT- Development Test
 IOC – Initial Operational Capability
 OT&E – Operational Test & Evaluation
 FOC – Full Operational Capability
 * FOC Trainer not on contract

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604421F: <i>Counterspace Systems</i>	PROJECT 65A003: <i>Rapid Identification Detection and Reporting System (RAIDRS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
RAIDRS IOC	4	2012	4	2012
RAIDRS FOC	4	2013	4	2013
RAIDRS Operational Test and Evaluation Prep and Test	2	2011	3	2012
RAIDRS Tech Order Verification	3	2011	3	2011
RAIDRS Operator Training	4	2011	1	2012
Site #1 Activation	1	2011	2	2012
Site #2 Activation	2	2011	3	2012
Site #3 Activation	3	2011	1	2013
Site #4 Activation	4	2011	1	2013
Site #5 Activation	2	2012	2	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604421F: <i>Counterspace Systems</i>	PROJECT 65A005: <i>Offensive Counterspace (OCS) C2</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
65A005: <i>Offensive Counterspace (OCS) C2</i>	6.905	7.434	7.558	-	7.558	7.653	7.814	9.948	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This effort supports the development of command and control and mission planning capabilities in support of the fielding and employment of Counterspace Systems. It provides for the integration and development of collaborative tools to link deployable counterspace systems with Joint Warfighting C2 systems and to enable integrated planning and execution of the counterspace mission. Developed capabilities will be integrated into current and future command and control systems. This program will leverage the Joint Execution and Tasking System for Space (JETSS) effort in the development of C2 for future space control and counterspace mission capabilities. This program is in Budget Activity 5, System Development and Demonstration, because it supports the engineering and manufacturing development of counterspace and space control systems.

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

	FY 2011	FY 2012	FY 2013
Title: Joint Execution and Tasking System for Space (JETSS)	6.905	7.434	7.558
Description: Develop a Counterspace mission planning and command and control capability to support counterspace systems space control warfighter activities.			
FY 2011 Accomplishments: Completed JETSS Spiral 3 Data Wizard development, testing and delivery to the Joint Space Operations Center (JSPOC).			
FY 2012 Plans: Complete development of JETSS Spiral 3 Future System Planning, Deployment Planner, Federated Query and Continuity of Operations (COOP) Development and deployment to the Joint Space Operations Center.			
FY 2013 Plans: Continue JETSS development with Spiral 4 future system planning development and deployment to the JSPOC.			
Accomplishments/Planned Programs Subtotals	6.905	7.434	7.558

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

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604421F: <i>Counterspace Systems</i>	PROJECT 65A005: <i>Offensive Counterspace (OCS) C2</i>

D. Acquisition Strategy

All contracts will be awarded using competitive procedures to the maximum extent possible to acquire next generation capabilities through incremental acquisitions.

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.

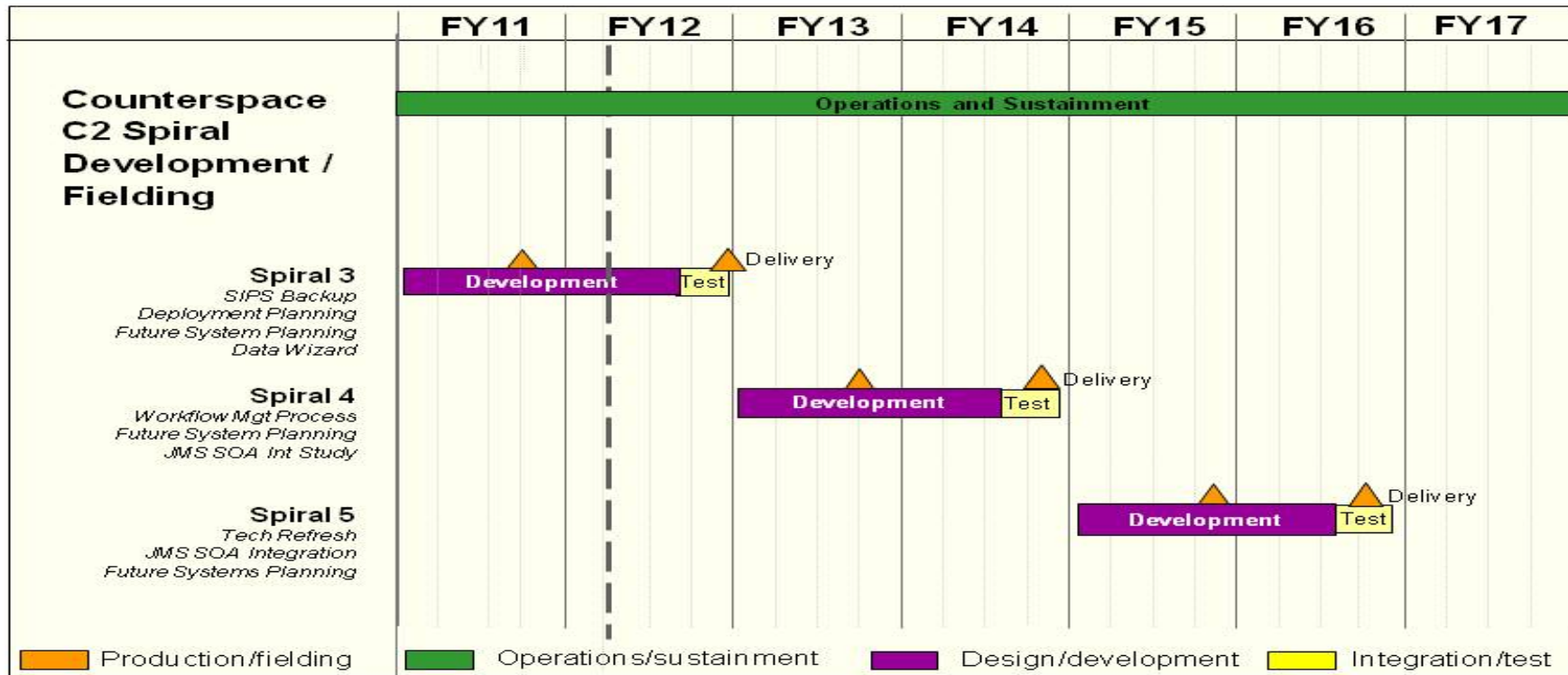
APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE
 PE 0604421F: Counterspace Systems

PROJECT
 65A005: Offensive Counterspace (OCS) C2



Counterspace C2 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604421F: <i>Counterspace Systems</i>	PROJECT 65A005: <i>Offensive Counterspace (OCS) C2</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
C2 Spiral #3 Development	1	2011	3	2012
C2 Spiral #3 Test	3	2012	4	2012
C2 Spiral #3 Delivery	4	2012	4	2012
C2 Spiral #4 Development	1	2013	3	2014
C2 Spiral #4 Test	3	2014	4	2014
C2 Spiral #4 Delivery	4	2014	4	2014
C2 Spiral #5 Development	1	2015	3	2016
C2 Spiral #5 Test	3	2016	4	2016
C2 Spiral #5 Delivery	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness 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	318.652	238.261	267.252	-	267.252	340.905	260.973	119.260	151.980	Continuing	Continuing
65A006: <i>Space Based Space Surveillance</i>	117.800	-	2.071	-	2.071	8.000	60.300	119.260	151.980	Continuing	Continuing
65A009: <i>Space Fence</i>	143.931	215.448	252.578	-	252.578	320.887	193.449	-	-	Continuing	Continuing
65A012: <i>Net-centric Sensors and Data Sources</i>	26.666	9.859	12.603	-	12.603	12.018	7.224	-	-	Continuing	Continuing
65A037: <i>Space Surveillance Telescope</i>	1.799	-	-	-	-	-	-	-	-	Continuing	Continuing
65A038: <i>SSA Environmental Monitoring</i>	28.456	12.954	-	-	-	-	-	-	-	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

Space Situational Awareness (SSA) is knowledge of all aspects of space related to operations. As the foundation for space control, SSA encompasses intelligence on adversary space operations; surveillance of all space objects and activities; detailed reconnaissance of specific space assets; monitoring space environmental conditions; monitoring cooperative space assets; and conducting integrated command, control, communications, processing, analysis, dissemination, and archiving activities. This program element develops new Air Force sensors, and improved information capabilities for integration across the SSA network; it also includes developmental planning and technology forecasting for future blocks and emerging needs.

A companion program element, 0305940F, Space Situational Awareness Operations, fields, upgrades, operates, and sustains existing sensors and information integration capabilities within the SSA network. An additional companion program element, 0305614F, JSpOC Mission System, processes surveillance of all space objects and activities, maintains detailed reconnaissance of space assets, fuses space data, maintains awareness of cooperative space assets, and allows JFCC-Space to conduct integrated C2 of space forces.

Development activities are necessary to deploy new advanced sensors capable of finding, fixing, tracking, and reconnoitering the expanding number of debris objects on orbit as well as the increasing number of satellites launched by other nations, of which many are smaller and more capable than previous spacecraft. These activities are also required to better integrate the disparate elements of SSA in order to enable rapid, responsive space operations.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>
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The efforts in PE 0604425 are in Budget Activity 5, System Development and Demonstration, because they are conducting development tasks aimed at meeting validated requirements prior to full-rate production.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	426.525	273.689	283.776	-	283.776
Current President's Budget	318.652	238.261	267.252	-	267.252
Total Adjustments	-107.873	-35.428	-16.524	-	-16.524
• Congressional General Reductions	-	-2.828			
• Congressional Directed Reductions	-	-32.600			
• Congressional Rescissions	-18.000	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.528	-			
• SBIR/STTR Transfer	-8.010	-			
• Other Adjustments	-79.335	-	-16.524	-	-16.524

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

Project: 65A012: *Net-centric Sensors and Data Sources*

Congressional Add: *ENTERPRISE SENSING PROTOTYPE (ESP) III*

Congressional Add Subtotals for Project: 65A012

Congressional Add Totals for all Projects

	FY 2011	FY 2012
	3.963	-
	3.963	-
	3.963	-

Change Summary Explanation

FY11: -\$18M for congressional rescission applied to SSA Environmental Monitoring

FY11: -\$2.528M reprogramming due to higher Department priorities

FY11: -\$8.010M SBIR

FY11: -\$45.1M congressional directed reduction to SBSS Follow-on

FY11: -\$35M congressional directed reduction to Space Fence

FY11: +\$4M congressional add

FY11: -\$3.235M Congressional General Reductions

FY12: -\$20M Congressional Directed Reduction for Space Fence

FY12: -\$12.6M Congressional Directed Reduction for SBSS

FY12: -\$2.828M for Congressional General Reduction

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>
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FY13: -\$14.337M termination of SSAEM program
FY13: -\$2.187M reallocation of funding to higher Department 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A006: <i>Space Based Space Surveillance</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
65A006: <i>Space Based Space Surveillance</i>	117.800	-	2.071	-	2.071	8.000	60.300	119.260	151.980	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Building upon the success of the Space-Based Visible (SBV) technology demonstration, which proved the utility of surveilling orbiting objects from space, the Space-Based Space Surveillance (SBSS) Block 10 satellite (launched on 25 September 2010) provides the capability to search, detect, and track objects primarily in deep space. It accomplishes this via collecting and processing space object identification and satellite metric data, then communicating it to command and control nodes. Surveillance from space augments existing ground sensors with timely 24-hour, all-weather, all-geography object search capabilities. In conjunction with information from other Space Situational Awareness (SSA) network sensors, SBSS data enables more timely detection and tracking of space objects, particularly those in deep space. The SBSS Follow-On program will enable space-based SSA after the mean mission life of the Block 10 system.

The efforts for this project are in Budget Activity 5, System Development and Demonstration, because they are conducting development tasks aimed at meeting validated requirements prior to full-rate production.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: SBSS Block 10 Description: Block 10 design, development, and risk reduction FY 2011 Accomplishments: Block 10 data processing and delivery improvements, ground segment hardware improvements, and trainer development	28.810	-	-	-	-
Title: SBSS Block 10 ops Description: Block 10 contractor ops and interim contractor support FY 2011 Accomplishments: Supported Block 10 launch ops and complete Initial Operational Test & Evaluation (IOT&E)	34.582	-	-	-	-
Title: SSA Risk Reduction & Technology Transfer Description: Technical research, studies, and analyses	30.404	-	-	-	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A006: <i>Space Based Space Surveillance</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<i>FY 2011 Accomplishments:</i> Technical research, studies, and analyses for future space-based space situational awareness (SSA) sensor technology, risk reduction, and architecture modeling and prototyping					
<i>Title:</i> Program Office Operations <i>Description:</i> Program Management Support	24.004	-	2.071	-	2.071
<i>FY 2011 Accomplishments:</i> Program office and related support activities, such as technical studies and analysis, systems engineering and integration					
<i>FY 2013 Base Plans:</i> Initiating pre-solicitation and market research activities in preparation for first acquisition milestone for SBSS Follow-on					
Accomplishments/Planned Programs Subtotals	117.800	-	2.071	-	2.071

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	0.000	0.000

D. Acquisition Strategy
Block 10 is a satellite-based capability, successfully launched in Sept 2010 that replaced the SBV sensor with a capability significantly improving the timeliness of data on objects in deep space. Completed IOT&E 3QFY11.

SBSS Follow-on acquisition strategy plans for a Fixed Price competitively awarded contract meeting or exceeding SBSS Block 10 requirements

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

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A006: <i>Space Based Space Surveillance</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
Block 10 design and development	C/CPAF	Northrop Grumman:Redondo Beach, CA	549.291	-		-		-		-	0.000	549.291	0.000
Block 10 Technical risk reduction, mission planning & mission data processing	SS/CPFF	MIT Lincoln Laboratory:Lexington, MA	29.271	-		-		-		-	0.000	29.271	0.000
Block 10 Launch vehicle integration	MIPR	Space and Missile Systems Center Det.:Kirtland AFB, NM	85.644	-		-		-		-	0.000	85.644	0.000
Block 10 contractor ops & Interim Contract Support	SS/CPAF	Boeing:Huntington Beach, CA	152.223	-		-		-		-	0.000	152.223	0.000
SBSS Follow-on Design & Development	Various	Various:Various	8.430	-		-		-		-	Continuing	Continuing	0.000
SSA risk reduction and technology transfer	Various	Various:Various,	33.247	-		-		-		-	0.000	33.247	0.000
Subtotal			858.106	-		-		-		-			0.000

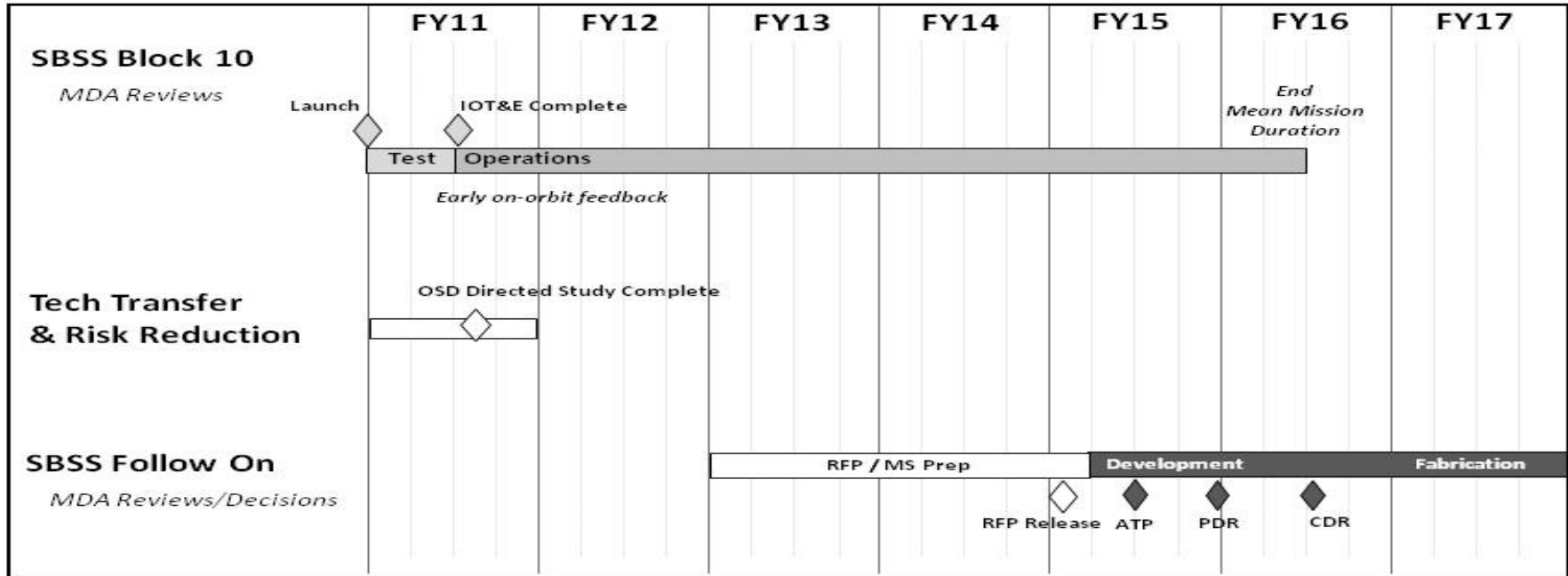
Remarks

*The FY11 cost for SSA risk reduction and technology transfer should reflect a total of \$35.612, but due to an accounting system error, the additional \$5.208M of funding is currently reflected in the Space Fence BPAC RDOC - Program Office Support line. A total of \$123.007M of FY11 funds will be executed against SBSS.

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 Office Support, FFRDC	SS/CPFF	Aerospace:Los Angeles, CA	43.773	-		0.977	Oct 2012	-		0.977	Continuing	Continuing	0.000
Engineering and Technical Services	C/FFP	AT&T Government Solutions, Inc:Los Angeles, CA	21.309	-		0.708	Dec 2012	-		0.708	Continuing	Continuing	0.000
Other Support Activities	Various	Various:Los Angeles, CA	30.708	-		0.265	Oct 2012	-		0.265	Continuing	Continuing	0.000
Subtotal			95.790	-		1.950		-		1.950			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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A006: <i>Space Based Space Surveillance</i>



- Concept activities
- Production / fielding
- Design / development
- Operations / sustainment
- Integration / test
- 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A006: <i>Space Based Space Surveillance</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Block 10 IOT&E Complete	3	2011	3	2011
Follow-on RFP Release	1	2015	1	2015
Follow-on Authority to Proceed	2	2015	2	2015
Follow-on PDR	4	2015	4	2015
Follow-on CDR	3	2016	3	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A009: <i>Space Fence</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
65A009: <i>Space Fence</i>	143.931	215.448	252.578	-	252.578	320.887	193.449	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Space Fence effort will develop a system of ground-based sensors to replace and improve upon the aging Air Force Space Surveillance System (AFSSS), a Very High Frequency radar operational since 1961. The Space Fence will provide timely detection of smaller orbiting objects, primarily those in low-earth orbit (LEO) by using co-located higher frequency radar transmitters and receivers at globally dispersed sites. As a result, it will greatly expand the uncued detection and tracking capacity of the Space Surveillance Network, from around 20,000 to up to 100,000 objects, while working in concert with other network sensors.

The efforts for this project are in Budget Activity 5, System Development and Demonstration, because they are conducting development tasks aimed at meeting validated requirements prior to full-rate production.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Space Fence	143.931	215.448	252.578	-	252.578
<p>Description: Space Fence contractors will complete their Phase A prototyping activities and the program will conduct a Preliminary Design Review. The Air Force will then proceed through acquisition Milestone B activities in order to release an RFP for the final system production and development contract to be awarded in the fourth quarter of FY12.</p> <p>FY 2011 Accomplishments: Space Fence completed Milestone A Acquisition Decision Memorandum criteria and awarded contracts to two contractors, Lockheed Martin and Raytheon, to continue radar development and prototyping activities; including Preliminary hardware/software (HW/SW) Design Reviews, site surveys and developmental risk reduction activities.</p> <p>FY 2012 Plans: The two contractors will complete a Preliminary Design Review and risk reduction activities, including a 60% facilities design and end-to-end prototype demonstration of design approaches.</p>					

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A009: <i>Space Fence</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Space Fence will seek Milestone Decision Authority (MDA) approval to release RFP for final Development, Production and Fielding contract and enter into source selection. The program will continue efforts toward satisfying Milestone B decision criteria and will seek an award decision. <i>FY 2013 Base Plans:</i> Program will conduct Engineering and Manufacturing Development Phase activities in support of Integrated System Design culminating in Critical Design Review followed by the exercising of options to construct and build the first site radar. Program Office and FFRDCs will perform design evaluation and management activities. <i>FY 2013 OCO Plans:</i> N/A					
Accomplishments/Planned Programs Subtotals	143.931	215.448	252.578	-	252.578

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

The Air Force competitively awarded requirements definition contracts in FY 2006 and subsequently awarded three Phase A System Design Review (SDR) contracts in June 2009 to Lockheed Martin, Northrop Grumman, and Raytheon. In February 2010, Northrop Grumman was terminated due to insufficient program funding as a result of a \$30M FY10 Congressional reduction. SDR concluded on 10 December 2010.

A full and open competition occurred in FY11 that awarded contracts for development through Preliminary Design Review (PDR) to Lockheed Martin and Raytheon. Milestone B and a final full and open competition are planned following PDR to award a production and deployment contract through Critical Design Review (CDR) with follow on options to complete the build. Initial Operational Capability (IOC) will consist of the first radar site and successful operations at a to be determined Command and Control center location.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A009: <i>Space Fence</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
Design and development (Lockheed Martin)	C/FFP	Lockheed Martin:Moorestown, NJ	30.000	-		-		-		-	0.000	30.000	30.000
Design and development (Northrop Grumman)	C/FFP	Northrop Grumman:Linthicum Heights, MD	15.922	-		-		-		-	0.000	15.922	15.922
Design and development (Raytheon)	C/FFP	Raytheon:Sudbury, MA	29.999	-		-		-		-	0.000	29.999	30.000
System design and prototyping (Lockheed Martin)	C/FFP	Lockheed Martin:Moorestown, NJ	62.567	44.433	Oct 2011	-		-		-	0.000	107.000	107.000
System design and prototyping (Raytheon)	C/FFP	Raytheon:Sudbury, MA	63.266	43.734	Oct 2011	-		-		-	0.000	107.000	107.000
System development	C/TBD	TBD:TBD,	-	112.210	Jul 2012	243.743	Oct 2012	-		243.743	496.400	852.353	496.400
Subtotal			201.754	200.377		243.743		-		243.743	496.400	1,142.274	786.322

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
Various	Various	ESC:Various,	19.916	3.623	Nov 2011	-		-		-	0.000	23.539	0.000
Design Oversight and Management (Lincoln Lab)	SS/TBD	MIT Lincoln Laboratory:Lexington, MA	10.825	3.300	Oct 2011	1.277	Oct 2012	-		1.277	2.500	17.902	2.500
Design Oversight and Management (Mitre)	SS/TBD	Mitre Corp.:Bedford, MA	10.066	3.598	Oct 2011	-		-		-	0.000	13.664	0.000
Program Office Support, Technical Studies and Analysis, Systems Engineering and Integration Management	Various	Electronic Systems Center:Various,	5.114	0.650	Nov 2011	-		-		-	0.000	5.764	0.000
Development review and Management (Odyssey)	C/TBD	Odyssey Systems:Wakefield, MA	5.364	1.900	Feb 2012	-		-		-	0.000	7.264	0.000

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A009: <i>Space Fence</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
Development review and Management (Jacobs)	C/TBD	Jacobs Technology:Tullehoma, TN	6.951	2.000	Jan 2012	-		-		-	0.000	8.951	0.000
Subtotal			58.236	15.071		1.277		-		1.277	2.500	77.084	2.500

Remarks
*The FY11 cost for various support services should be \$1.169M; but due to an accounting system error, an additional \$5.208M that should be reflected in the SBSS BPAC RDOC in the risk reduction and technology transfer section is reflected here within the \$6.377M shown here. A total of \$138.724M will be executed against Space Fence in FY11.

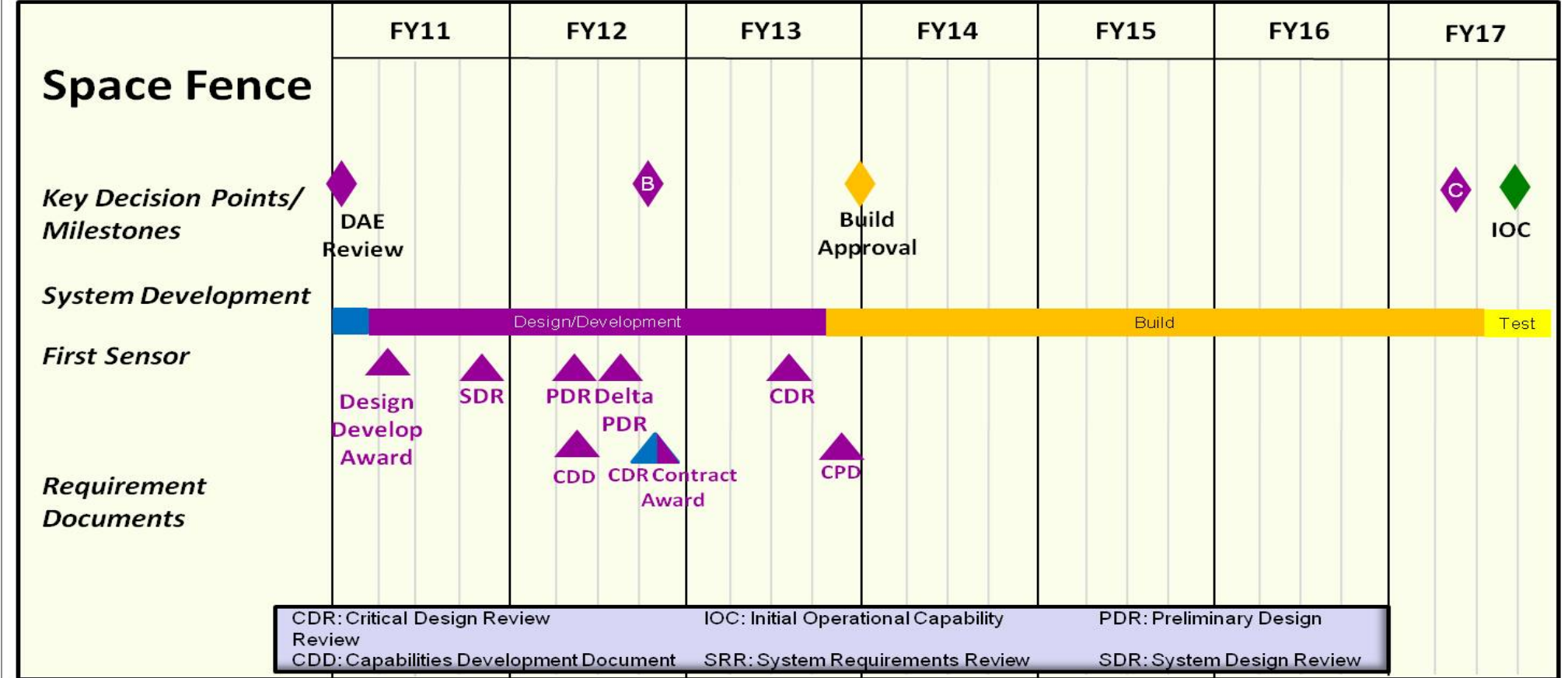
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	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
Various	Various	ESC:Various,	-	-		2.898	Oct 2012	-		2.898	5.836	8.734	5.836
Design Oversight and Management (Lincoln Lab)	SS/TBD	MIT Lincoln Laboratory:Lexington, MA	-	-		0.250	Oct 2012	-		0.250	0.500	0.750	0.500
Design Oversight and Management (Mitre)	SS/TBD	Mitre Corp.:Bedford, MA	-	-		1.476	Oct 2012	-		1.476	3.100	4.576	3.100
Program Office Support, Technical Studies and Analysis, Systems Engineering and Integration Management	Various	Electronic Systems Center:Various,	-	-		0.650	Nov 2012	-		0.650	1.700	2.350	1.700
Development review and Management (Odyssey)	C/TBD	Odyssey Systems:Wakefield, MA	-	-		1.142	Feb 2013	-		1.142	2.100	3.242	2.100

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A009: <i>Space Fence</i>
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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A009: <i>Space Fence</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Design Development Award	2	2011	2	2011
Capabilities Development Document	2	2012	2	2012
Preliminary Design Review	2	2012	2	2012
Milestone B	4	2012	4	2012
Contract Award	4	2012	4	2012
Complete Design Review (CDR)	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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>				PROJECT 65A012: <i>Net-centric Sensors and Data Sources</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
65A012: <i>Net-centric Sensors and Data Sources</i>	26.666	9.859	12.603	-	12.603	12.018	7.224	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Net-centric Sensors and Data Sources efforts migrate the space surveillance network, non-traditional SSA sensors and data sources for use by any entity (primarily the JSpOC) into a net-centric enterprise, enabling more rapid distribution of data to the warfighter based on an AFSPC provided prioritization list. This effort will define and implement the technical architecture, and support the concept to provide the foundational data necessary to enable rapid, responsive decisions by the Commander, US Strategic Command's Joint Functional Component Commander for Space and other national capability users to detect, evaluate, attribute space events. This effort builds upon and operationalizes the successful Extended Space Sensor Architecture Advanced Concept Technology Demonstration (ESSA ACTD) and prototypes how disparate and legacy space sensor network data can be translated into a net-centric operating environment. Data will be exposed as defined by published DoD and community interface standards to ensure technical interoperability.

These efforts are in Budget Activity 5, System Development & Demonstration, because they develop and demonstrate validated requirements for better integration of SSA data.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: SENSOR & DATA INTEGRATION & EXPOSURE	17.692	7.907	10.190	-	10.190
Description: Providing Data Exposure and Data Source Integration Net-Centrically for consumption and use by the JSpOC and other users					
FY 2011 Accomplishments: Accomplishments: Conducted research and analysis for sensor data source roadmapping; continuation of traditional/non-traditional SSA sensors as well as the following data sources: Space Awareness & Global Exploitation (SAGE), Mission Critical Reporting System (MCRS), and Modernized Integrated Database (MIDB). Also completed Blue Force Status Pilot. Completed non-traditional sensor, Transportable Radar Surveillance (TPY-2) 4QFY11					
FY 2012 Plans: FY12 Plans: Research and analysis for sensor data source roadmapping; continuation of traditional / non-traditional SSA sensor and data source exposure to include net-centrally exposing data from GEODSS/ Maui (traditional) with planned operational acceptance. Transition ESSA ACTD to operational configuration					

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A012: <i>Net-centric Sensors and Data Sources</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
development of the N-CSDS version sidecar to include design documentation, training artifacts, and logistics trail. Release standardized Common Data Model for use across N-CSDS and other SSA related programs. Complete Blue Force Status (BFS) on Wideband Gapfiller System (WGS) Operatioanl Test (OT). FY 2013 Base Plans: FY13 Base Plan: Research and analysis for sensor data source roadmapping; continuation of traditional/non-traditional SSA sensor and data source exposure to include net-centrally exposing data from Sea Based X-Band (non-traditional), Space Surveillance Telescope (SST) (traditional) and other data exposure (traditional) and sensors and data sources (non-traditional) in accordance with the AFSPC-prioritized Data Exposure Roadmap.					
Title: PROGRAM OFFICE SUPPORT Description: Program Office Support and related support activities FY 2011 Accomplishments: FY11 Accomplishments: Program office support and related activities such as, technical studies and analysis, systems engineering and integration, and advanced concept technology demonstrations (ACTDs) FY 2012 Plans: FY12 Plans: Program office support and related activities such as, technical studies and analysis, systems engineering and integration, and advanced concept technology demonstrations (ACTDs), including continuation of Blue Force Status effort on new systems. FY 2013 Base Plans: FY13 Base Plan: Program office support and related support activities such as technical studies and analysis, systems engineering and integration, and advanced concept technology demonstrations (ACTDs), including continuation of Blue Force Status effort on new systems.	5.011	1.952	2.413	-	2.413
Accomplishments/Planned Programs Subtotals	22.703	9.859	12.603	-	12.603
	FY 2011	FY 2012			
Congressional Add: ENTERPRISE SENSING PROTOTYPE (ESP) III FY 2011 Accomplishments: Congressional add to support Defense Micro-Electronics Agency (DMEA) execution of the Enterprise Sensing Prototype (ESP) for space situational awareness maturation.	3.963	-			
Congressional Adds Subtotals	3.963	-			

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A012: <i>Net-centric Sensors and Data Sources</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 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>
• P-47: <i>OPAF, SPACE MODS</i> <i>SPACE, PE 0604425F</i>	0.000	4.312	4.482	0.000	4.482	4.720	4.911	5.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Sensor and data sources activities utilize existing engineering and study contracts and a competitively selected system engineering team. Sensor integration focus is on supporting the migration of the space surveillance network sensors, non-traditional sensors and data sources to a net-centric architecture based on an AFSPC provided prioritization list. The systems engineering team will provide high-level technical oversight support and assist in the proper execution of data exposure.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A012: <i>Net-centric Sensors and Data Sources</i>
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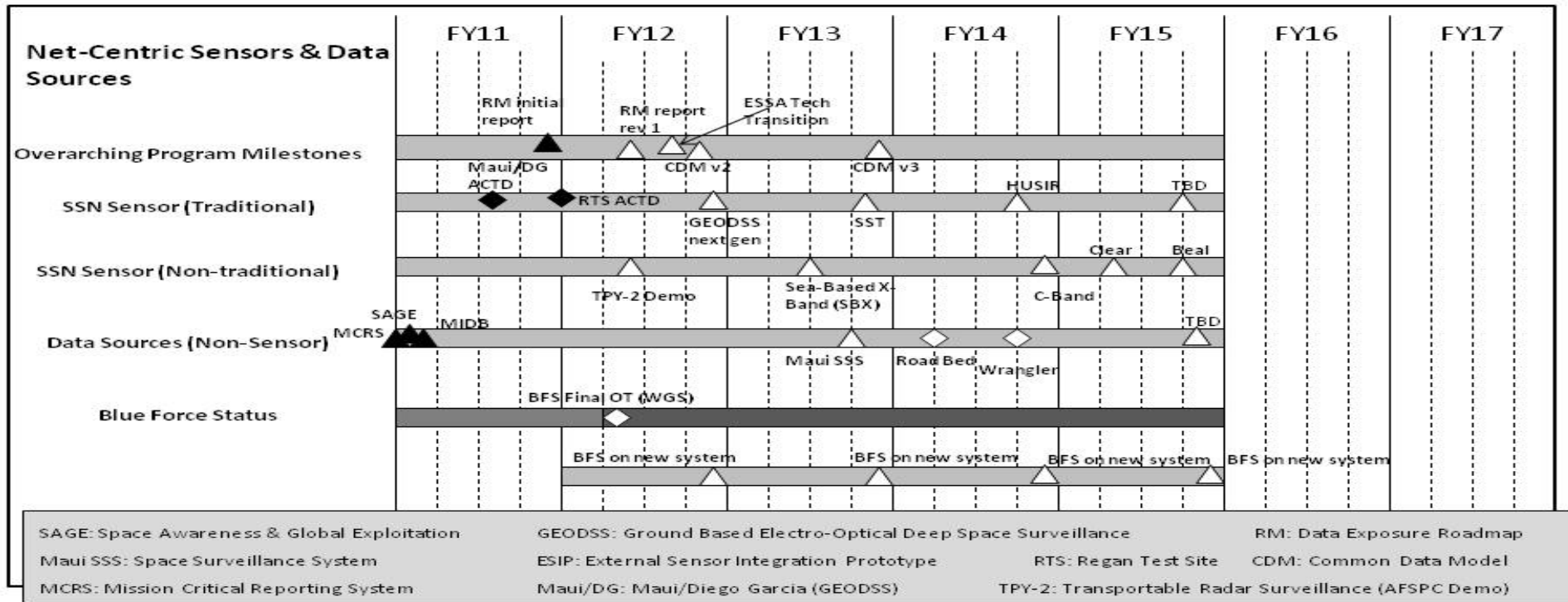
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Concept Definition Research and Analysis	Various	MIT/LL:Lexington, MA	6.300	1.500	Jan 2012	1.000	Jan 2013	-		1.000	1.500	10.300	10.300
Sensor & Data Source Exposure	Various	Various:Various,	14.573	1.697	Jan 2012	1.881	Jan 2013	-		1.881	4.305	22.456	22.428
Systems Engineering and Integration	C/CPFF	Lockheed Martin Integrated Systems:Endicott, NY	11.335	4.222	Jan 2012	6.809	Jan 2013	-		6.809	8.283	30.649	28.031
Enterprise Sensing Prototype	MIPR	Various:Various,	3.963	-		-		-		-	0.000	3.963	0.000
Subtotal			36.171	7.419		9.690		-		9.690	14.088	67.368	60.759

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
Management and Prof Support Services	Various	Various:Various,	0.847	0.425	Jan 2012	0.595		-		0.595	0.929	2.796	2.864
FFRDC	RO	Aerospace/MITRE:Los Angeles, CA	3.035	0.774	Jan 2012	0.918	Jan 2013	-		0.918	1.633	6.360	6.486
Engineering and Technical Support	C/FFP	AT&T:Los Angeles, CA	2.189	0.653	Jan 2012	0.774	Jan 2013	-		0.774	1.193	4.809	4.915
Subtotal			6.071	1.852		2.287		-		2.287	3.755	13.965	14.265

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 and Evaluation Activities	RO	46th Test Squadron:Eglin AFB, FL	0.500	0.486	Jan 2012	0.500	Jan 2013	-		0.500	1.000	2.486	2.486
Subtotal			0.500	0.486		0.500		-		0.500	1.000	2.486	2.486

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A012: <i>Net-centric Sensors and Data Sources</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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A012: <i>Net-centric Sensors and Data Sources</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ESSA Tech Transition	3	2011	3	2012
Common Data Model v2	2	2011	4	2012
GEODSS Next Gen (SSN Sensor - Traditional)	4	2011	4	2012
TPY2-Demo (SSN Sensor - Non-Traditional)	2	2011	2	2012
Blue Force Status Final OT	1	2011	2	2012
Sea-Based X-Band (SSN Sensor - Traditional)	2	2012	2	2013
Maui SSS (Data Source Non-Sensor)	3	2012	3	2013
Common Data Model v3	4	2012	4	2013
Space Surveillance Telescope (SSN Traditional Sensor)	4	2012	4	2013
Road Bed (Data Source Non-Sensor)	1	2013	1	2014
Wrangler (Data Source Non-Sensor)	3	2013	3	2014
C-Band (SSN Sensor - Non-Traditional)	4	2013	4	2014
HUSIR (SSN Sensor - Traditional)	3	2013	3	2014
Clear (SSN Sensor - Non-Traditional)	2	2014	2	2015
Beal (SSn Sensor - Non-Traditional)	4	2014	4	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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>				PROJECT 65A037: <i>Space Surveillance Telescope</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
65A037: <i>Space Surveillance Telescope</i>	1.799	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Space Surveillance Telescope (SST) prototype is a Defense Advanced Research Projects Agency (DARPA) program to develop an advanced ground-based optical system to enable detection and tracking of faint objects in deep space, while providing rapid, wide-area search capability. After demonstrating the successful application of state-of-the-art optical, curved charge couple device (CCD) and large telescope control technologies, DARPA and Air Force Space Command will conduct a Military Utility Assessment (MUA). This budget item funds the delivery, evaluation and completion of developmental technical data in order to establish a complete technical baseline of the as-built system, required to reproduce, operate, and support the system. The SST prototype will become a contributing Space Surveillance Network sensor during the MUA.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Space Surveillance Telescope	1.799	-	-	-	-
Description: Completes technical baseline of SST.					
FY 2011 Accomplishments: Began evaluation to deliver the developmental technical baseline in order to support the SST-Initial System during the DARPA/AFSPC Military Utility Assessment (MUA) and a potential follow-on acquisition.					
FY 2012 Plans: N/A					
FY 2013 Base Plans: N/A					
Accomplishments/Planned Programs Subtotals	1.799	-	-	-	-

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
• 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A037: <i>Space Surveillance Telescope</i>

D. Acquisition Strategy

This project transitions the SST system, located at White Sands Missile Range, Socorro, New Mexico, from DARPA to the Air Force. It will enable the Air Force to support the system and a potential follow-on acquisition by obtaining and completing technical baseline documentation available from DARPA's development effort and ~\$100M investment.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A037: <i>Space Surveillance Telescope</i>
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Product Development (\$ 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			
Space Surveillance Telescope Transition	TBD	MIT Lincoln Laboratory: Lexington, MA	1.799	-		-		-		-	0.000	1.799	0.000
Subtotal			1.799	-		-		-		-	0.000	1.799	0.000

Support (\$ 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			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

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			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

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			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

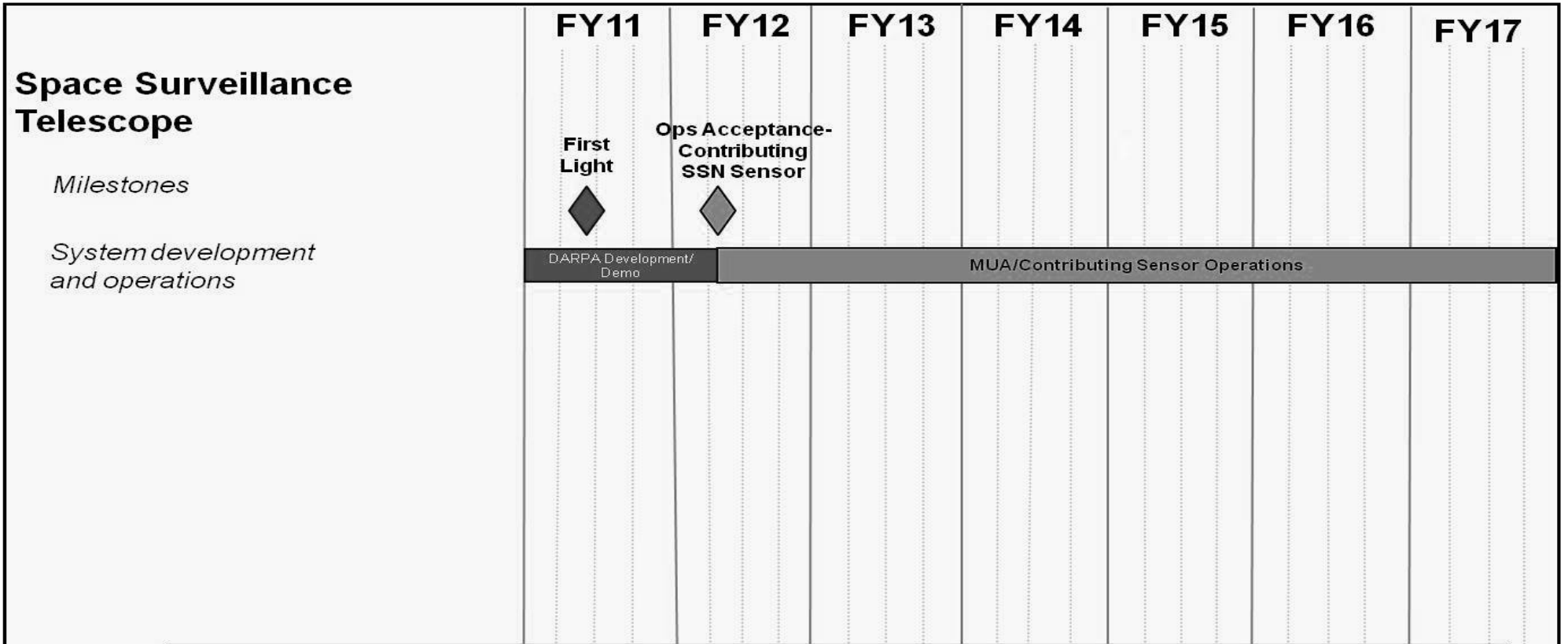
			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1.799	-		-		-		-	0.000	1.799	0.000

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A037: <i>Space Surveillance Telescope</i>
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SSN: Space Surveillance Network	MUA: Military Utility Assessment	IOC: Initial Operational Capability
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Design / development /DARPA Demo

Integration/Test/MUA



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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A037: <i>Space Surveillance Telescope</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Initiate Military Utility Assessment (MUA)	1	2012	4	2012
SSN Contributing Sensor Ops Acceptance	2	2012	2	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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>				PROJECT 65A038: <i>SSA Environmental Monitoring</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
65A038: <i>SSA Environmental Monitoring</i>	28.456	12.954	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

In FY13, the project 65A038, SSA Environmental Monitoring (SSAEM), was terminated. The sensors that have completed development will be available for rideshare on the Constellation Observing System for Meteorology Ionosphere and Climate (COSMIC-2) satellite system or other available host platform. Space Situational Awareness Environmental Monitoring (SSAEM) continues the key space environment measurements of the Defense Meteorological Satellite Program (DMSP) program de-manifested from the planned next generation weather program. These measurements contribute to the nation's space environment analysis and forecasting models that provide support to all aspects of SSA, offensive and defensive space control, GPS accuracy assurance, system anomaly resolution, attribution and responsive actions, and force protection from communication outages/degradation modulated by solar activity. SSAEM includes the fielding of a space-based sensing capability to gather space environment measurement data, developing and procuring sensors. SSAEM funds risk reduction efforts for space sensors by leveraging existing prototypes, operational systems and Joint/Advanced Concept Technology Demonstrations (JCTDs/ACTDs). SSAEM sensors will integrate into the overall SSA mission, comply with net-centricity requirements, and provide timely critical decision making data to the SSA battlespace management infrastructure.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: SSAEM	28.456	12.954	-	-	-
Description: Replenishing critical space weather sensing capability de-manifested from next generation weather program. Develops new on-orbit sensors that will detect ionospheric scintillation and predict effects.					
FY 2011 Accomplishments: Continued risk reduction efforts, and development of critical sensors. Funded program office and related support activities, such as Acquisition Planning, Technical Studies, Systems Engineering and Integration.					
FY 2012 Plans: Continues ongoing risk reduction efforts, development/production of critical sensors. Funds program office and related support activities, such as Acquisition Planning, Technical Studies, Systems Engineering and Integration.					
FY 2013 Base Plans: Program is terminated in FY13.					
Accomplishments/Planned Programs Subtotals	28.456	12.954	-	-	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A038: <i>SSA Environmental Monitoring</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

Studies have been conducted to determine the optimum strategy for acquiring space-based environmental data sources resulting in a decision to pursue a rideshare opportunity on the COSMIC 2 program to host SSAEM sensors. Existing sensors with high Technology Readiness Levels (TRL) will be leveraged and technology modernization of SSAEM sensors will be performed by Air Force Research Laboratory (AFRL). The operational SSAEM sensors will be acquired through competitive contract awards.

Current sensor development contract period of performance will continue through FY13 to deliver sensors in 4QFY13.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A038: <i>SSA Environmental Monitoring</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
Sensor, Spacecraft Launch Integration and the Communication/Navigation Outage Forecasting System (C/NOFS)	C/Various	Air Force Research Laboratory (AFRL)/Space Development and Test Directorate/Defense Weather Systems Directorate:Albuquerque, NM	25.356	8.000	Apr 2012	-		-		-	0.000	33.356	117.300
Subtotal			25.356	8.000		-		-		-	0.000	33.356	117.300

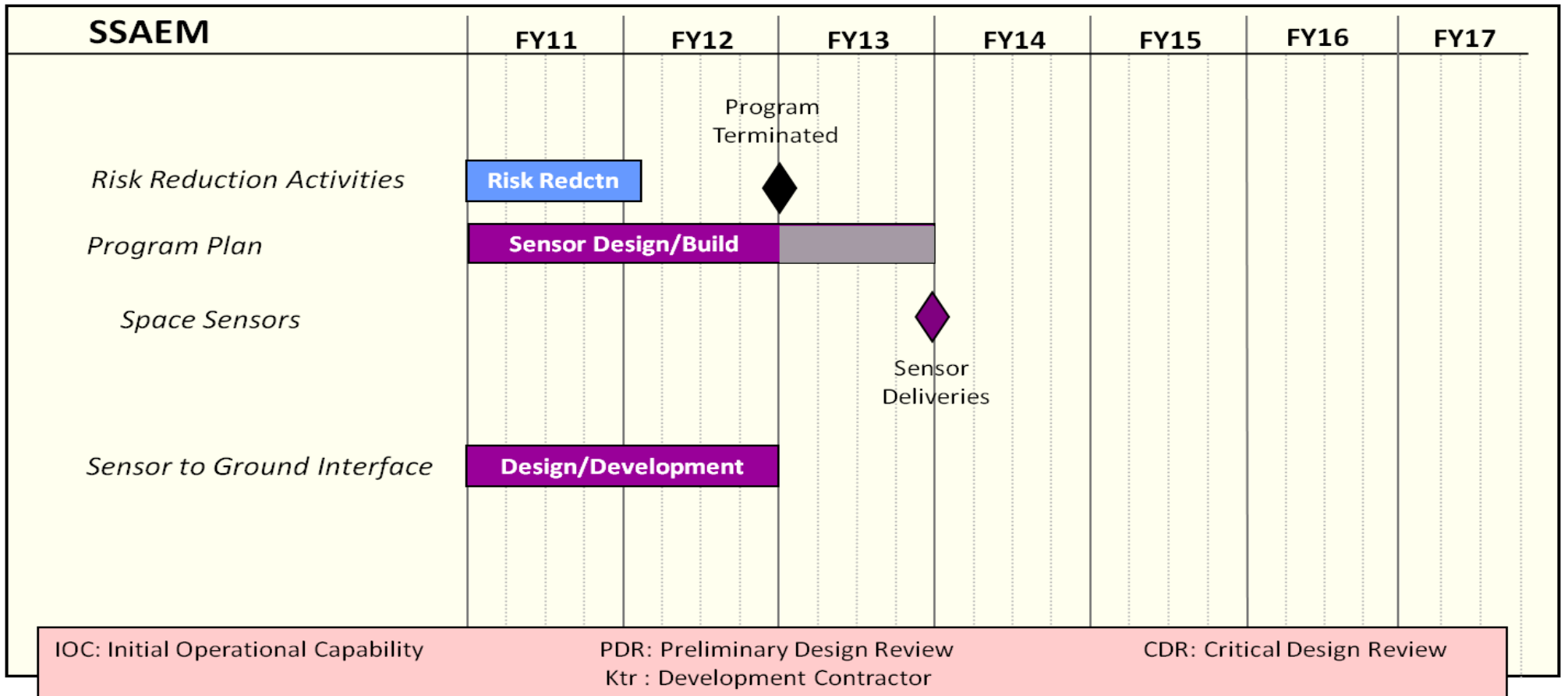
Remarks
Sensor development work is currently split between AFRL in Albuquerque, NM, the University of Texas at Dallas, SRI International in Menlo Park, CA, and ITT in North Amityville, NY. Includes C/NOFS funding for SSAEM risk reduction in FY10 and FY11.

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 Support	Various	Air Force Research Laboratory:Albuquerque, NM	4.000	1.600	Oct 2011	-		-		-	0.000	5.600	7.200
Subtotal			4.000	1.600		-		-		-	0.000	5.600	7.200

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
Systems Engineering & Mission Assurance	Various	Not specified.:Location not provided.	4.000	-		-		-		-	0.000	4.000	4.000
Subtotal			4.000	-		-		-		-	0.000	4.000	4.000

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A038: <i>SSA Environmental Monitoring</i>



- Risk Reduction Activities
- Design / development
- Integration/Test/Fielding/ On-Orbit Checkout
- Key events
- Operations and Sustainment

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situational Awareness Systems</i>	PROJECT 65A038: <i>SSA Environmental Monitoring</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Space Sensor Deliveries	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604429F: <i>AIRBORNE ELECTRONIC ATTACK</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	25.051	41.000	4.118	-	4.118	19.142	15.619	11.841	12.019	Continuing	Continuing
655192: <i>Network & Sys -of-Sys Dev</i>	9.335	11.258	4.118	-	4.118	19.142	15.619	11.841	12.019	Continuing	Continuing
655193: <i>Electronic Attack Pod</i>	15.716	29.742	-	-	-	-	-	-	-	Continuing	Continuing

Note

In FY13, Project 655193, Electronic Attack Pod, was terminated.

A. Mission Description and Budget Item Justification

This Program Element (PE) supports the development of the critical electronic attack capabilities, from technology demonstrations through transition to operational capability, for Air Force and joint operations to include the Global Strike and Persistent Global Attack Concepts of Operations (CONOPS). Based on the 2001 Joint Airborne Electronic Attack (AEA) Analysis of Alternatives (AoA) and the follow-on 2002 Joint Suppression of Enemy Air Defenses (Joint SEAD) presentation to OSD (AT&L), the AEA capability will consist of a number of components working together in a joint system of systems. The Joint SEAD presentation identified the Navy AEA components as the EA-6B Improved Capability (ICAP) III and EA-18G modified escort platforms and indicated the Air Force will be responsible for coordinating overall AEA system of systems requirements. AF component capabilities include the Miniature Air Launched Decoy (MALD) and its stand-in jammer variant called MALD-J, the EC-130H Compass Call Baseline 0 (formerly Block 35) configuration and Active Electronically Scanned Array (AESA) radar equipped aircraft, and potentially, recoverable unmanned stand-in and manned long range stand-off jammer platforms. Additionally, this program element supports the planning, development and demonstration of capabilities for use in Irregular Warfare against non-Integrated Air Defense System (IADS) targets. This includes targets such as communications networks, remote controlled improvised explosive devices, and man portable air defenses. It also supports examining alternatives to counter both IADS and non-IADS components such as communications networks, computers, command and control links, etc in both major combat and irregular warfare scenarios.

This program is included in budget activity 5, System Development and Demonstration, because of the development and/or testing associated with Airborne Electronic Attack.

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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 0604429F: <i>AIRBORNE ELECTRONIC ATTACK</i>
BA 5: <i>Development & Demonstration (SDD)</i>	

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	25.937	47.100	83.845	-	83.845
Current President's Budget	25.051	41.000	4.118	-	4.118
Total Adjustments	-0.886	-6.100	-79.727	-	-79.727
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-6.100			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.751	-			
• Other Adjustments	-0.135	-	-79.727	-	-79.727

Change Summary Explanation

FY2011 adjustments of -\$0.135M for economic assumptions.

FY2012 Congressional Directed Reductions of \$2.6M against Project 655192, Network and System of System Development; and \$3.5M against Project 655193, Electronic Attack Pod.

FY2013 adjustments for Electronic Attack Pod termination

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604429F: <i>AIRBORNE ELECTRONIC ATTACK</i>	PROJECT 655192: <i>Network & Sys -of-Sys Dev</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
655192: <i>Network & Sys -of-Sys Dev</i>	9.335	11.258	4.118	-	4.118	19.142	15.619	11.841	12.019	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project concentrates on the overall systems engineering, modeling and simulation, architecture and network requirements development, effectiveness assessment and requirements allocation to component systems of the Airborne Electronic Attack (AEA) System of Systems (SoS). It also includes establishment and use of virtual test capabilities for system of systems effectiveness testing/evaluation for AEA, studies and technology risk mitigation demonstrations for AEA SoS components and AEA SoS battle management, development planning, and the development and maintenance of the Air Force electronic warfare capability investment strategy. These efforts are crucial in the development of critical electronic attack capabilities in support of Air Force and joint operations to include Global Strike and Persistent Global Attack Concepts of Operations (CONOPS).

The joint AEA SoS includes the Navy EA-6B and EA-18G core components; the Air Force Miniature Air Launched Decoy (MALD) and its stand-in jammer variant, MALD-J; the EC-130H Compass Call Baseline 0 (formerly Block 35) configuration; Active Electronically Scanned Array (AESAs) radar equipped aircraft; potentially an unmanned recoverable stand-in jamming platform; potentially a manned low/mid frequency, high power component capable of location and reactive jamming suppression of enemy integrated air defense system (IADS) radars outside the ranges of the associated Surface-to-Air Missiles (SAMs) and non-IADS targets. Recent events have led to an increased focus on developing advanced electronic attack capabilities for use in irregular warfare against non-IADS targets such as communication networks, remote controlled improvised explosive devices and man portable air defenses. In addition, there is an increased focus on examining non-traditional electronic attack alternatives to counter both IADS and non-IADS components such as communication networks, computers, command and control links, etc. in both major combat and irregular warfare scenarios.

This program is included in budget activity 5, System Development and Demonstration, because of the development and/or testing associated with Airborne Electronic Attack.

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

	FY 2011	FY 2012	FY 2013
Title: System Engineering Studies & Technology Transition	8.115	10.345	3.368
Description: Apply systems engineering rigor to manage Air Force AEA program requirements, designs, and operational concepts.			
FY 2011 Accomplishments: Analyze contributions of multiple Airborne Electronic Attack Systems of Systems, components coupled with legacy and new development self-protection systems; update Air Force Electronic Warfare Roadmap and develop Implementation Plan for Air			

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604429F: <i>AIRBORNE ELECTRONIC ATTACK</i>	PROJECT 655192: <i>Network & Sys -of-Sys Dev</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Force Electronic Warfare Vision 2030 as directed by Headquarters Air Force; update the Air Force Electronic Warfare Capability Investment Strategy with studies approved by the sponsoring MAJCOMS in support of Air Force Electronic Warfare Roadmap initiatives. \$3.5M realigned from Project 655193, Electronic Attack Pod to support a counter-communications Joint Urgent Operational Need (JUON).</p> <p>FY 2012 Plans: Analyze contributions of multiple Airborne Electronic Attack Systems of Systems components to both Integrated Air Defense System (IADS) and non-IADS scenarios for both major warfare and irregular warfare; examine non-traditional electronic attack alternatives to remotely defeat networks, computers, etc.; assist MAJCOMs in incorporating EV 2030 goals and objectives into AF Core Function Master Plans as directed by HQ AF; update AF EW Capability Investment Strategy with studies approved by sponsoring MAJCOMs in support of AF Core Function Master Plans.</p> <p>FY 2013 Plans: Assess potential contributions of emerging AEA SoS components to both IADS and non-IADS scenarios for both major warfare and irregular warfare; update AF EW Roadmap as directed by HQ AF; update AF EW Capability Investment Strategy with studies in support of AF Core Function Master Plans.</p>				
<p>Title: Capability Planning</p> <p>Description: Provide capability planning to the Air Force electronic Warfare portfolio and constructive modeling and simulation and analysis management.</p> <p>FY 2011 Accomplishments: Conduct additional Airborne Electronic Attack System of System simulations to assess effectiveness of newly emerging/upgraded systems (EA-18G, MALD-J, EC-130H upgrades, Communications Electronic Attack Pod, etc.) operating together in stressing Integrated Air Defense System (IADS) environments and Irregular Warfare/non-IADS environments.</p> <p>FY 2012 Plans: Conduct additional Airborne Electronic Attack System of System simulations to assess effectiveness of newly emerging/upgraded systems (EA-18G, MALD-J, EC-130H upgrades, non-traditional network countermeasures, etc.) operating together in stressing Integrated Air Defense System (IADS) environments and Irregular Warfare/non-IADS environments.</p> <p>FY 2013 Plans: Assess effectiveness and contributions of non kinetic countermeasures to AEA SoS mission operating in both stressing IADS and Irregular Warfare/non-IADS environments.</p>		1.220	0.913	0.750
Accomplishments/Planned Programs Subtotals		9.335	11.258	4.118

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604429F: <i>AIRBORNE ELECTRONIC ATTACK</i>	PROJECT 655192: <i>Network & Sys -of-Sys Dev</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>
• 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

D. Acquisition Strategy

Project 5192, "Network and System of Systems Development" uses existing ASC, AFRL, and other contracts and instruments to provide engineering, architecture development, and other support for the AEA System of Systems.

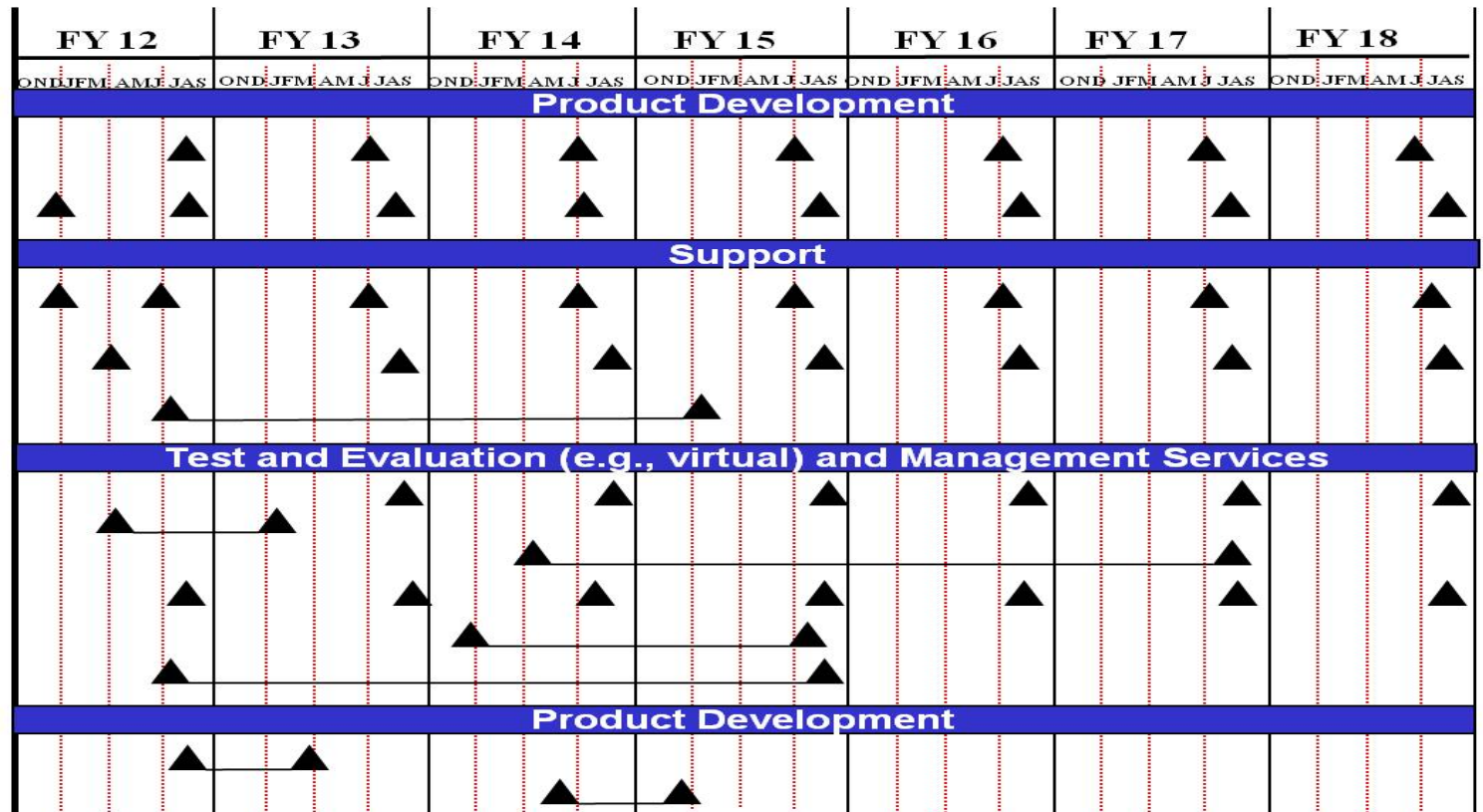
E. Performance Metrics

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

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604429F: <i>AIRBORNE ELECTRONIC ATTACK</i>	PROJECT 655192: <i>Network & Sys -of-Sys Dev</i>

Integrated 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604429F: <i>AIRBORNE ELECTRONIC ATTACK</i>	PROJECT 655192: <i>Network & Sys -of-Sys Dev</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
DoD Planning Scenarios Suppressor updates	1	2011	4	2017
Continuing to Support EW Assessments	2	2011	4	2017
AEA SoS Suppressor Improvements	2	2011	4	2017
AF EW Investment Strategy	4	2011	4	2017
AESA/RWR analysis/test	4	2012	3	2013
Non Kinetic Counter Electronics Analysis	4	2012	1	2015
NKCE Technology Demonstration	3	2014	2	2015
Continuing to Support EW Assessments (1)	2	2011	4	2017
NKCE Technology Demonstration (1)	3	2014	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604429F: <i>AIRBORNE ELECTRONIC ATTACK</i>	PROJECT 655193: <i>Electronic Attack Pod</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
	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					
655193: <i>Electronic Attack Pod</i>	15.716	29.742	-	-	-	-	-	-	-	-	-	-	-	Continuing	Continuing	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0	0	0	0			

Note

In FY2013, Project 655193, Electronic Attack Pod was terminated.

A. Mission Description and Budget Item Justification

This project is to develop, acquire, and field an advanced electronic attack capability to operate in an Irregular Warfare environment and counter non-Integrated Air Defense targets (e.g., counter communications, counter Remote Controlled Improvised Explosive Devices). Included is the integration needed to interface and test the resulting pod on the threshold aircraft, the MQ-9.

This program is included in budget activity 5, System Development and Demonstration, because of the development and/or testing associated with Airborne Electronic Attack.

This project is terminated in FY13. The Air Force is completing risk reduction and determining required funding for program termination.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Initial Development Efforts</p> <p>Description: Initiate development of an advanced electronic attack irregular warfare jamming capability.</p> <p>FY 2011 Accomplishments: Finalized detailed requirements via acquisition strategy baseline planning and analysis, modeling and simulation, systems/ sustaining engineering strategy and analysis, risk analysis, test and evaluation strategy, life cycle cost estimates, and sustainment/logistics analysis.</p> <p>FY 2012 Plans: Complete planning and analysis for Risk Reduction and conduct any required termination activities.</p>	1.100	3.350	-
<p>Title: Risk Reduction</p> <p>Description: Electronic Attack Pod risk reduction will focus on jammer technology, concept design, demonstrations and initial integration efforts.</p> <p>FY 2011 Accomplishments:</p>	14.616	26.392	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604429F: <i>AIRBORNE ELECTRONIC ATTACK</i>	PROJECT 655193: <i>Electronic Attack Pod</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Begin Risk Reduction efforts to include lab demonstrations.			
<i>FY 2012 Plans:</i> Complete Risk Reduction efforts and conduct any required program termination activities.			
Accomplishments/Planned Programs Subtotals	15.716	29.742	-

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 0207442F, APAF: 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

Program terminated in FY13.

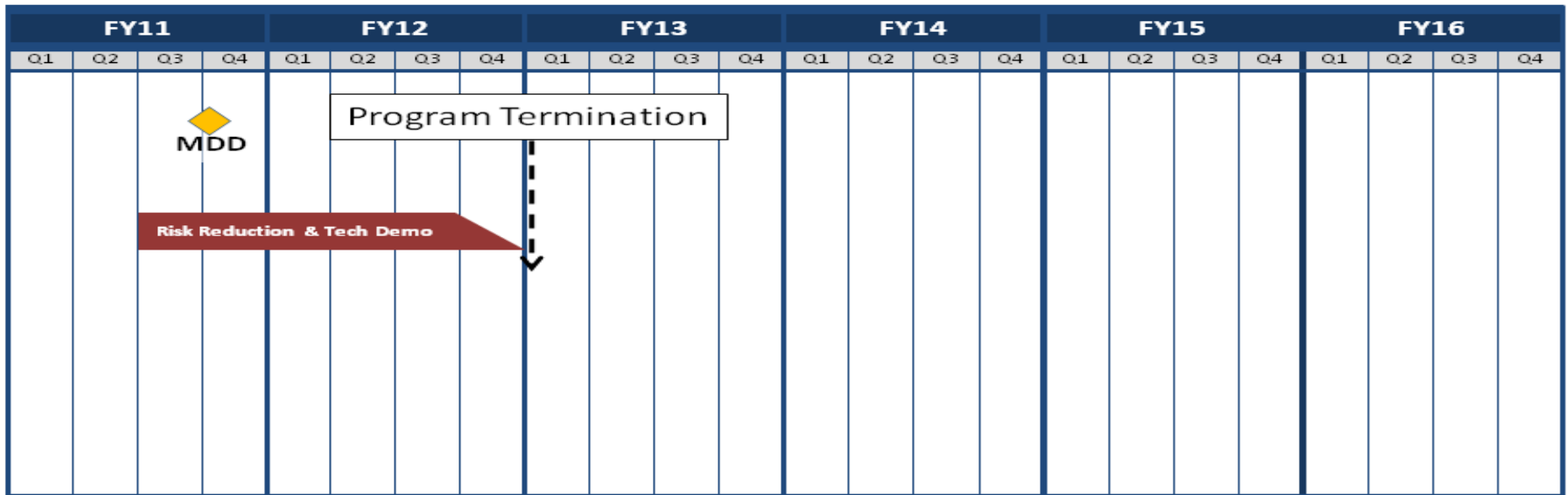
E. Performance Metrics

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604429F: <i>AIRBORNE ELECTRONIC ATTACK</i>	PROJECT 655193: <i>Electronic Attack Pod</i>

Schedule



Legend:
MDD – Materiel Development Decision

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604429F: <i>AIRBORNE ELECTRONIC ATTACK</i>	PROJECT 655193: <i>Electronic Attack Pod</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Program termination	1	2013	1	2013

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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 5: <i>Development & Demonstration (SDD)</i>				PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</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	523.788	621.629	448.594	-	448.594	357.532	241.303	225.734	147.051	Continuing	Continuing
653616: <i>SBIRS High Element EMD</i>	501.663	605.111	365.406	-	365.406	267.408	191.321	190.704	116.057	Continuing	Continuing
657009: <i>Space Modernizaion Initiative</i>	-	-	83.188	-	83.188	90.124	49.982	35.030	30.994	Continuing	Continuing
65A040: <i>Commercially Hosted Infrared Payload (CHIRP)</i>	22.125	16.518	-	-	-	-	-	-	-	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 Space-Based Infrared Systems (SBIRS) primary mission is to provide initial warning of a ballistic missile attack on the US, its deployed forces, and its allies. SBIRS will incorporate new technologies to enhance detection and improve reporting of intercontinental ballistic missile launches, submarine launched ballistic missile launches, and tactical ballistic missile launches. SBIRS supports Missile Defense, Battlespace Awareness, and Technical Intelligence missions by providing reliable, accurate, and timely data to Unified Combatant Commanders, Joint Task Force (JTF) Commanders, the intelligence community, and other users. SBIRS provides increased detection and tracking performance in order to meet requirements in Air Force Space Command's Operational Requirements Document. The SBIRS system includes both space and ground elements. The space segment consists of Geosynchronous Earth Orbit (GEO) satellites, payloads hosted on satellites in Highly Elliptical Orbit (HEO), and Defense Support Program (DSP) satellites. The ground segment consists of both fixed and mobile data processing elements, communications infrastructure, and relay ground stations serving all SBIRS space elements. The HEO-1 and HEO-2 payloads are on-orbit and certified for Integrated Tactical Warning/Attack Assessment (ITW/AA) missile warning operations and technical intelligence operations. The GEO-1 satellite is on-orbit and is undergoing testing and calibration to prepare for operational acceptance. GEO-2 is scheduled for delivery in 3Q FY12 and launch in FY13. Ground segment development continues through the FYDP. Concept studies/activities may be implemented to investigate obsolescence issues, Overhead Persistent Infrared (OPIR) solutions to potential operational concerns, and future evolution paths of the ground and/or space segment.

Space Modernization Initiative (SMI) efforts will include enhancing the current SBIRS to increase transmission security (TranSec), to manage obsolescence, and to mitigate risk. Evolved SBIRS Architecture activities will investigate affordable ways to modify the pointing control assembly, simplify existing payload and potentially accelerate calibration activities enabling an early operational acceptance of on-orbit staring capabilities. Data exploitation activities include OPIR data processing, data publication, algorithm development, network connectivity, data archiving and sensor performance assessments. The efforts will identify affordable, responsive, and resilient measures to get critical battlespace awareness information to the warfighter. They will also investigate substantial reductions in sensor-to-shooter processing and transmittal times so that tactical commanders can respond to enemy threats more quickly and accurately. Hosted payload technology testbed efforts will explore

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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 5: <i>Development & Demonstration (SDD)</i>	PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>

technology maturation, qualification of new components, and subsystem/component prototyping. These efforts will include demonstrations, architecture, system integration and testing, and data exploitation activities.

The Department of Defense terminated the Third Generation Infrared Surveillance (3GIRS) program (PE 0604443F) beginning in FY11. 3GIRS included development efforts for the Commercially Hosted Infrared Payload (CHIRP) demonstration. FY11 and FY12 funds supporting the CHIRP demonstration for technology maturation of space and ground technologies were moved to the SBIRS RDT&E program element under a separate project number. CHIRP will perform risk reduction and evaluation of Wide-Field-of-View (WFOV) IR staring and data processing technology to potentially evolve future SBIRS staring sensors and processing algorithms. An on-orbit demonstration will quantify performance levels of a WFOV sensor in an operational environment. CHIRP sensor testing will also provide Focal Plane Array (FPA) performance/calibration characteristics, validate WFOV staring algorithm performance in an operational environment, and investigate compatibility with current Overhead Persistent Infrared (OPIR) ground systems for missile warning, missile defense, and other mission areas.

This program is assigned to Budget Activity 5, System Development and Demonstration (SDD), because it funds the development and integration of mature systems, and the test, evaluation, and demonstration of those systems.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	530.047	621.629	572.960	-	572.960
Current President's Budget	523.788	621.629	448.594	-	448.594
Total Adjustments	-6.259	-	-124.366	-	-124.366
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-6.259	-	-124.366	-	-124.366

Change Summary Explanation

FY11: -\$6.259M Congressional General Reduction

FY13: -\$83M decrease reflects adjustments to match the phasing of the EMD Service Cost Position (SCP) requirements.

FY13: -\$43M reduction to SMI and a +\$2M increase to implement operationally responsive space technologies.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 653616: <i>SBIRS High Element EMD</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
653616: <i>SBIRS High Element EMD</i>	501.663	605.111	365.406	-	365.406	267.408	191.321	190.704	116.057	Continuing	Continuing
Quantity of RDT&E Articles	1	1	0	0	0	0	0	0	0		

Note

Quantity of RDT&E articles above reflect delivery of GEO-1 in FY11 and GEO-2 in FY12. Both were developed under this project.

A. Mission Description and Budget Item Justification

The Space-Based Infrared Systems (SBIRS) primary mission is to provide initial warning of a ballistic missile attack on the US, its deployed forces, and its allies. SBIRS will incorporate new technologies to enhance detection and improve reporting of intercontinental ballistic missile launches, submarine launched ballistic missile launches, and tactical ballistic missile launches. SBIRS supports Missile Defense, Battlespace Awareness, and Technical Intelligence missions by providing reliable, accurate, and timely data to Unified Combatant Commanders, Joint Task Force (JTF) Commanders, the intelligence community, and other users. SBIRS provides increased detection and tracking performance in order to meet requirements in US Strategic Command's Capstone Requirements Document and Air Force Space Command's Operational Requirements Document. The SBIRS system includes both space and ground elements. The space segment consists of Geosynchronous Earth Orbit (GEO) satellites, payloads hosted on satellites in Highly Elliptical Orbit (HEO), and Defense Support Program (DSP) satellites. The ground segment consists of both fixed and mobile data processing elements, communications infrastructure, and relay ground stations serving all SBIRS space elements. The HEO-1 and HEO-2 payloads are accepted and certified for Integrated Tactical Warning/Attack Assessment (ITW/AA) missile warning operations and technical intelligence operations. The GEO-1 satellite is on-orbit and is undergoing testing and calibration to prepare for operational acceptance. Concept studies/activities may be implemented to investigate obsolescence issues, Overhead Persistent Infrared (OPIR) solutions to potential operational concerns, and future evolution paths of the ground and/or space segment.

This program is assigned to Budget Activity 5, System Development and Demonstration (SDD), because it funds the development and integration of mature systems, and the test, evaluation, and demonstration of those systems.

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

	FY 2011	FY 2012	FY 2013
Title: SBIRS EMD	501.663	605.111	365.406
Description: Continued EMD contracts for Space and Ground segment development, concept studies/activities for obsolescence issues.			
FY 2011 Accomplishments: Continued GEO development. Completed final GEO-1 flight software verification and hardware installs, executed GEO-1 launch campaign. Continued GEO-2 integration, assembly and test, design activities, Ground System Development (Block 10), System Engineering and Program Management, HEO host program office support, Technical Intelligence activities, Data Processing/Exploitation/ground integration activities, Combined Task Force (CTF) support activities, and continuation of systems integration			

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 653616: <i>SBIRS High Element EMD</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
and test studies. Continued Program Office and related support activities (to include SETA), technical analysis and independent verification and validation of contractor. Continued Systems Engineering and Integration (SE&I).			
<i>FY 2012 Plans:</i> Continue GEO development. Continue GEO-1 on-orbit testing. Continue GEO-2 integration, assembly and test, design activities, Ground System Development (Block 10), System Engineering and Program Management, HEO host program office support, Technical Intelligence activities, Data Processing/ Exploitation/ground integration activities, CTF support activities, and continuation of systems integration and test studies. Store GEO-2 and be ready to execute GEO-2 launch campaign. Continue Program Office and related support activities (to include SETA), technical analysis and independent verification and validation of contractor. Continue SE&I.			
<i>FY 2013 Plans:</i> Continue GEO development. Complete GEO-1 operational user evaluation and certification. Store GEO-2 and then conduct launch and on-orbit testing. Continue Ground System Development (Block 10), System Engineering and Program Management, HEO host program office support, Technical Intelligence activities, Data Processing/ Exploitation/ground integration activities, CTF support activities, and continuation of systems integration and test studies. Continue Program Office and related support activities (to include SETA), technical analysis and independent verification and validation of contractor. Continue SE&I.			
Accomplishments/Planned Programs Subtotals	501.663	605.111	365.406

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>
• P-41: <i>OPAF, PE 0305915F, Space Based Infrared System (SBIRS) High</i>	24.667	49.570	47.135	0.000	47.135	28.235	26.332	7.725	7.703	Continuing	Continuing
• P-25: <i>MPAF, PE 0305915F, Space Based Infrared System (SBIRS) High</i>	938.975	324.889	454.251	0.000	454.251	583.220	580.879	537.929	570.776	1,330.491	8,003.147

D. Acquisition Strategy
The pre-SDD SBIRS contracts were competed in full and open competition. Two contracts were awarded to Lockheed/Loral/Aerojet and Hughes/TRW in 1995 for the pre-SDD phase. A single contract was awarded to Lockheed Martin in 1996 for the SDD phase. This contract is still ongoing and will deliver GEO-2 and the ground segment. Production contracts are discussed in the procurement budget exhibits.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 653616: <i>SBIRS High Element EMD</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-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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 653616: <i>SBIRS High Element EMD</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
Pre-EMD (LMMS & Hughes)	C/CPFF	Hughes Aircraft Company:El Segundo, CA	159.600	-		-		-		-	0.000	159.600	159.600
SBIRS EMD	Various	Prime: Lockheed Martin Sunnyvale; Sub: Northrup Grumman;	7,523.671	535.291	Oct 2011	312.598	Oct 2012	-		312.598	825.491	9,197.051	9,197.051
Systems engineering and Integration (SEI)	C/CPAF	The Analytical Sciences Corporation:Andover, MA	22.024	11.613	Dec 2011	8.682	Dec 2012	-		8.682	19.082	61.401	61.401
SBIRS Pre-SDD Contract Adjustment	Various	Not specified.:Location not provided.	4.780	-		-		-		-	0.000	4.780	4.780
Technology	Various	Not specified.:Location not provided.	11.600	-		-		-		-	0.000	11.600	11.600
Phenomenology	Various	Not specified.:Location not provided.	17.350	-		-		-		-	0.000	17.350	17.350
Sensor Technology	Various	Sandia National Lab.;	10.000	-		-		-		-	0.000	10.000	10.000
Subtotal			7,749.025	546.904		321.280		-		321.280	844.573	9,461.782	9,461.782

Remarks

SBIRS EMD includes SBIRS EMD prime contract with Lockheed Martin, Program/Mission Support and Host SPO efforts. Award dates represent date of award of the funds for that fiscal year.

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
Technical Support (FFRDC)	RO	Aerospace Corp.:El Segundo, CA	388.415	26.793	Nov 2011	-		-		-	0.000	415.208	415.208
Various Program Support	Various	Various.;	87.196	20.231	Oct 2011	3.647	Mar 2013	-		3.647	8.561	119.635	119.635
SMC Admin Support	C/TBD	Quantech Services, Inc.:Lexington, MA	6.878	1.861	Dec 2011	-		-		-	0.000	8.739	8.739

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 653616: <i>SBIRS High Element EMD</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
Network Support	C/TBD	Northrop Grumman IT:McLean, VA	20.544	0.676	Nov 2011	-		-		-	0.000	21.220	21.220
SMC Technical Support	C/TBD	Scitor Corp.:El Segundo, CA	58.846	7.050	Dec 2011	-		-		-	0.000	65.896	65.896
SMC Financial Support	C/TBD	Tecolote, Inc.:Goleta, CA	14.335	1.596	Nov 2011	-		-		-	0.000	15.931	15.931
Subtotal			576.214	58.207		3.647		-		3.647	8.561	646.629	646.629

Remarks

Award dates represent date of first award of the fiscal year.

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
Technical Support (FFRDC)	RO	Aerospace Corp.:El Segundo, CA	-	-		23.423	Nov 2012	-		23.423	72.877	96.300	96.300
SMC Admin Support (PMA)	C/TBD	TBD:TBD,	-	-		1.562	Dec 2012	-		1.562	4.418	5.980	5.980
Network Support (PMA)	C/TBD	TBD:TBD,	-	-		0.700	Dec 2012	-		0.700	3.053	3.753	3.753
SMC Technical Support (PMA)	C/TBD	TBD:TBD,	-	-		5.323	Dec 2012	-		5.323	14.417	19.740	19.740
SMC Financial Support (PMA)	C/TBD	TBD:TBD,	-	-		1.301	Dec 2012	-		1.301	4.423	5.724	5.724
Various Management Support Services	Various	Various:Various,	-	-		8.170	Oct 2012	-		8.170	18.168	26.338	26.338
Subtotal			-	-		40.479		-		40.479	117.356	157.835	157.835

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 653616: <i>SBIRS High Element EMD</i>
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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				

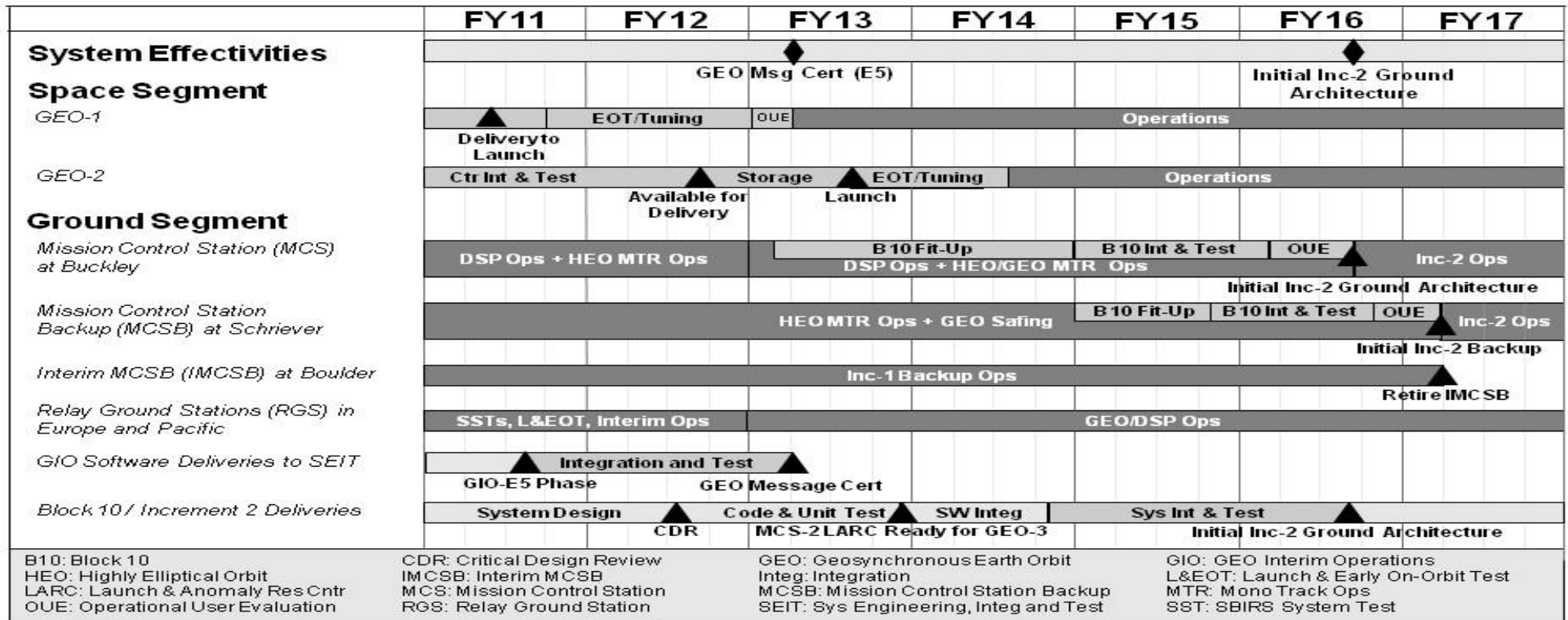
Remarks
Management service contracts will be recompleted prior to FY13.

	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	8,325.239	605.111		365.406		-		365.406	970.490	10,266.246	10,266.246

Remarks
The total EMD program cost estimate (to include cost to complete) is based on the 14 Apr 11 Service Cost Position.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 653616: <i>SBIRS High Element EMD</i>



Design / Development
 Operations / Sustainment
 Integration / Test
 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 653616: <i>SBIRS High Element EMD</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GEO-1 Final Integrated System Test (FIST) Complete	1	2011	1	2011
GEO-2 Baseline Integrated System Test (BIST) 2	1	2011	2	2011
GEO-1 Satellite Delivery	2	2011	2	2011
GEO-2 Acoustic Test	3	2011	3	2011
GEO-1 Payload Calibration and Tuning	3	2011	3	2012
GEO Interim Operations (GIO) Software Final Delivery	3	2011	3	2011
GEO-2 Thermal Vacuum (TVAC) Closed Door Test	4	2011	4	2011
Block 10 Code and Unit Test	3	2012	4	2013
GEO-2 Satellite Available for Delivery	3	2012	3	2012
Block 10 Critical Design Review (CDR) Complete	3	2012	3	2012
OUE/GEO Message Cert	1	2013	2	2013
Block 10 Fit Up	1	2013	3	2014
MSC-2 Launch and Anomaly Resolution Center (LARC) ready for GEO-3 launch and early on-orbit System Test	4	2013	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 657009: <i>Space Modernizaion Initiative</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
657009: <i>Space Modernizaion Initiative</i>	-	-	83.188	-	83.188	90.124	49.982	35.030	30.994	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The SBIRS Space Modernization Initiative (SMI) is funded in PE 0604441, project 657009 and begins in FY13. In the FY12 PB, project 657009 funds were included in project 653616 from FY13 - FY16.

A. Mission Description and Budget Item Justification

Future Overhead Persistent Infrared (OPIR) satellites will be procured using the Department of Defense (DOD) Evolutionary Acquisition for Space Efficiency (EASE) concept. The EASE concept is a procurement approach which seeks stable production and efficient sub-contractor product management through the block buy of two space vehicles at one time (please see SBIRS P-40 Exhibit). In addition, the EASE concept includes use of RDT&E funding for SBIRS Space Modernization Initiative (SMI)(formerly referred to as Capability and Affordability Improvement Program (CAIP)) to fund engineering activities to reduce future production costs through manufacturing and producibility enhancements and to improve capabilities through insertion of new technologies to replace obsolete parts and materials. The SMI efforts will provide opportunities for competition to develop potential technology upgrades at the component and system level for future satellites of the current or any future follow-on system. SMI efforts will include enhancing the current SBIRS to increase transmission security (TranSec), to manage obsolescence, and to mitigate risk. Evolved SBIRS Architecture activities will investigate affordable ways to modify the pointing control assembly, simplify existing payload and potentially accelerate calibration activities enabling an early operational acceptance of on-orbit staring capabilities. Data exploitation activities include OPIR data processing, data publication, algorithm development, network connectivity, data archiving and sensor performance assessments. The efforts will identify affordable, responsive, and resilient measures to get critical battlespace awareness information to the warfighter. They will also investigate substantial reductions in sensor-to-shooter processing and transmittal times so that tactical commanders can respond to enemy threats more quickly and accurately. Hosted payload technology testbed efforts will explore technology maturation, qualification of new components, and subsystem/component prototyping. These efforts will include demonstrations, architecture, system integration and testing, and data exploitation activities.

This program is assigned to Budget Activity 5, System Development and Demonstration (SDD), because it funds the development and integration of mature systems, and the test, evaluation, and demonstration of those systems.

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

	FY 2011	FY 2012	FY 2013
Title: OPIR SMI	-	-	83.188
Description: SMI seeks to improve affordability through producibility enhancements and increase resiliency through obsolescence mitigation.			

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 657009: <i>Space Modernizaion Initiative</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
SMI will also fund engineering activities for technology maturation, qualification of new replacement components, subsystem and component prototyping, architecture and system concept studies, and data exploitation to increase responsive operations.			
FY 2013 Plans: Improve Transmission Security and assess promising new components and systems to confirm their suitability for the OPIR mission (affordable, responsive, and resilient). Pursue evolutionary or alternative OPIR technologies and concepts to reduce obsolescence risks and improve affordability, to include focal plane evolution, simplified pointing control, hosted payload concepts studies, and test bed development to demonstrate proof of concept for future program alternatives. Pursue early exploitation of the SBIRS staring sensor data. Investigate methods to fuse staring sensor data with existing operational and experimental assets. Develop data standards to incorporate Joint OPIR Ground (JOG) recommendations. Create a data archive on the classified network along with application tools to enable better exploitation of collected OPIR data. Team with a hosted payload office (HPO) to identify relevant commercial opportunities for proof of concept to develop/integrate system concepts. Conduct System Engineering and Program Management to include Program Office support such as Federally Funded Research and Development Center (FFRDC) analyses, System Engineering Technical Assistance (SETA) and Systems Engineering and Integration (SE&I).			
Accomplishments/Planned Programs Subtotals	-	-	83.188

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
• P-41: <i>OPAF, PE 0305915F, Space Based Infrared System (SBIRS) High</i>	24.667	49.570	47.135	0.000	47.135	28.235	26.332	7.725	7.703	Continuing	Continuing
• P-25: <i>MPAF, PE 0305915F, Space Based Infrared System (SBIRS) High</i>	938.975	324.889	454.251	0.000	454.251	583.220	580.879	537.929	570.766	1,330.491	8,003.147

D. Acquisition Strategy
Activities such as obsolescence management and producibility improvements will be awarded sole source to the current SBIRS prime contractor. Replacement component prototyping and/or qualification will leverage existing contracts where practical but may require competition. These activities will be managed by the program office. Replacement component and system designs will be acquired with government data rights to allow their incorporation into any future OPIR satellite production or system development. Alternative architecture and concept studies will primarily be performed on FFRDC and SE&I contracts.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 657009: <i>Space Modernizaion Initiative</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-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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 657009: <i>Space Modernizaion Initiative</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
Evolved SBIRS	TBD	TBD:,	-	-		24.475	Feb 2013	-		24.475	75.434	99.909	99.909
Data Exploitation	TBD	TBD:,	-	-		23.723	Feb 2013	-		23.723	4.015	27.738	27.738
Architecture Studies	TBD	TBD:,	-	-		9.350	Feb 2013	-		9.350	12.007	21.357	21.357
Hosted Payloads	TBD	TBD:,	-	-		12.588	Feb 2013	-		12.588	58.133	70.721	70.721
WFOV Testbed	TBD	TBD:,	-	-		7.410	Feb 2013	-		7.410	38.212	45.622	45.622
System Engineering and Integration (SE&I)	Various	Various:,	-	-		1.591	Dec 2012	-		1.591	4.882	6.473	6.473
Subtotal			-	-		79.137		-		79.137	192.683	271.820	271.820

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 Support	Various	Various:,	-	-		0.832	Mar 2013	-		0.832	2.561	3.393	3.393
Subtotal			-	-		0.832		-		0.832	2.561	3.393	3.393

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
Various Management Support Services	Various	Various:,	-	-		3.219	Oct 2012	-		3.219	10.886	14.105	14.105
Subtotal			-	-		3.219		-		3.219	10.886	14.105	14.105

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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 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>				PROJECT 657009: <i>Space Modernizaion Initiative</i>				
	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	-	-	83.188	-	83.188	206.130	289.318	289.318			

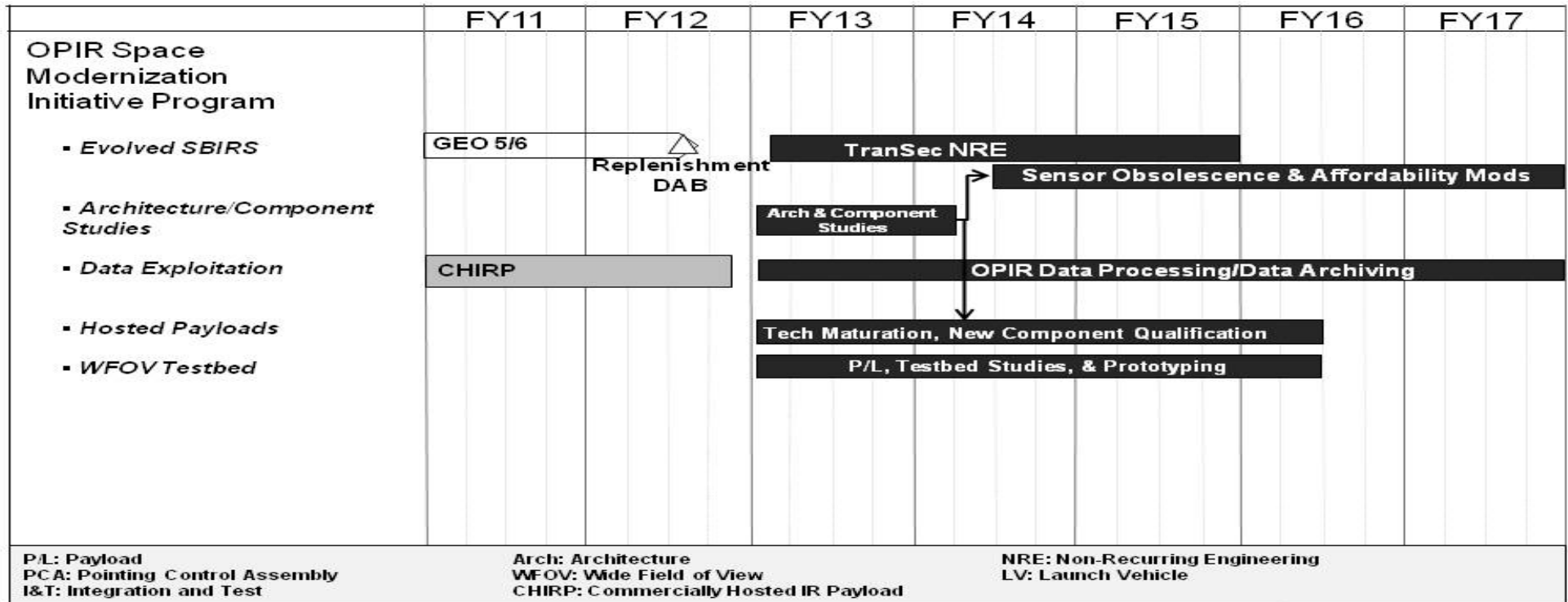
Remarks

Multiple contracts will be used beginning in early FY2013 – specific contractors and other organizations are still TBD

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 657009: <i>Space Modernizaion Initiative</i>

OPIR SMI



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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 657009: <i>Space Modernizaion Initiative</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
TRANSEC Non-recurring End Items	1	2013	4	2015
Architecture & Component Studies	1	2013	2	2014
Hosted Payload Tech Maturation	1	2013	2	2016
WFOV Test Bed	1	2013	2	2016
OPIR Data Processing/Data Archiving	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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>				PROJECT 65A040: <i>Commercially Hosted Infrared Payload (CHIRP)</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
65A040: <i>Commercially Hosted Infrared Payload (CHIRP)</i>	22.125	16.518	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Department of Defense terminated the Third Generation Infrared Surveillance (3GIRS) program (PE 0604443F) beginning in FY11. 3GIRS included development efforts for the Commercially Hosted Infrared Payload (CHIRP) demonstration. FY11 and FY12 funds supporting the CHIRP demonstration for technology maturation of space and ground technologies were moved to the SBIRS RDT&E PE under a separate project number.

CHIRP will perform risk reduction and evaluation of Wide-Field-of-View (WFOV) IR staring and data processing technology to potentially evolve future SBIRS staring sensors and processing algorithms. An on-orbit demonstration will quantify performance levels of a prototype WFOV sensor in an operational environment. CHIRP sensor testing will also provide Focal Plane Array (FPA) performance/calibration characteristics, validate WFOV staring algorithm performance in an operational environment, and investigate compatibility with current Overhead Persistent Infrared (OPIR) ground systems for missile warning, missile defense, and other mission areas.

This program is assigned to Budget Activity 5, System Development and Demonstration (SDD) because it funds the development and integration of mature systems, and the test, evaluation, and demonstration of those systems.

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

	FY 2011	FY 2012	FY 2013
Title: CHIRP	22.125	16.518	-
Description: Continue contracts for Commercially Hosted Infrared Payload (CHIRP) demonstration and related support activities.			
FY 2011 Accomplishments: Successfully launched CHIRP Payload into orbit. Received first light and executing on orbit operations to collect various targets. Continued to develop and test mission data processing and ground infrastructure to mature WFOV algorithms and technologies. Developed lessons learned for future commercial hosted payload for military applications. Demonstrated CHIRP on-orbit capabilities to include fusion of CHIRP data with other OPIR systems. Collected, archived and analyzed on-orbit data against cooperative targets and continued to mature WFOV algorithms. Continued Program Office and related support activities.			
FY 2012 Plans: Continue development and test of mission data processing and ground infrastructure to mature WFOV algorithms and technologies. Demonstrate CHIRP on-orbit capabilities to include fusion of CHIRP data with other OPIR systems. Collect, archive			

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 65A040: <i>Commercially Hosted Infrared Payload (CHIRP)</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
and analyze on-orbit data against cooperative targets and continue to mature WFOV algorithms. Continue Program Office and related support activities.			
Accomplishments/Planned Programs Subtotals	22.125	16.518	-

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
• 3GIRS, PE 0604443F: <i>Third Generation Infrared Surveillance</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	78.420

D. Acquisition Strategy
Continuation of risk reduction and evaluation of WFOV IR staring and data processing technology within CHIRP will be performed through contracts previously funded and initiated by the Third Generation Infrared Surveillance (3GIRS) program. In FY2010, within the 3GIRS program, CHIRP completed and delivered the flight demonstration payload to commercial host for integration and testing.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 65A040: <i>Commercially Hosted Infrared Payload (CHIRP)</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
WFOV IR staring technologies risk reduction activities	Various	*See Remarks:Various,	14.797	7.003	Nov 2011	-		-		-	0.000	21.800	21.800
Subtotal			14.797	7.003		-		-		-	0.000	21.800	21.800

Remarks
*Performing Activities: System Dynamics Lab (Logan, UT), American Government Services (McLean, VA), Northrop Grumman Electronic Systems (Azusa, CA).

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
Various Program Support	Various	Various:Various,	0.712	0.640	Oct 2011	-		-		-	0.000	1.352	1.352
Technical Engineering	C/TBD	Cobham Analytic Solutions:Lake Forest, CA	2.783	2.360	Jan 2012	-		-		-	0.000	5.143	5.143
Technical Support (FFRDC)	RO	Aerospace Corp.:El Segundo, CA	3.833	6.515	Nov 2011	-		-		-	0.000	10.348	10.348
Subtotal			7.328	9.515		-		-		-	0.000	16.843	16.843

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

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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 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>				PROJECT 65A040: <i>Commercially Hosted Infrared Payload (CHIRP)</i>				
	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	22.125	16.518		-		-		-	0.000	38.643	38.643

Remarks

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604441F: <i>Spaced Based Infrared System (SBIRS) High</i>	PROJECT 65A040: <i>Commercially Hosted Infrared Payload (CHIRP)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Commercially Hosted IR Payload (CHIRP) Launch	4	2011	4	2011
CHIRP Flight Demo (On-orbit Test)	4	2011	3	2012
Algorithm DT&D Deliveries (Mission Data Processing)	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 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604602F: <i>Armament/Ordnance 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
Total Program Element	6.659	7.755	9.951	-	9.951	7.078	5.720	5.879	5.957	Continuing	Continuing
653133: <i>Bombs & Fuzes</i>	1.209	3.936	3.993	-	3.993	1.065	1.031	1.060	1.074	Continuing	Continuing
655361: <i>Stores-Aircraft Interface</i>	5.450	3.819	5.958	-	5.958	6.013	4.689	4.819	4.883	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Armament Ordnance Development program provides for initial and continuing development of weapons/munitions (kinetic and non-kinetic) and munitions equipment for support and operational use. This PE develops and improves the following weapons and weapons subsystems: bombs, bomb fuzes, insensitive explosive fills (Insensitive Munitions - IM), aircraft ammunition, stores-aircraft interface upgrades to include the Universal Armament Interface (UAI), directed energy technology transition to weapons, munitions materiel handling equipment (MMHE), munitions containers, and other weapon subsystems.

- Armament Subsystems: This project develops and improves conventional weapons/munitions (kinetic and non-kinetic) and fuzes. The project also provides an opportunity to quickly insert emerging technologies into existing and developing aircraft munitions. The project provides for research, development, and testing of medium caliber ammunition and enterprise management of guns, ammunition, and Munitions Materiel Handling Equipment (MMHE) systems integration and testing to ensure tested and certified medium caliber ammunition is provided to users. The project helps the AF meet Insensitive Munitions (IM) compliance through strategic planning, development of insensitive explosive fills, and bomb case modifications to make weapons insensitive to unplanned stimuli. Armament Standardization/Control/Munitions Materiel Handling Equipment (MMHE) is a continuing project to develop and improve the standardization and commonality of munitions handling and armament equipment to preclude duplication. This project also funds the operation of the tri-service Container Design Retrieval System (CDRS), maintaining a container database to preclude proliferation and duplication of munitions containers and supporting organic container design.

- Stores-Aircraft Interface: This project conducts stores-aircraft interface upgrades and standards development to include the Universal Armament Interface (UAI). UAI is an Air Force initiative to develop standardized software interfaces in aircraft, weapons and mission planning to support integration of weapons independent of aircraft Operation Flight Program (OFP) cycles.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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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 0604602F: <i>Armament/Ordnance Development</i>
BA 5: <i>Development & Demonstration (SDD)</i>	

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	6.693	10.055	9.933	-	9.933
Current President's Budget	6.659	7.755	9.951	-	9.951
Total Adjustments	-0.034	-2.300	0.018	-	0.018
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.300			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.034	-	0.018	-	0.018

Change Summary Explanation

FY11 adjustments for Congressional General Reductions -\$0.034

FY12 Congressional Mark -\$2.3M to Project 655361, Stores-Aircraft Interface, due to Universal Armament "Contract Delay"

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604602F: <i>Armament/Ordnance Development</i>	PROJECT 653133: <i>Bombs & Fuzes</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
653133: <i>Bombs & Fuzes</i>	1.209	3.936	3.993	-	3.993	1.065	1.031	1.060	1.074	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Armament Subsystems Project contains a variety of work:

- Bombs/munitions and fuzes.

(a) Medium Caliber Ammunition project assesses, refines, and develops medium caliber ammunition, to include, but not limited to, conducting PGU-28A/B qualification testing (F-22) and performing a 20mm clean sheet (alternate round) assessment.

(b) Fixed Wing Advanced Precision Kill Weapon System II (FW APKWS II) Joint Capability Technology Demonstration (JCTD) will integrate the existing APKWS II, a rotary wing (helicopter) system, onto the fixed-wing A-10 platform and provide a precision laser guided, low collateral damage capability against static and moving targets.

(c) This project funds follow-on development activities for legacy fuzes, including reliability enhancements and producibility improvements.

- Insensitive Munitions (IM). IM develops explosive fills and bomb case modifications to make conventional weapons insensitive to unplanned stimuli. The project also supports AF IM strategic planning to achieve IM compliance IAW U.S. Code, Title 10, Subtitle A, Part N, Chapter 141, Section 2389, "Ensuring safety regarding insensitive munitions."

- Munitions Materiel Handling Equipment (MMHE) and Container Design Retrieval System (CDRS). Armament Standardization/Control/Munitions Materiel Handling Equipment (MMHE) is a continuing project to develop and improve the standardization and commonality of munitions handling and armament equipment to preclude duplication. Efforts are limited to the study, design, and development of MMHE and armament control systems. Procurement will be performed and funded by the applicable weapons system project. The tri-service Container Design Retrieval System (CDRS) is a database intended to preclude proliferation and duplication of munitions containers. It also supports organic container design, acquisition transportation, prototyping, testing capabilities, as well as the Joint Ordnance Commander's Working Group (JOCG) for Packaging, Handling, and Loading.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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

	FY 2011	FY 2012	FY 2013
Title: Munitions Materiel Handling Equipment/Container Design Retrieval System	0.557	0.776	0.802
Description: MMHE/CDRS: enhance safety and improve standardization of munitions handling and armament equipment; maintain tri-service database to preclude proliferation/duplication of munitions containers and support organic container design			
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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604602F: <i>Armament/Ordnance Development</i>	PROJECT 653133: <i>Bombs & Fuzes</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Provided container design expertise and technical support to AF munitions/weapons containers developers. Managed and operated the Tri-Service Container Design Retrieval System (CDRS) database. Processed 32 excess container requests. Tested and validated new Miniature Air Launched Decoy (MALD) Container. Completed CV-22 Osprey Test Instrumentation Data Acquisition System (TIDAS) version 3H Rack crash load stress analysis. Developed Deck Ring Pull Test Fixture to complete deck ring/pear ring pull test of MHU-226 trailer deck for potential nuclear weapon load certification. Completed 22 Munitions Materiel Handling Equipment (MMHE) support equipment projects. Fabricated 26 equipment prototypes for drafting verification and delivery to Air Force units for additional test and evaluation. Supported Medium Caliber Ammunition Program with redesign of 20MM table chute and prototype for new processing assembly table base. Supported B-2 program with forklift adapter to transport Rotary Launcher Adapter (RLA). Assisted F-35 program with development of internal weapons loading adapter. Provided direct customer support through customer support visits to Kadena AB, Okinawa, Andersen AFB, Guam, Joint Base Elmendorf Richardson, AK and Whiteman AFB, MO.</p> <p>FY 2012 Plans: Provide container design expertise and technical support to AF munitions/weapons containers developers. Planned completion of 10 Munitions Materiel Handling Equipment (MMHE) support equipment projects to include engineering, drafting, proof load, technical data, and safety authorizations. Planned fabrication of 7 prototypes for test and evaluation purposes. Project to complete 7 first article equipment fabrications for drafting verification and delivery to Air Force units for additional test and evaluation. Provide support to all Specialized Program Office (SPO) with new weapons and container development. Continue support and sustainment of all previously existing items developed by the MMHE program office.</p> <p>FY 2013 Plans: Provide container design expertise and technical support to AF munitions/weapons containers developers. Complete 10 Munitions Materiel Handling Equipment (MMHE) support equipment projects to include engineering, drafting, proof load, technical data, and safety authorizations. Fabricate 7 prototypes for test and evaluation purposes. Complete 7 first article equipment fabrications for drafting verification and delivery to Air Force units for additional test and evaluation. Provide support to all Specialized Program Office (SPO) with new weapons and container development. Continue support to the F-35 programs with equipment to test and evaluate various pylons and adapters. Continue support and sustainment of all previously existing items developed by the MMHE program office.</p>				
<p>Title: Medium Caliber Ammunition</p> <p>Description: Assess, refine, and develop medium caliber ammunition. The project provides enterprise management of guns, ammunition, and Munitions Materiel Handling Equipment (MMHE) systems integration.</p> <p>FY 2011 Accomplishments:</p>		0.200	2.760	2.790

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604602F: <i>Armament/Ordnance Development</i>	PROJECT 653133: <i>Bombs & Fuzes</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Conducted PGU-28A/B F-22 qualification testing. FY 2012 Plans: Conduct PGU-28A/B F-22 qualification testing; perform 20mm clean sheet (alternate round) assessment FY 2013 Plans: Conduct PGU-28A/B F-22 qualification testing; perform 20mm clean sheet (alternate round) assessment.				
Title: Insensitive Munitions (IM) Description: Strategic IM planning for the AF; support Joint Service IM efforts; provide technical guidance and test expertise to AF IM programs FY 2011 Accomplishments: Initiated FY13/14 AF IM Strategic Plan; supported DoD and Joint Service IM planning; provided IM planning expertise to individual AF programs, including the BLU-129, SDB II, and JASSM ER. FY 2012 Plans: Deliver FY13/14 AF IM Strategic Plan; support DoD and Joint Service IM planning; provide IM planning expertise to individual AF programs. FY 2013 Plans: Initiate the FY15/16 AF IM Strategic Plan; support DoD and Joint Service IM planning; provide IM planning expertise to individual AF programs.		0.231	0.400	0.401
Title: Fixed Wing Advanced Precision Kill Weapon System II (FW APKWS II) Joint Capability Technology Demonstration (JCTD) Description: FW APKWS II JCTD: will integrate the existing APKWS II, a rotary wing (helicopter) system, onto the AV-8B and A-10 platforms and demonstrate its military utility to provide a precision laser guided, low collateral damage capability against static and moving targets, both close support and urban targets; system will leverage existing rocket motor and warhead stockpiles FY 2011 Accomplishments: Awarded contract and completed integrated baseline review. Completed management transition plan and conducting the System Requirements Review (SRR) and Program Design Review (PDR). Completed A-10 and F-16 Instrumented Measurement Vehicle (IMV) flight clearances. Conducting (a)AV8B IMV flight test and at China Lake, (b) A-10 and F-16 test flights at Eglin Test Range, and (c) Adjacent Rocket Fire test at MCAS Yuma, AZ. FY 2012 Plans:		0.221	-	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604602F: <i>Armament/Ordnance Development</i>	PROJECT 653133: <i>Bombs & Fuzes</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
N/A			
Accomplishments/Planned Programs Subtotals	1.209	3.936	3.993

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

Fuzes (including JPF) is a continuing effort with most activities performed in-house or through contracted services (small contracts). Fixed Wing APKWS II JCTD is being conducted under the current contract for the rotary wing APKWS II system. MMHE/CDRS project activities are performed in-house with limited technical and analysis contract support. Medium Caliber project activities are performed in-house with technical and analysis contract support, organic government test support, and possible contracted services (small 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-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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604602F: <i>Armament/Ordnance Development</i>	PROJECT 653133: <i>Bombs & Fuzes</i>

The Fuze, Insensitive Munitions (IM), Medium Caliber Ammunition, Munitions Materiel Handling Equipment (MMHE), and Munitions Container programs are continuing activities that support fuze development, IM compliance, development and testing of medium caliber ammunition, MMHE design and development, and container standardization activities throughout the year. IM strategic planning is also an ongoing activity.

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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 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PE 0604602F: Armament/Ordnance Development

PROJECT

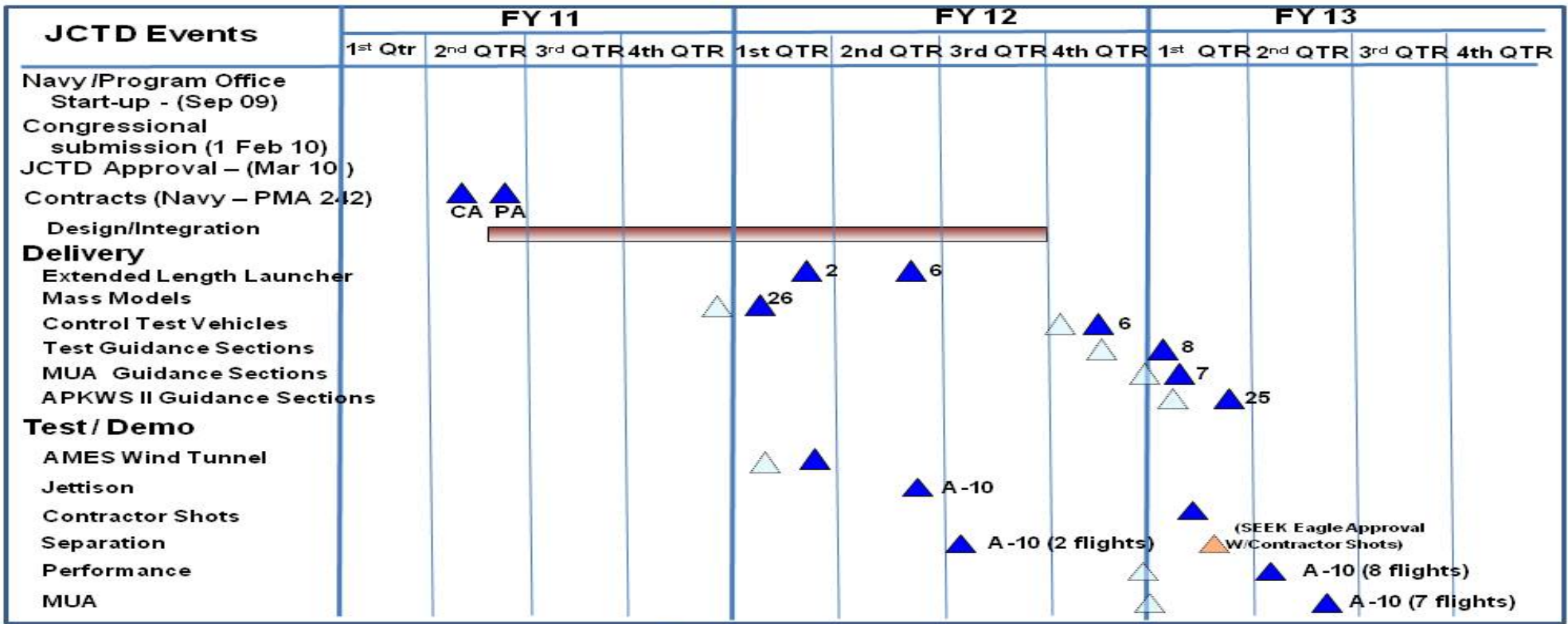
653133: Bombs & Fuzes



USAF FW APKWS II JCTD Schedule



Start Right... Start Well!



Key: △ Original Schedule ▲ Current 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604602F: <i>Armament/Ordnance Development</i>	PROJECT 653133: <i>Bombs & Fuzes</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Munitions Materiel Handling Equipment (MMHE): design, prototype, test priority MMHE projects	1	2011	4	2013
Container Design Retrieval System (CDRS): support tri-service data base	1	2011	4	2013
Medium Caliber Ammunition: Conduct PGU-28A/B F-22 qualification testing	4	2011	1	2013
Medium Caliber Ammunition: Perform 20mm (alternate round) assessment	1	2012	2	2014
Submit AF FY13/14 Insensitive Munitions (IM) Strategic Plan	2	2012	2	2012
FW APKWS II JCTD	1	2011	4	2012
FW APKWS II JCTD: Design/Integration	2	2011	3	2012
FW APKWS II JCTD: A-10 Fight Tests	4	2012	2	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604602F: <i>Armament/Ordnance Development</i>	PROJECT 655361: <i>Stores-Aircraft Interface</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
655361: <i>Stores-Aircraft Interface</i>	5.450	3.819	5.958	-	5.958	6.013	4.689	4.819	4.883	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Universal Armament Interface (UAI) is an Air Force program to develop, enhance, and implement standardized interfaces in current and future aircraft (manned or unmanned), weapons and mission planning to support integration of weapons independent of aircraft Operational Flight Program (OFP) cycles. UAI is currently being implemented on the F-15E, F-16 Block 40/50, and EPAF(European Participating Air Forces) F-16 aircraft, Small Diameter Bomb (SDB) I and II, Joint Direct Attack Munition (JDAM), Laser JDAM, Joint Air-to-Surface Stand-off Missile (JASSM) and Precision Guided Munitions Planning Software (PGMPS). Additional aircraft and weapons, including but not limited to, Joint Strike Fighter (JSF/F-35), MQ-9, as well as Army and Navy systems, have program plans to implement UAI. The UAI program office is responsible for development and enhancement of the standard (U.S. and allied), support to coalition/allied/joint interoperability efforts for weapons-platform interface efforts, provision of certification tools (test assets) and implementation support to aircraft and weapons.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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

	FY 2011	FY 2012	FY 2013
Title: UAI Development	5.450	3.819	5.958
Description: Conduct stores-aircraft interface upgrades and standards development to include the Universal Armament Interface (UAI), development of and maintenance to the UAI, and facilitation of aircraft and stores program users in the UAI process.			
FY 2011 Accomplishments: In FY 2011: continued development and configuration management of UAI standards in response to user needs, working group management, technical meetings and workshops, risk reduction studies, common mission planning, integration support, updates to test tools, maintenance and procurement of certification tool(s) to continue CV02.			
FY 2012 Plans: In FY 2012: Continued development and configuration management of UAI standards in response to user needs, working group management, technical meetings and workshops, risk reduction studies, common mission planning, integration support and updates to test tools.			
FY 2013 Plans:			

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604602F: <i>Armament/Ordnance Development</i>	PROJECT 655361: <i>Stores-Aircraft Interface</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
In FY2013: Continue development and configuration management of UAI standards in response to user needs, working group management, technical meetings and workshops, risk reduction studies, common mission planning, and integration support. Also, continue integration and updates to test tools, including maintenance and procurement of certification tools.			
Accomplishments/Planned Programs Subtotals	5.450	3.819	5.958

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>
• 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

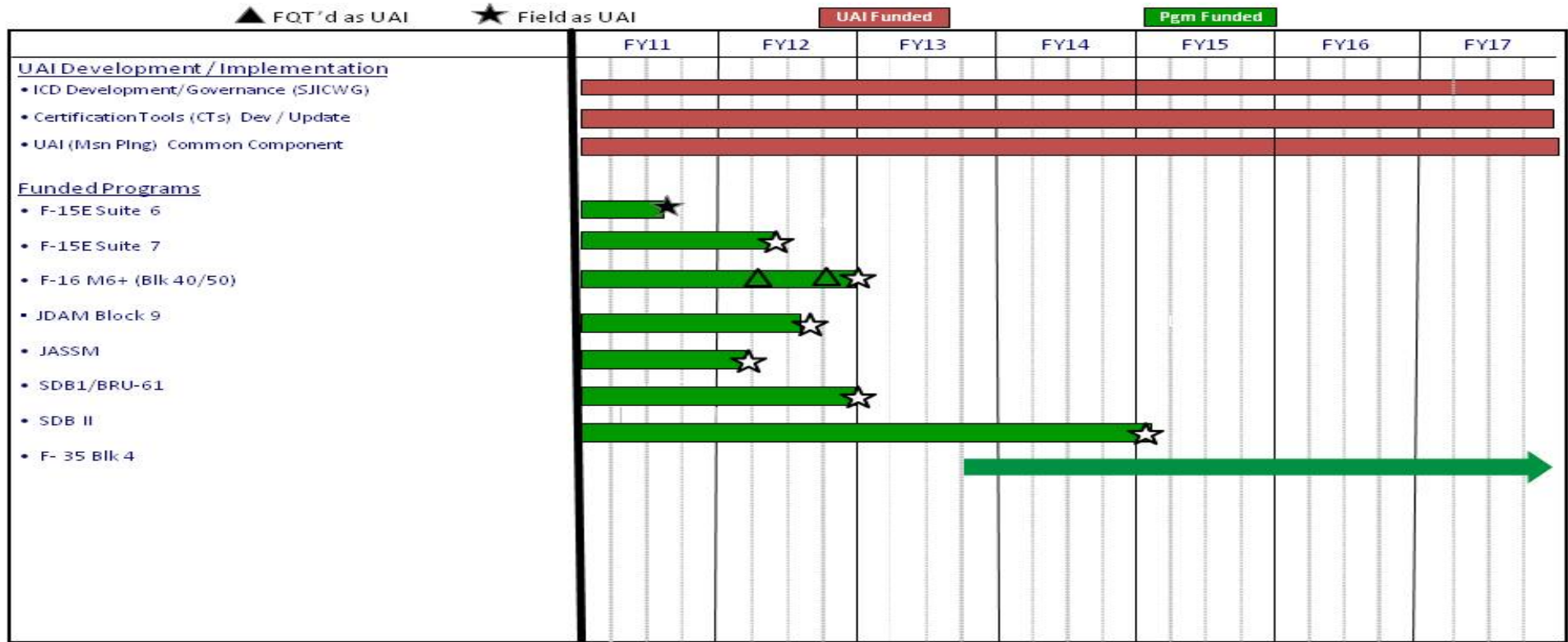
D. Acquisition Strategy
 In December 2004, under the authority of a class Justification and Approval (J&A), the UAI program office awarded individual Cost Plus Fixed Fee (CPFF) contracts to Boeing, Lockheed Martin, Northrop Grumman and Raytheon. Each OEM is responsible for a different piece of the total UAI requirement based on its product-specific (platform/weapon) expertise. During FY10 these contracts expired. Under the authority of a new class J&A, Cost Plus Incentive Fee (CPIF) contracts were awarded to the four UAI vendors in August 2010. Follow-on period of performance was awarded in August 2011 for 18 months to better align future contract awards with funding through the FYDP.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604602F: <i>Armament/Ordnance Development</i>	PROJECT 655361: <i>Stores-Aircraft Interface</i>

Exh R-4, UAI Technical 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604602F: <i>Armament/Ordnance Development</i>	PROJECT 655361: <i>Stores-Aircraft Interface</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
F-15E Suite 6, CV01 Fielded	1	2011	3	2011
F-15E Suite 7, CV01 Fielded	1	2011	2	2012
JDAM Block 9, CV01 Fielded	1	2011	3	2012
JASSM, CV01 Fielded	1	2011	1	2012
CV02 - Configuration Version 2	1	2011	4	2017
SDB 1	1	2011	4	2012
F-16 M6+ (Block 40/50)	1	2011	4	2012
SDB II	1	2011	4	2014
F-35	4	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604604F: <i>Submunitions</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	1.614	2.427	2.567	-	2.567	2.564	2.574	2.647	2.682	Continuing	Continuing
653166: <i>Joint Smart Munitions Test and Evaluation</i>	1.614	2.427	2.567	-	2.567	2.564	2.574	2.647	2.682	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Project Chicken Little continues to provide vital research, development, test and evaluation (RDT&E) support to developmental smart munitions, seekers/sensors and their platforms, networked weapons, advanced weapon concepts, and innovative targeting technologies employed against a wide variety of vehicle targets, theater air defense units, and an extensive array of foreign threat systems and associated equipment. Hostile combat systems and related equipment exhibit physical characteristics (i.e. signatures), as well as certain vulnerabilities, which can be exploited by various targeting technologies leading to the elimination or incapacitation of the threat through the application of force (e.g. smart munitions or directed energy) or application of intelligence, surveillance, reconnaissance (ISR) methods. Chicken Little collects physical, functional, and signature attributes of actual foreign threat systems and related equipment to construct high-fidelity models for use in scientific analysis (e.g. vulnerability and effectiveness assessments) and weapon/targeting system design. Chicken Little collects high resolution signature data using a variety of ground, air, and space-based sensors against both new and existing (obtained, sustained, and maintained to be signature representative) foreign targets; with and without the presence of camouflage, concealment, and deception materials; and operated using enemy tactics/CONOPS. The resulting highly reliable, realistic data directly supports munitions/targeting development programs and helps mitigate overall acquisition risk. The project serves as a major focal point for joint signature exploitation, collection, and dissemination amongst the DoD and intelligence community (IC). Chicken Little is a prime contributor in the time critical process to rapidly exploit, assess, and determine US and allied weapon/targeting performance against high value targets. Customers include: the major Defense and Service Intelligence Centers, all Services, the Joint Technical Coordinating Group (JTTCG) who develop the Joint Munitions Effectiveness Manuals (JMEMs), Combatant Commands, AF Major Commands, US Air Force Weapons School curriculum support, and others. Current projects include, but are not limited to: target signature exploitation, target geometric modeling (for identifying vulnerabilities), improving air capabilities against protected structures (specifically hard and deeply buried targets), and the testing of multiple seekers, sensors, and targeting technologies in representative environments against COCOM/MAJCOM/IC high value targets.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604604F: <i>Submunitions</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	1.622	2.427	2.562	-	2.562
Current President's Budget	1.614	2.427	2.567	-	2.567
Total Adjustments	-0.008	-	0.005	-	0.005
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.008	-	0.005	-	0.005

Change Summary Explanation

FY11 adjustment Congressional General Reductions -\$0.008

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Predictive Tool Development	0.250	-	-	-	-
Description: Continue to develop predictive tools for weapon/target interactions in order to support improvements to mission planning and bomb damage assessment.					
FY 2011 Accomplishments: Conduct additional sub-scale and full scale test events with high strength and ultra-high strength concrete; use test results to improve damage models.					
FY 2012 Plans: Task completed in FY11					
FY 2013 Base Plans: Task completed in FY11					
FY 2013 OCO Plans: No OCONUS requirement					
Title: Model Development and Vulnerability Analysis	0.325	0.365	0.375	-	0.375

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604604F: <i>Submunitions</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>Description: Develop, validate, and accredit improved models for target vulnerability and weapons effectiveness in support of Combatant Commands' (CoCOMs) requirements.</p> <p>FY 2011 Accomplishments: Construct at least two more geometric models based on CoCOMs' requirements.</p> <p>FY 2012 Plans: Construct at least two more geometric models based on CoCOMs' requirements.</p> <p>FY 2013 Base Plans: Develop, validate, and accredit improved models for target vulnerability and weapons effectiveness in support of Combatant Commands' (CoCOMs) requirements.</p> <p>FY 2013 OCO Plans: No OCONUS requirements.</p>					
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<p>Title: System Exploitation</p> <p>Description: Provide the DoD community accurate multi-spectral signatures obtained from high-value, signature representative modern threat systems using advanced collection technologies.</p> <p>FY 2011 Accomplishments: Exploit 3-4 high value threat systems. Provide signature data from multiple threat systems in various environments using advanced and developmental seeker/sensor technologies.</p> <p>FY 2012 Plans: Exploit 3-4 high value threat systems. Provide signature data from multiple threat systems in various environments using advanced and developmental seeker/sensor technologies</p> <p>FY 2013 Base Plans:</p>	0.900	1.026	1.035	-	1.035
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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604604F: <i>Submunitions</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Exploit high value threat systems (typically 4 per year). Provide signature data from multiple threat systems in various environments using advanced and developmental seeker/sensor technologies FY 2013 OCO Plans: No OCONUS requirements.					
Title: Bi-Annual Sensor Week Description: Previously included in the System Exploitation line. Provides unique air/ground demo of candidate seekers/sensors/ISR assets. FY 2011 Accomplishments: Previously included in the System Exploitation line. Provides unique air/ground demo of candidate seekers/sensors/ISR assets. FY 2012 Plans: Previously included in the System Exploitation line. Provides unique air/ground demo of candidate seekers/sensors/ISR assets. FY 2013 Base Plans: (Note: Not a new start, previously addressed within System Exploitation, delineated here for improved traceability.) Sensor Week (SW) provides a singularly unique forum for joint service demonstration of developmental and operational seekers/sensors/ISR assets against a wide array of US, coalition, and foreign national ground targets. FY 2013 OCO Plans: No OCONUS requirements.	-	-	0.020	-	0.020
Title: ISR Exploitation Description: Plan and conduct captive carry flight tests and signature collection for seeker/sensor technology evaluations. FY 2011 Accomplishments:	0.139	0.250	0.337	-	0.337

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604604F: <i>Submunitions</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>Investigate some or all of the following technologies for utility in ISR activities: Hyperspectral Imagery (HIS), shortwave IR and Polarmetric Imaging.</p> <p>FY 2012 Plans: Investigate some or all of the following technologies for utility in ISR activities: Hyper Spectral Imagery (HSI), shortwave IR and Polarmetric Imaging.</p> <p>FY 2013 Base Plans: Exploit the signatures of ISR targets; conduct rapid reaction performance analysis & evaluations in support of COCOM/MAJCOM immediate/urgent warfighter needs; optimize current project methods to support ISR testing</p> <p>FY 2013 OCO Plans: No OCONUS requirements.</p>					
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<p>Title: Fleet Relevance</p> <p>Description: Previously included in the System Exploitation line. Obtain/maintain high value signature quality threat assets.</p> <p>FY 2011 Accomplishments: Previously included in the System Exploitation line. Obtain/maintain high value signature quality threat assets.</p> <p>FY 2012 Plans: (Note: Not a new start, previously addressed within System Exploitation, delineated here for improved traceability.) Attain new emerging threat assets and/or decoys. Sustain and maintain existing foreign threat assets to ensure proper "signature representative" nature for systems development and testing.</p> <p>FY 2013 Base Plans: Assist in obtaining relevant, high value, and emergent threat assets and/or decoys. Ensure the fleet foreign threat assets remain properly "signature representative" for systems development and testing.</p> <p>FY 2013 OCO Plans:</p>	-	0.786	0.800	-	0.800
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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604604F: <i>Submunitions</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
No OCONUS requirements.					
Accomplishments/Planned Programs Subtotals	1.614	2.427	2.567	-	2.567

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>	
• None: <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
Funds are executed organically in support of test and evaluation activities including studies, analyses, flight & ground tests, model building and simulation. Virtually all of the work is performed in-house by the 46th Test Wing.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604604F: <i>Submunitions</i>	PROJECT 653166: <i>Joint Smart Munitions Test and Evaluation</i>

SCHEDULE

Project 3166, Joint Smart Munition Test and Evaluation program (project Chicken Little) does not execute in accordance with established acquisition milestones. Chicken Little is a continuing test effort: Target/warhead evaluation/analysis, signature tests, and captive carry flight tests are ongoing throughout the year and continue through the FYDP. The type of activities is given in Section B. The timing, duration, and level of effort is decided at the annual Steering Committee meetings.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604604F: <i>Submunitions</i>	PROJECT 653166: <i>Joint Smart Munitions Test and Evaluation</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Target/warhead evaluation/analysis, signature test, captive carry flight tests.	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604617F: <i>Agile Combat 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	34.037	7.978	13.059	-	13.059	16.750	18.595	16.657	14.718	Continuing	Continuing
652895: <i>CE Readiness</i>	29.281	4.258	10.098	-	10.098	13.750	15.533	13.509	11.528	Continuing	Continuing
654910: <i>Aeromedical Readiness</i>	4.756	3.720	2.961	-	2.961	3.000	3.062	3.148	3.190	Continuing	Continuing

Note

In FY13, Project 652895 contains one New Start effort for Airfield Damage Repair Unexploded Ordnance (UXO) Removal.

A. Mission Description and Budget Item Justification

This Program Element (PE) provides capabilities to rapidly deploy, defend and sustain airfield operations, command and control activities, and force protection to ensure readiness. In addition, this PE provides tactical and strategic aeromedical evacuation systems, automated information systems, and medical treatment equipment to meet unique Air Force medical readiness and operational requirements. These activities are prerequisites to establishing air superiority. Development of Agile Combat Support (ACS) systems provides beddown for aircraft, support equipment, and forces at both main operating bases and contingency operating locations, which may have only a runway and a water source. They also offer crucial utilities, runway stabilization and repair, explosive ordnance disposal (EOD), rescue and recovery aids, aeromedical evacuation and treatment equipment, and security and reconnaissance capabilities to support aircraft deployment, launch, recovery and regeneration. Lighter-weight, rapidly deployable equipment has become essential in providing the ability to quickly establish operations, security, and base defense in support of numerous global contingencies, including various humanitarian/relief efforts, and special operations throughout the world.

The Agile Combat Support program is in RDT&E Budget Activity 5 - Engineering and Manufacturing Development (EMD) because it supports development, testing and evaluation of materials and equipment for contingency basing, detection and handling of explosive ordnance, tactical shelters, and aeromedical systems.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	37.987	11.878	10.490	-	10.490
Current President's Budget	34.037	7.978	13.059	-	13.059
Total Adjustments	-3.950	-3.900	2.569	-	2.569
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-3.900			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.956	-			
• Other Adjustments	-2.994	-	2.569	-	2.569

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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 5: <i>Development & Demonstration (SDD)</i>	PE 0604617F: <i>Agile Combat Support</i>

Change Summary Explanation

FY11 adjustments include -\$2.800 Congressional Directed Reductions, -\$0.194 Congressional General Reductions and -.956 SBIR

FY12 -\$3.9M Congressional Directed Reductions on the Basic Expeditionary Airfield resources (BEAR) effort

FY13 \$2.5M increase provides funding for the Airfield Damage Repair Unexploded Ordnance (UXO) effort identified in Project 652895.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604617F: <i>Agile Combat Support</i>	PROJECT 652895: <i>CE 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
652895: <i>CE Readiness</i>	29.281	4.258	10.098	-	10.098	13.750	15.533	13.509	11.528	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

FY12 \$3.9M reduction mark against the Basic Expeditionary Airfield resources (BEAR)

FY13, Project 652895 contains one New Start effort for Airfield Damage Repair Unexploded Ordnance (UXO) Removal.

A. Mission Description and Budget Item Justification

This project provides capabilities to rapidly deploy, defend and sustain airfield operations, command and control activities, and force protection to ensure readiness. These activities are prerequisites to establishing air superiority. Also, this project provides crucial utilities, runway stabilization and repair, explosive ordnance disposal (EOD), rescue and recovery aids; and security and reconnaissance capabilities to support global aircraft deployment, employment, recovery and regeneration. Lighter-weight, rapidly deployable equipment has become essential in providing the ability to quickly establish operations, security, and base defense in support of numerous global contingencies, including various humanitarian/relief efforts, and special operations throughout the world.

The Civil Engineering Readiness program is in RDT&E Budget Activity 5 - Engineering and Manufacturing Development (EMD) because it supports development, test, and evaluation of materials and equipment for contingency basing, detection and handling of explosive ordnance, and tactical shelters.

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

	FY 2011	FY 2012	FY 2013
Title: Airfield Damage Repair	2.771	4.258	7.598
Description: Develop, test and certify equipment for the rapid repair of runway and airfield damage after attack.			
FY 2011 Accomplishments: Initiated test and certification of equipment, tactics, techniques and procedures for the rapid repair of runway and airfield damage after attack.			
FY 2012 Plans: Continue test and certification of equipment, tactics, techniques and procedures for the rapid repair of runway and airfield damage after attack.			
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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604617F: <i>Agile Combat Support</i>	PROJECT 652895: <i>CE Readiness</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Continue test and certification of equipment, tactics, techniques and procedures for the rapid repair of runway and airfield damage after attack.				
<p>Title: Airfield Damage Repair Unexploded Ordnance Removal</p> <p>Description: Provide the capability to rapidly mitigate UXOs on damaged airfields after attack to support sortie generation.</p> <p>FY 2011 Accomplishments: Not applicable</p> <p>FY 2012 Plans: Not applicable</p> <p>FY 2013 Plans: Initiate development of a capability to rapidly mitigate UXOs on damaged airfields after attack to support sortie generation.</p>		-	-	2.500
<p>Title: Explosives Ordnance Disposal (EOD)</p> <p>Description: Develop, test, evaluate and/or certify equipment that will improve the Air Force Explosive Ordnance Disposal (EOD) technician's ability to respond, assess, neutralize/render safe and dispose of all types of ordnance, to include conventional and unconventional, chemical, biological, nuclear, Improvised Explosive Devices (IEDs) and Weapons of Mass Destruction (WMD).</p> <p>FY 2011 Accomplishments: Initiated integration of the counter-IED Hand-Held Detection Device audio capability into the EOD bomb suit.</p> <p>FY 2012 Plans: Not Applicable</p> <p>FY 2013 Plans: Not applicable.</p>		1.510	-	-
<p>Title: Joint Concept Technology Demonstration (JCTD)</p> <p>Description: Facilities Study. Cost benefit analysis and recommended set of solutions addressing facilities vulnerabilities.</p> <p>FY 2011 Accomplishments: Complete selection and field testing of a representative sample of current technologies and products to harden or otherwise make resilient, including pipelines, fuel and water storage, electrical power grid, communications nodes, and munitions storage.</p> <p>FY 2012 Plans:</p>		25.000	-	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604617F: <i>Agile Combat Support</i>	PROJECT 652895: <i>CE Readiness</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Not Applicable			
FY 2013 Plans: Not applicable.			
Accomplishments/Planned Programs Subtotals	29.281	4.258	10.098

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>
• 59: <i>PE 0208028F, Other Procurement, AF (OPAF), Other Base and Maintenance Support, Airbase Operability</i>	43.799	34.854	5.358	0.000	5.358	21.939	46.596	32.629	33.656	Continuing	Continuing

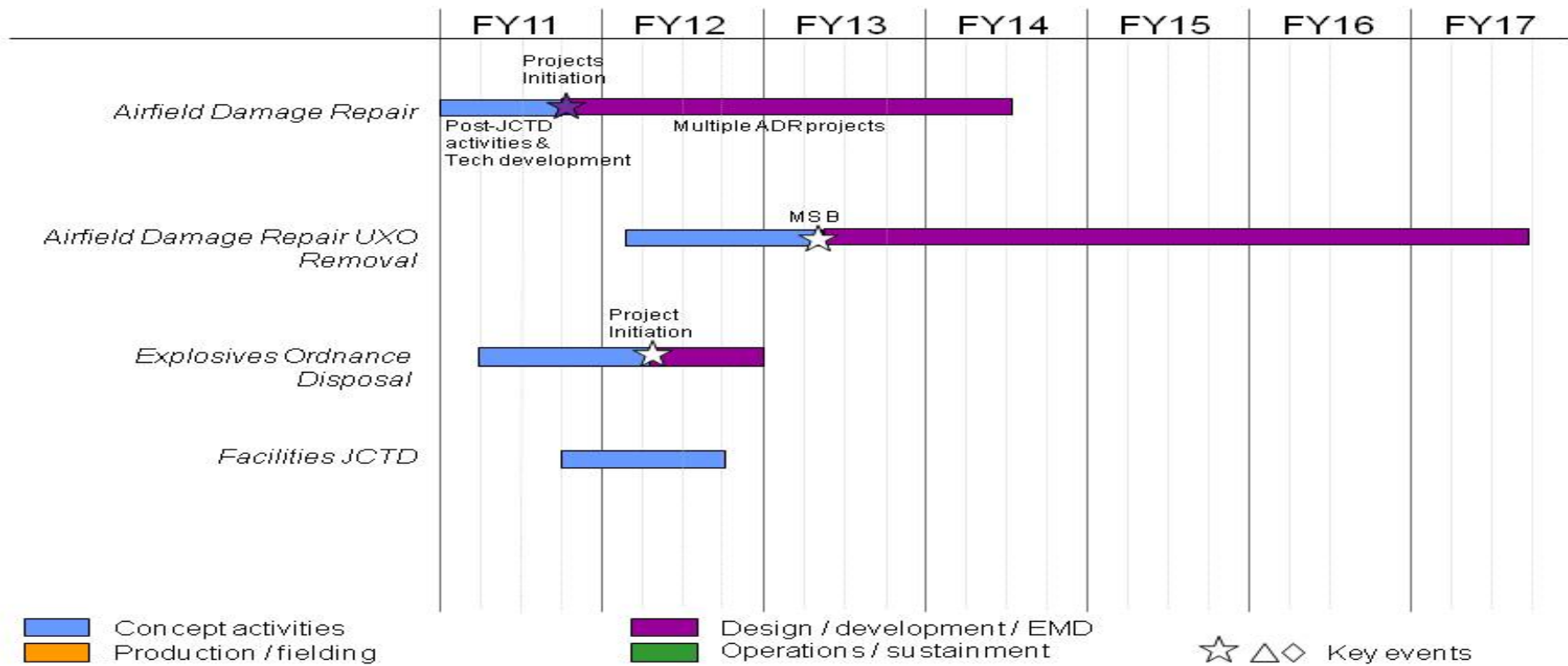
D. Acquisition Strategy
A majority of projects funded in this PE employ a streamlined acquisition approach. Whenever practical, commercial items are tested and evaluated as candidates for solutions to user needs. This normally involves characterization, verification and qualification testing to ensure commercial off-the-shelf equipment is properly adapted for military purposes.

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 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604617F: Agile Combat Support	PROJECT 652895: CE Readiness

Civil Engineering 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604617F: <i>Agile Combat Support</i>	PROJECT 652895: <i>CE Readiness</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Test and certfy equipment to support expedient airfield damage repair after attack	4	2011	2	2014
Engineering and Manufacturing Development for Airfield Damage Repair Unexploded Ordnance Removal	2	2013	3	2017
Integrate Hand-Held Detection Device Audio into EOD Bomb Suit	2	2012	4	2012
Facilities Study JCTD	3	2011	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604617F: <i>Agile Combat Support</i>	PROJECT 654910: <i>Aeromedical 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
654910: <i>Aeromedical Readiness</i>	4.756	3.720	2.961	-	2.961	3.000	3.062	3.148	3.190	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The Blood Oxygenation System identified in the FY12 Budget Item Justification Documents was terminated due to technology immaturity.

A. Mission Description and Budget Item Justification

This program provides tactical and strategic aeromedical evacuation systems, automated information systems, and medical treatment equipment to meet unique Air Force medical readiness and operational requirements. Current efforts include the Deployable Oxygen System (DOS), Field Intravenous Reconstitution (FIVR), and the Blood Oxygenation System (BOS) programs.

The Aeromedical Readiness program is in RDT&E Budget Activity 5 - Engineering and Manufacturing Development (EMD) because it supports development, testing, and evaluation of systems and equipment for patient care during contingency operations and aeromedical evacuations.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Deployable Oxygen System (DOS)</p> <p>Description: Development of oxygen systems to meet deployable oxygen requirements</p> <p>FY 2011 Accomplishments: Continued development of oxygen systems to meet deployable oxygen requirements</p> <p>FY 2012 Plans: Continue development of oxygen systems to meet deployable oxygen requirements</p> <p>FY 2013 Plans: Continue development of oxygen systems to meet deployable oxygen requirements</p>	0.033	0.870	2.385
<p>Title: Field Intravenous Reconstitution (FIVR)</p> <p>Description: EMD of FIVR for Expeditionary Trauma Resuscitation (ETR)</p> <p>FY 2011 Accomplishments: Continue EMD of FIVR for ETR</p> <p>FY 2012 Plans:</p>	4.723	2.850	0.576

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604617F: <i>Agile Combat Support</i>	PROJECT 654910: <i>Aeromedical Readiness</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Continue EMD of FIVR for ETR			
<i>FY 2013 Plans:</i> Continue EMD of FIVR for ETR			
Accomplishments/Planned Programs Subtotals	4.756	3.720	2.961

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	0.000	0.000

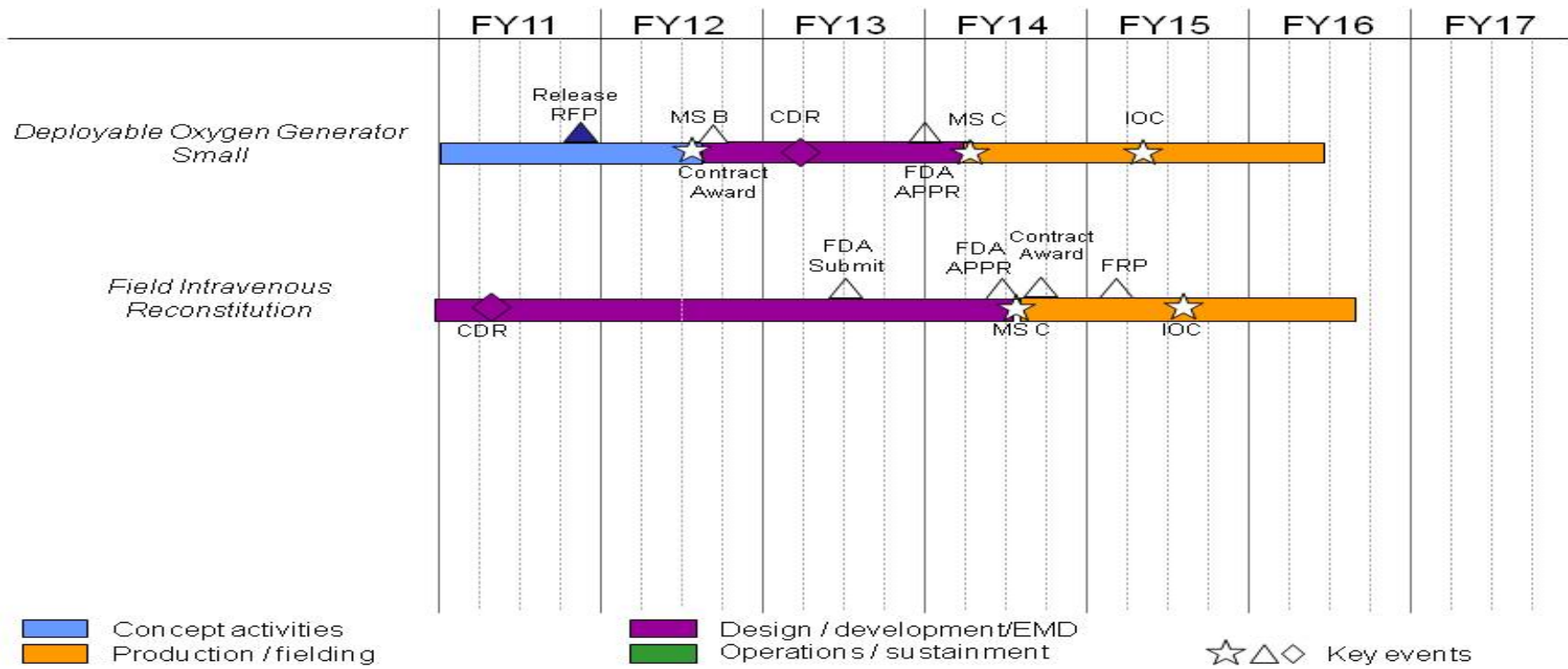
D. Acquisition Strategy
All major projects are awarded under best-value competitive solicitation.

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 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604617F: Agile Combat Support	PROJECT 654910: Aeromedical Readiness

Aeromedical 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604617F: <i>Agile Combat Support</i>	PROJECT 654910: <i>Aeromedical Readiness</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Engineering and Manufacturing Development Phase for the Deployable Oxygen Generator System - Small	3	2012	2	2016
Continue Engineering and Manufacturing Development Phase for the Field Intravenous Reconstitution System	1	2011	3	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604706F: <i>Life Support 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	10.340	9.280	9.720	-	9.720	10.087	8.450	8.726	9.520	Continuing	Continuing
65412A: <i>Life Support Systems</i>	10.340	9.280	9.720	-	9.720	10.087	8.450	8.726	9.520	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2012, Project 65412A, Life Support Systems, the Modular Aircrew Common Helmet (MACH) program was terminated.
 In FY 2013, Project 65412A, Life Support Systems, includes new starts for Cold Weather Aviation System (CWAS) and Integrated Aircrew Body Armor System programs.

A. Mission Description and Budget Item Justification

This program element provides for recapitalization, continuing research and development, and integration of aircrew flight equipment/airmen combat effectiveness equipment and subsystems to satisfy operational command requirements for improved/enhanced airmen performance capabilities. Aircrew flight equipment/airmen combat effectiveness systems consist of human-centered programs that enable weapons systems to use more of their full mission envelopes, maximize combat capabilities, and protect airmen. This includes, but is not limited to, the following projects: directed energy protective equipment, flight helmets and visors, oxygen breathing equipment for aviators, radios and locator beacons to include support equipment, nuclear flash blindness protection, night vision devices, noise reduction devices, anti-g suits, flame resistant/retardant and blast protective gear, aircraft seating, impact protection, flotation devices, and personnel parachutes. Program management support includes tasks to assess deficiencies of currently fielded equipment, evaluate and demonstrate feasibility of new technologies, provide for the transition of new technologies to development programs/projects, conduct business case analyses, assess suitability of commercially available items, and support all current aircrew flight equipment/airmen combat effectiveness programs.

The Integrated Aircrew Ensemble (IAE) develops a readily-configurable integrated flight ensemble to improve safety, survival, and performance using modern materials, and addresses full spectrum of aircrew requirements for manned non-space aircraft and foster commonality across most aircraft platforms. IAE will replace the multiple layers of flight gear, to include the flight suit, g-suit, survival vest, and other equipment, used during flying operations. The system will increase acceleration protection, maximize performance and reduce thermal burden throughout full range of military operations. There are three proposed variants: ejection seat, rotary wing, and non-ejection seat aircraft.

This program is in Budget Activity 5, Engineering and Manufacturing Development (EMD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604706F: <i>Life Support Systems</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	10.650	11.280	9.943	-	9.943
Current President's Budget	10.340	9.280	9.720	-	9.720
Total Adjustments	-0.310	-2.000	-0.223	-	-0.223
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.256	-			
• Other Adjustments	-0.054	-	-0.223	-	-0.223

Change Summary Explanation

FY11 adjustments for Congressional General Reductions of -\$0.054M

FY12 adjustments for Integrated Aircrew Ensemble (IAE) program received \$2.0M Congressional reduction due to contract award delay.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Aircrew Flight Equipment (AFE)	0.824	0.100	-	-	-
Description: AFE effort investigates the feasibility of using commercial-off-the-shelf/non-developmental item technology. Effort is centered around quick replacement of antiquated Vietnam-era flight equipment. Efforts include EMD tasks associated with equipment engineering, modification, integration, testing, and procurement of test articles. Major initiatives include Low Profile Parachute (LPP) and the Night Vision Goggle Head Harness (NVGHH).					
FY 2011 Accomplishments: Began Engineering and Manufacturing Development of LPP.					
FY 2012 Plans: Continue Engineering and Manufacturing Development of LPP; conduct safe-to-fly certification of LPP.					
FY 2013 Base Plans: N/A					
FY 2013 OCO 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604706F: <i>Life Support Systems</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: Cold Weather Aviation System (CWAS) - New Start Description: Multi-layered garment(s), boots and gloves to be utilized by aircrew members performing duties in arctic weather conditions reaching temperatures as low as -49 degrees Fahrenheit. FY 2011 Accomplishments: N/A FY 2012 Plans: N/A FY 2013 Base Plans: Initiate Requests for Information and undergo market research to set groundwork for program. FY 2013 OCO Plans: N/A	-	-	0.050	-	0.050
Title: Flash Blindness Goggles Description: Flash Blindness Goggles effort is for development of eye protection against high intensity, rapid onset flashes encountered during nuclear blast. FY 2011 Accomplishments: N/A FY 2012 Plans: Initiate Requests for Information and undergo market research to set groundwork for program. FY 2013 Base Plans: Continue execution of program. FY 2013 OCO Plans: N/A	-	0.075	0.100	-	0.100
Title: Integrated Aircrew Body Armor System - New Start Description: A single system with the combined capabilities of the survival component carrier; the fixed-wing PCU-17/P harness and HBU-6/P safety strap, rotary-wing gunners belt restraint device; the life preserver	-	-	0.050	-	0.050

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604706F: <i>Life Support Systems</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
unit (legacy LPU-10/P underarm with low profile horse collar); and Body armor (capable of NIJ level III or mil-std-3027 rating of 4321 type C protection with option for hard strike plates). FY 2011 Accomplishments: N/A FY 2012 Plans: N/A FY 2013 Base Plans: Initiate Requests for Information and undergo market research to set groundwork for program. FY 2013 OCO Plans: N/A					
Title: Integrated Aircrew Ensemble (IAE) Description: IAE effort is for development of an improved aircrew flight ensemble to replace the existing aircrew flight ensemble. FY 2011 Accomplishments: Began Engineering and Manufacturing Development contract. Major program events for FY11 were Preliminary Design Review and component level testing. FY 2012 Plans: Continue Engineering and Manufacturing Development. Major program events for FY12 are Critical Design Review, Developmental Test & Evaluation, Test Readiness Review and Design Verification Test. FY 2013 Base Plans: Continue Engineering and Manufacturing Development. Major program events for FY13 are Developmental Test & Evaluation, Test Readiness Review and Design Verification Test. FY 2013 OCO Plans: N/A	6.514	5.918	7.956	-	7.956
Title: Modular Aircrew Common Helmet (MACH) Description: MACH effort is to develop a common helmet to reduce helmet variants and parts, and increase capability.	1.840	0.050	-	-	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604706F: <i>Life Support Systems</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> Continued Developmental Test & Evaluation and accomplished Operational Assessment.</p> <p><i>FY 2012 Plans:</i> MACH program cancelled. Remaining funding used for Program Management Administration costs associated with contract closeout.</p> <p><i>FY 2013 Base Plans:</i> N/A</p> <p><i>FY 2013 OCO Plans:</i> N/A</p>					
<p><i>Title:</i> Voice in Beacon (ViB)</p> <p><i>Description:</i> Voice in Beacon (ViB) will provide two-way, line of sight amplitude modulation voice and personnel locator beacon capability for peacetime operations to allow downed aircrew to communicate with civil and combat search and rescue assets.</p> <p><i>FY 2011 Accomplishments:</i> N/A</p> <p><i>FY 2012 Plans:</i> Initiate requests for information and undergo market research to set groundwork for program.</p> <p><i>FY 2013 Base Plans:</i> Continue execution of program</p> <p><i>FY 2013 OCO Plans:</i> N/A</p>	-	0.050	0.100	-	0.100
<p><i>Title:</i> Management Services</p> <p><i>Description:</i> Program Management Support, Travel, and Test & Evaluation.</p> <p><i>FY 2011 Accomplishments:</i> Continuation of listed activities.</p> <p><i>FY 2012 Plans:</i></p>	1.162	3.087	1.464	-	1.464

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604706F: <i>Life Support Systems</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Continuation of listed activities.					
<i>FY 2013 Base Plans:</i> Continuation of listed activities.					
<i>FY 2013 OCO Plans:</i> N/A					
Accomplishments/Planned Programs Subtotals	10.340	9.280	9.720	-	9.720

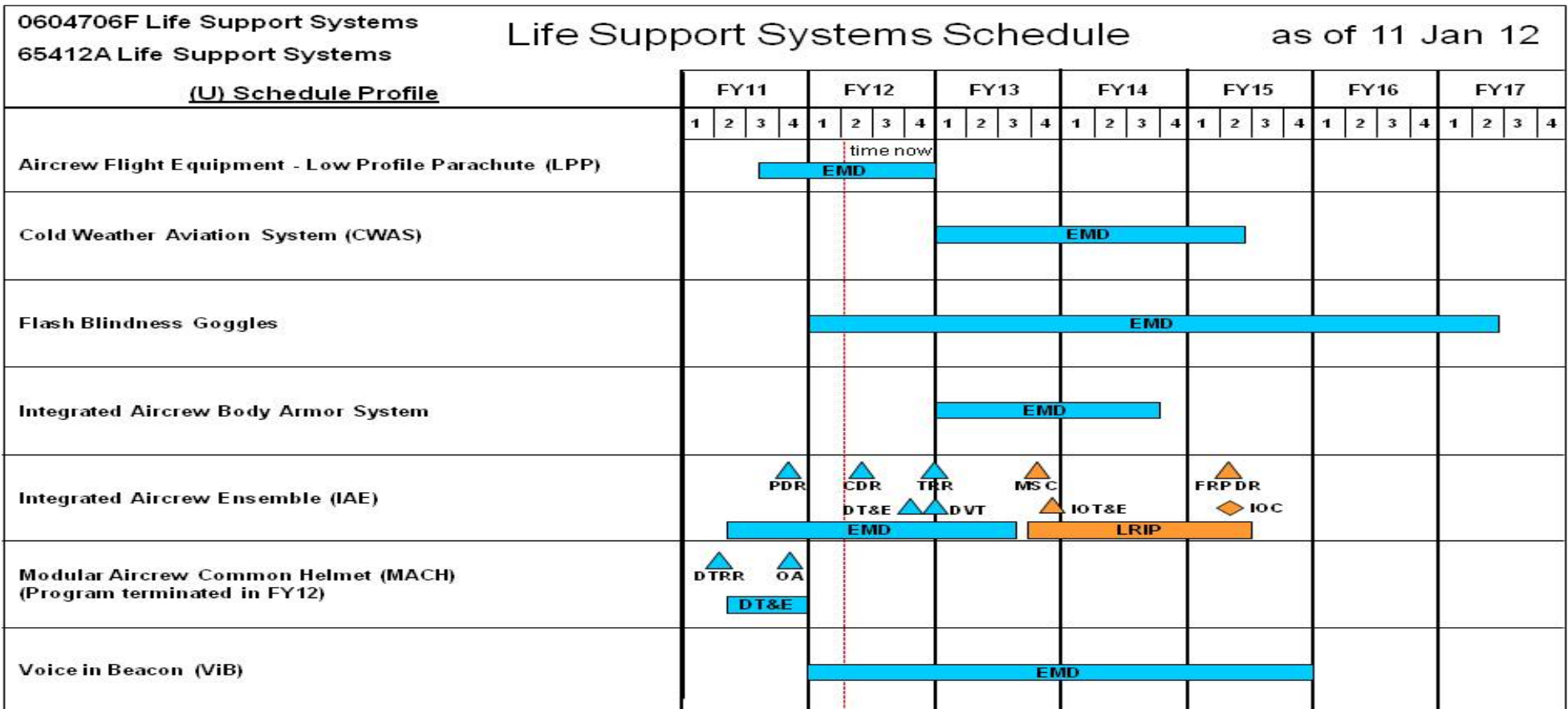
D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 56: <i>Other Procurement, Air Force, PE 0702833F, Items Less Than \$5M (Safety/Rescue Equipment), Life Support Procurement, WSC 842990</i>	4.004	0.000	7.452	0.000	7.452	8.801	8.098	8.161	8.271	Continuing	Continuing

E. Acquisition Strategy
 Acquisition Strategy is carried out at the project level.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604706F: <i>Life Support Systems</i>	PROJECT 65412A: <i>Life Support Systems</i>



Key Events: / Material Solution Analysis Phase Technology Development Phase Engineering & Management Development Phase Production & Deployment Phase Operations & Support Phase

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604706F: <i>Life Support Systems</i>	PROJECT 65412A: <i>Life Support Systems</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Aircrew Flight Equipment - LPP [Engineering and Manufacturing Development]	3	2011	4	2012
CWAS [Engineering and Manufacturing Development]	1	2013	2	2015
Flash Blindness Goggles [Engineering and Manufacturing Development]	1	2012	2	2017
Integrated Aircrew Body Armor System [Engineering and Manufacturing Development]	1	2013	3	2014
IAE [Engineering and Manufacturing Development]	2	2011	3	2013
IAE [Preliminary Design Review]	4	2011	4	2011
IAE [Developmental Test & Evaluation]	4	2012	4	2012
IAE [Milestone C]	4	2013	4	2013
IAE [Low Rate Initial Production]	4	2013	2	2015
IAE [Initial Operational Test & Evaluation]	3	2014	3	2014
IAE [Full Rate Production Decision Review]	2	2015	2	2015
MACH [Developmental Test & Evaluation]	2	2011	4	2011
MACH [Operational Assessment]	4	2011	4	2011
ViB [Engineering and Manufacturing Development]	1	2012	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604735F: <i>Combat Training Ranges</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	35.723	8.106	9.222	-	9.222	28.828	24.419	19.072	19.301	Continuing	Continuing
652286: <i>Combat Training Range Equipment</i>	35.723	8.106	9.222	-	9.222	28.828	24.419	19.072	19.301	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Combat Training Range (CTR) Program Element (PE) provides equipment and support to Air Force units and combat training ranges for mission testing, training, and evaluation of aircrews, as well as the operational testing of weapon systems and tactics under simulated combat conditions. This PE provides funding for the development of electronic warfare training capabilities, telecommunications, instrumentation equipment/systems, and evolutionary upgrades to facilitate live/virtual/constructive connectivity and standardization across all platforms to include coalition, F-22A and F-35 aircraft, and interoperability for joint test/training exercises in varied environments. The P5 Combat Training System (P5CTS), a collaborative development between USAF and USN, provides air combat training systems for both services at operational locations worldwide. Increments include hardware and software upgrades, an encrypted software communications architecture compliant Advanced Data Link to facilitate interoperability in a multiple independent level security environment and training with F-22A and F-35, internal pod replacement subsystems, integration of new aircraft Operational Flight Programs, and the development of solutions to enable live/ virtual/ constructive capabilities. This PE also includes the development of advanced threat emitters. The Joint Threat Emitter (JTE) continues the development of a comprehensive suite of threat signals for aircrew tactics and electronic combat training for simulated penetrations of hostile airspace. This program complements existing range threat simulators by emulating signals that simulate current and future air defense and threat radars. JTE Increment 1 is currently in production. Consistent with the evolutionary acquisition strategy and documented ACC training requirements, development will continue with next generation threat systems. Future increments will continue to add additional capability to the warfighter's training ranges. This PE includes Legacy Range Threat Systems including Miniature Multiple Threat Emitter Systems-M3P (Mini-MUTES), Multiple Threat Emitter System (MUTES), Modular Threat Emitter (MTE) and Tactical Radar Threat Generator (TRTG), Band Simulator and Unmanned Modular Threat Emitter (UMTE) Systems, which are being considered for modernization that will extend the system's service life and allow for upgrades to antiquated components for increased reliability and capabilities.

This program is in Budget Activity 5 - Systems Development and Demonstration because the CTR Program directly contributes to the effectiveness and survivability of US combat forces by providing training capabilities to simulate real combat conditions to prepare the warfighter for actual combat.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604735F: <i>Combat Training Ranges</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	36.905	28.106	18.357	-	18.357
Current President's Budget	35.723	8.106	9.222	-	9.222
Total Adjustments	-1.182	-20.000	-9.135	-	-9.135
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-20.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.994	-			
• Other Adjustments	-0.188	-	-9.135	-	-9.135
 Change Summary Explanation					
FY11: Congressional General Reductions -\$0.188					
FY13 funding reduced for higher DoD priorities					

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Air Combat Training Systems (ACTS) funding support for Range Instrumentation Systems	-	6.753	1.817
Description: Air Combat Training Systems (ACTS) funding support for Range Instrumentation Systems to include the development, integration and testing of P5 Combat Training Systems (P5CTS) evolutionary upgrades to provide software/hardware upgrades, aircraft/pod integration, upgrades for range applications, interoperability improvements, encrypted communication. In addition, funding for Advance Data Link is to facilitate interoperability in a multi-level security environment and training with F-22A and F-35, internal pod replacement subsystems, integration of new aircraft operational Flight Programs and the development of solutions to enable live virtual constructive capabilities.			
FY 2011 Accomplishments: Continue Air Combat Training Systems (ACTS) funding support for Range Instrumentation Systems to include the development, integration and testing of P5 Combat Training Systems (P5CTS) evolutionary upgrades to provide software/hardware upgrades, aircraft/pod integration, upgrades for range applications, interoperability improvements, encrypted communication.			
FY 2012 Plans: Air Combat Training Systems (ACTS) funding support for Range Instrumentation Systems to include the development, integration and testing of P5 Combat Training Systems (P5CTS) evolutionary upgrades to provide software/hardware upgrades, aircraft/pod integration, upgrades for range applications, interoperability improvements, encrypted communication			

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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 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604735F: <i>Combat Training Ranges</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
N/A				
FY 2013 Plans: Air Combat Training Systems (ACTS) funding support for Range Instrumentation Systems to include the development, integration and testing of P5 Combat Training Systems (P5CTS) evolutionary upgrades to provide software/hardware upgrades, aircraft/pod integration, upgrades for range applications, interoperability improvements, encrypted communication				
Title: Range instrumentation Waveform Description: Continue Range instrumentation Waveform (RIW) evaluation, demonstration and test effort.		8.808	-	-
FY 2011 Accomplishments: Continue RIW system integration on developmental hardware. Continue RIW evaluation, demonstration, and test effort.				
Title: Software Communications Architecture Description: Continued development of the encrypted software communications architecture.		9.780	-	-
FY 2011 Accomplishments: Continued development of the encrypted software communication's architecture. Continue evaluation, demonstration, and test				
Title: Threats Description: Develop a capability to train aircrews against Next Generation threats (double digit surface to air missile threats). The system will be deployed as part of an Integrated Air Defense System (IADS) and will contain a robust debriefing capability to support warfighter training. Evolution of Legacy System modernization. Provide engineering, mission and A&AS support of Range Threat Systems.		17.135	1.353	7.405
FY 2011 Accomplishments: Develop a capability to train aircrews against Next Generation threats (double digit surface to air missile threat). The system will be deployed as part of an Integrated Air Defense System (IADS) and will contain a robust debriefing capability to support warfighter training. Provide engineering, mission and A&AS support of Range Threat Systems.				
FY 2012 Plans: Continue to develop a capability to train aircrews against Next Generation threats (double digit surface to air missile threats). The system will be deployed as part of an Integrated Air Defense System (IADS) and will contain a robust debriefing capability 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604735F: <i>Combat Training Ranges</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
support warfighter training. Evolution of Legacy System modernization. Provide engineering, mission and A&AS support of Range Threat Systems.			
<i>FY 2013 Plans:</i> Continue to develop a capability to train aircrews against Next Generation threats (double digit surface to air missile threats). The system will be deployed as part of an Integrated Air Defense System (IADS) and will contain a robust debriefing capability to support warfighter training. Evolution of Legacy System modernization. Provide engineering, mission and A&AS support of Range Threat Systems.			
Accomplishments/Planned Programs Subtotals	35.723	8.106	9.222

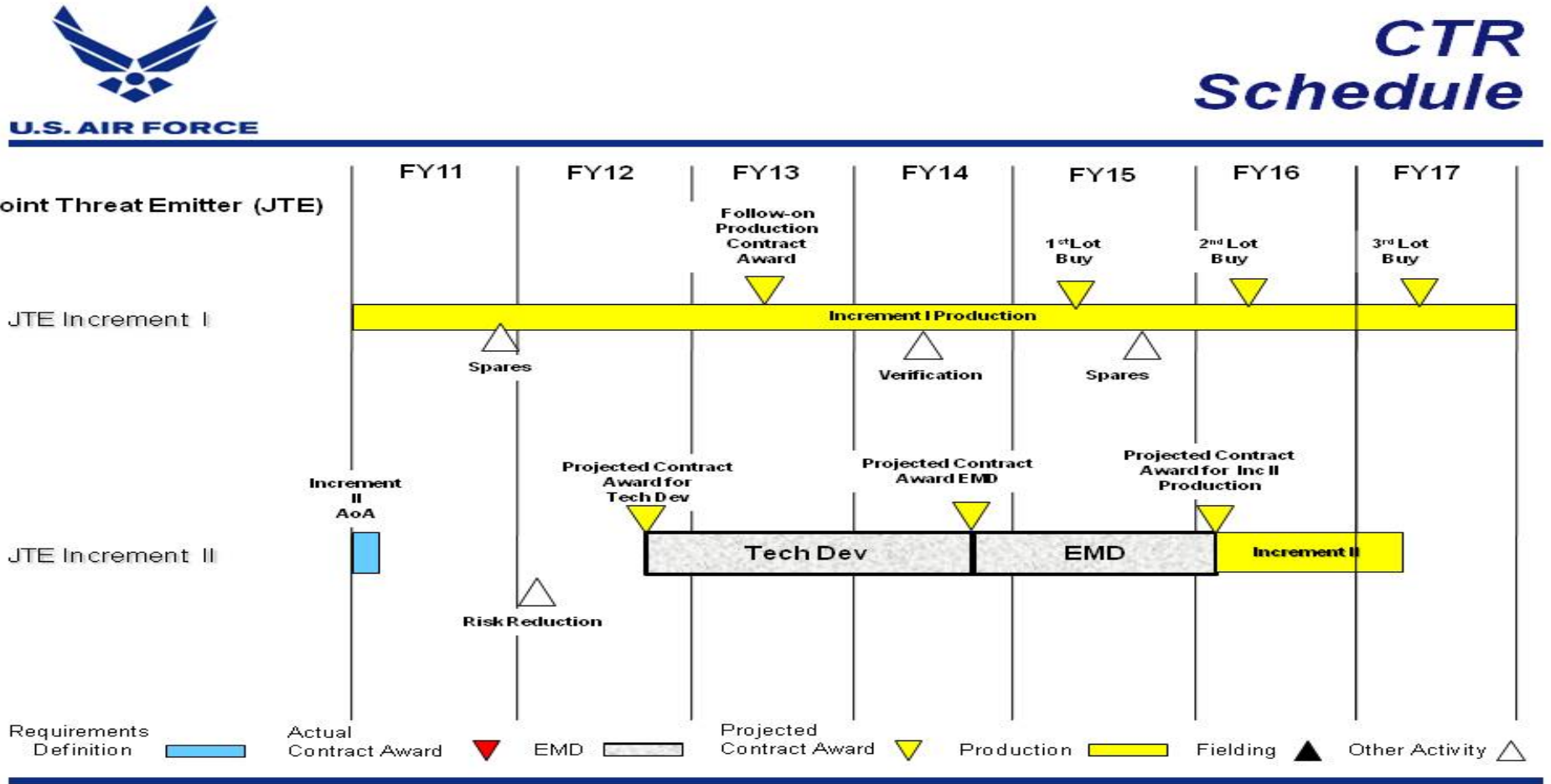
D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0207429F, BP83: <i>Other Procurement, AF, Combat Training Ranges, OPAF BP83</i>	38.081	36.455	17.422	0.000	17.422	35.093	21.843	17.220	16.748	Continuing	Continuing
• 0207429F, OPAF BP86: <i>Initial Spares, OPAF BP86</i>	0.899	0.903	0.934	0.000	0.934	0.658	0.642	0.654	0.665	Continuing	Continuing
• 0207429F, <i>Combat Training Ranges...: 0207429F, Other aircraft procurement, AF, APAF, BP19</i>	15.283	14.867	0.000	0.000	0.000	25.756	26.307	21.724	21.955	Continuing	Continuing
• 0207429F, <i>Initial Spares, APAF BP16: Initial Spares, BP16</i>	1.628	1.466	1.642	0.000	1.642	1.806	1.810	1.784	1.816	Continuing	Continuing

E. Acquisition Strategy
The acquisition strategy is competitive, with cost plus and fixed price contracts.

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.

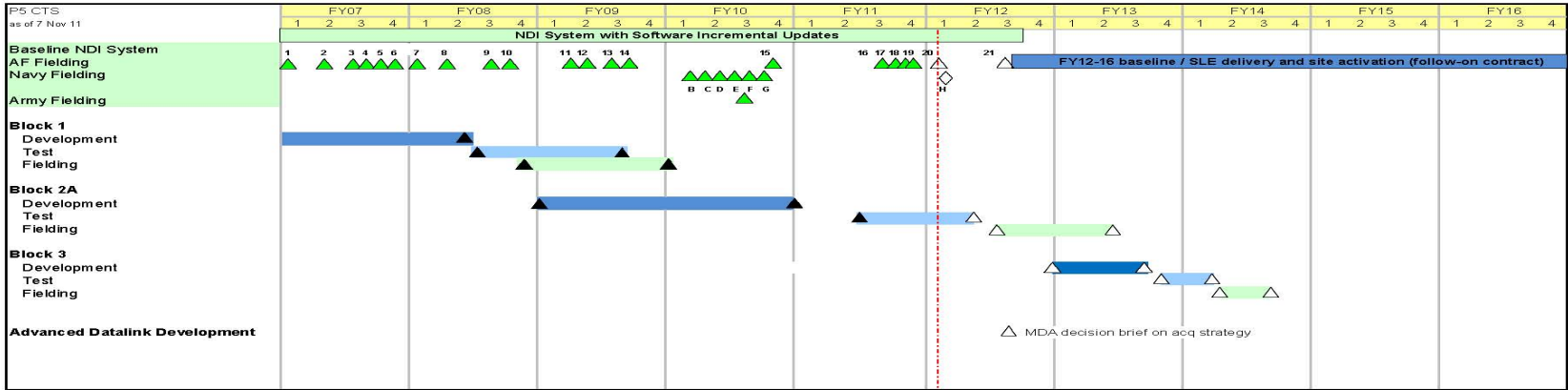
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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604735F: Combat Training Ranges	PROJECT 652286: Combat Training Range Equipment



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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604735F: <i>Combat Training Ranges</i>	PROJECT 652286: <i>Combat Training Range Equipment</i>



- | | | | | |
|---------------------------|-----------------------------|---|--|---|
| ▲ Start/Complete Fielding | ▲ Army Fielding
Ft Bliss | ▲ Navy Fielding
A - Key West (Feb 06)
B - Beaufort
C - Yuma/Miramar/EI Centro
D - Fallon (Limited)
E - Lemoore
F - Cherry Point
G - Oceana
H - Fallon (Phase 2) | ▲ AF Fielding
1 - Luke
2 - Eglin
3 - Seymour Johnson
4 - Langley
5 - Homestead/Key West
6 - Green Flag - West
7 - Mountain Home
8 - Savannah
9 - Gulfport
10 - Shaw
11 - Green Flag (E) | 12 - Tyndall
13 - LITTR/Hill
14 - Montana
15 - Alpena CRTC
16 - Lakenheath
17 - Spangdahlem
18 - Aviano
19 - Volk Field CRTC
20 - Nellis (Shaw)
21 - Eielson |
|---------------------------|-----------------------------|---|--|---|
- Note: In FY12-16, will field baseline and/or encrypted pods to Kadena, Osan, Kunsan, Misawa, Elmendorf, Eielson, and Nellis

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604735F: <i>Combat Training Ranges</i>	PROJECT 652286: <i>Combat Training Range Equipment</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
P5CTS Development	1	2013	4	2014
-- Small Form Factor K Radio (SFFK) Contract annual Award	1	2011	1	2011
-- Range Instrumentation Waveform (RIW) Task 3	1	2011	1	2011
-- Advanced Data Link (ADL) Development	1	2011	4	2011
JTE Development	1	2013	4	2014
-- Increment II Pre-Milestone A Activities	1	2013	1	2014
-- Increment II Technical Development	4	2012	4	2014
-- Increment II EMD	4	2014	1	2016
-- Increment II production	1	2016	2	2017
-- Increment I Second Source Transmitter	4	2011	4	2012
-- Increment I Follow-on Production	2	2013	2	2017
Legacy System Improvements	4	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604740F: <i>Integrated Command & Control Applications</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	0.010	0.010	-	-	-	-	-	-	-	Continuing	Continuing
652523: <i>Product Lines</i>	0.010	0.010	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

In FY12, Project 2523, Product Lines, executed program management functions of assigned programs. It also planned, controlled, organized, staffed and led a diverse team of military, civilian and contracted acquisition and technical professionals that developed leading edge capabilities for the warfighter. Product Lines developed reusable software components based on Service Oriented Architectures, Core Enterprise Services, and Web Based technologies that enabled the Air Force to achieve net centric operations and warfare capability. It provided AF-wide enterprise Command and Control functionality. The components are developed in small increments providing continuous deliveries of increasing capability to the warfighter.

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	0.010	0.010	0.010	-	0.010
Current President's Budget	0.010	0.010	-	-	-
Total Adjustments	-	-	-0.010	-	-0.010
• Congressional General Reductions	-	-	-	-	-
• Congressional Directed Reductions	-	-	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	-	-	-	-	-
• Congressional Directed Transfers	-	-	-	-	-
• Reprogrammings	-	-	-	-	-
• SBIR/STTR Transfer	-	-	-	-	-
• Other Adjustments	-	-	-0.010	-	-0.010

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

	FY 2011	FY 2012	FY 2013
Title: Product Line	0.010	0.010	-
Description: Systems Engineering			
FY 2011 Accomplishments: Provided for Program Manager travel in support of Congressional funded programs.			
FY 2012 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604740F: <i>Integrated Command & Control Applications</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Provides for Program Manager travel in support of Congressional funded programs.			
FY 2013 Plans: N/A			
Accomplishments/Planned Programs Subtotals	0.010	0.010	-

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	Total Cost
• NA: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Complete	Continuing
			Base	OCO	Total					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.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604740F: <i>Integrated Command & Control Applications</i>	PROJECT 652523: <i>Product Lines</i>



Product Lines Schedule

	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Program Management Support	[Purple bar spanning FY11 and FY12]						

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

FY11 PBR

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604740F: <i>Integrated Command & Control Applications</i>	PROJECT 652523: <i>Product Lines</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Program Management Support	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604750F: <i>Intelligence Equipment</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	1.357	0.995	0.803	-	0.803	0.977	1.123	1.130	1.145	Continuing	Continuing
652053: <i>National Air Intel Center</i>	1.357	0.995	0.803	-	0.803	0.977	1.123	1.130	1.145	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Intelligence Equipment (IE) Program Element (PE) performs the engineering development of software, and/or automated information operations techniques to streamline the processing, integration, exploitation, display, and dissemination of strategic and tactical intelligence information. IE provides continuing development and upgrades of threat analysis capabilities to produce integrated, predictive air and space intelligence to enable military operations, force modernization decisions, and policymaking. IE accelerates and increases the accuracy of threat estimates and system descriptions to deployed operational forces. IE also provides clients with accurate, predictive, relevant, and timely intelligence that will support client processes, operational planning, and mission execution. IE develops new or upgraded analysis, modeling and simulation tools focused on intelligence production in support of all source AF operational and developmental functions. Each of the development projects within the IE program portfolio transition technologies to the operational communities through the incremental release of upgraded versions over a period of years as the development projects progress towards the final configuration. IE may reallocate existing resources to support out-of-cycle new/updated warfighter requirements. Requirements for this PE are gathered and prioritized by the Air Force Intelligence, Surveillance, and Reconnaissance Agency (AF ISR Agency). Development of new/improved capabilities to meet the requirements is managed by AFRL/RIED.

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

This program is in Budget Activity 5, System Development and Demonstration (SDD) because the program develops and inserts new technologies into existing systems and models in order to keep existing systems current and affordable while ensuring system integration, interoperability, and utility.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604750F: <i>Intelligence Equipment</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	1.364	0.995	0.801	-	0.801
Current President's Budget	1.357	0.995	0.803	-	0.803
Total Adjustments	-0.007	-	0.002	-	0.002
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.007	-	0.002	-	0.002

Change Summary Explanation

FY11 Congressional General Reduction of 0.007M in Other Adjustment row.

FY13 slight funding increase to support program efforts

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: EW Flagging</p> <p>Description: Continues enhancement of capability to automatically assess and "flag" threat systems that fall outside the detection capability of US DoD airborne self-protection systems (Radar Warning Receivers and Electronic Surveillance Measures).</p> <p>FY 2011 Accomplishments: Delivered second spiral release of EW Flagging. Initiated third spiral release of EW Flagging.</p> <p>FY 2012 Plans: Field Third spiral release of EW Flagging and initiate development of final version of EW Flagging capability.</p> <p>FY 2013 Plans: Will continue development of fourth spiral release of EW Flagging capability</p>	0.925	0.399	0.401
<p>Title: Project Theo</p> <p>Description: Continues capability to query and retrieve information across all available National Air & Space Intelligence Center (NASIC) Corporate Object Repositories (COR), metadata and their supported features; thereby, assisting the Intel Analyst in identifying intelligence gaps and allowing the analyst to nominate intel collection in those areas.</p>	0.074	0.060	0.300

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604750F: <i>Intelligence Equipment</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p><i>FY 2011 Accomplishments:</i> Delivered initial spiral release and initiated second spiral release.</p> <p><i>FY 2012 Plans:</i> Deliver second spiral release and initiate 3rd spiral release.</p> <p><i>FY 2013 Plans:</i> Will deliver third spiral release and initiate development of final version (2.0) of Project Theo.</p>			
<p><i>Title:</i> High Performance Aero Vehicle Modeler</p> <p><i>Description:</i> Continues update of the tool, with a focus on modeling previously unknown airframes, that provides detailed engineering assessments of threat aircraft performance and characteristics.</p> <p><i>FY 2011 Accomplishments:</i> Completed initial study and initiated first spiral release.</p> <p><i>FY 2012 Plans:</i> Deliver first spiral release, initiate and deliver second spiral release. Initiate development of final version of HP-AVM capability.</p> <p><i>FY 2013 Plans:</i> Will field final version (3) of HP-AVM capability.</p>	0.358	0.536	0.040
<p><i>Title:</i> Space Air & Terrestrial Modeling and Simulation Initiative</p> <p><i>Description:</i> Initiates SATM&S (Space, Air, & Terrestrial Modeling & Simulation Initiative) to add a space communications modeling capability to the previously fielded terrestrial communications focused TEL-SCOPE tool. This effort will complete modeling of an adversary's total C4ISR system and assist nomination of terrestrial and space targets.</p> <p><i>FY 2013 Plans:</i> Will initiate development of initial spiral release.</p>	-	-	0.062
Accomplishments/Planned Programs Subtotals	1.357	0.995	0.803

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

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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 5: <i>Development & Demonstration (SDD)</i>	PE 0604750F: <i>Intelligence Equipment</i>

E. Acquisition Strategy

Requirements for new / upgraded intelligence analysis tools are gathered and prioritized by the Air Force Intelligence, Surveillance and Reconnaissance Agency (AF ISR Agency, formerly the Air Intelligence Agency). Development of capabilities to meet those requirements is managed by the AF Research Laboratory (Rome Research Site). Prototype products (usually software), once evaluated by the users, are fielded in incremental capability spirals. All major contracts within this project are awarded after full and open competition.

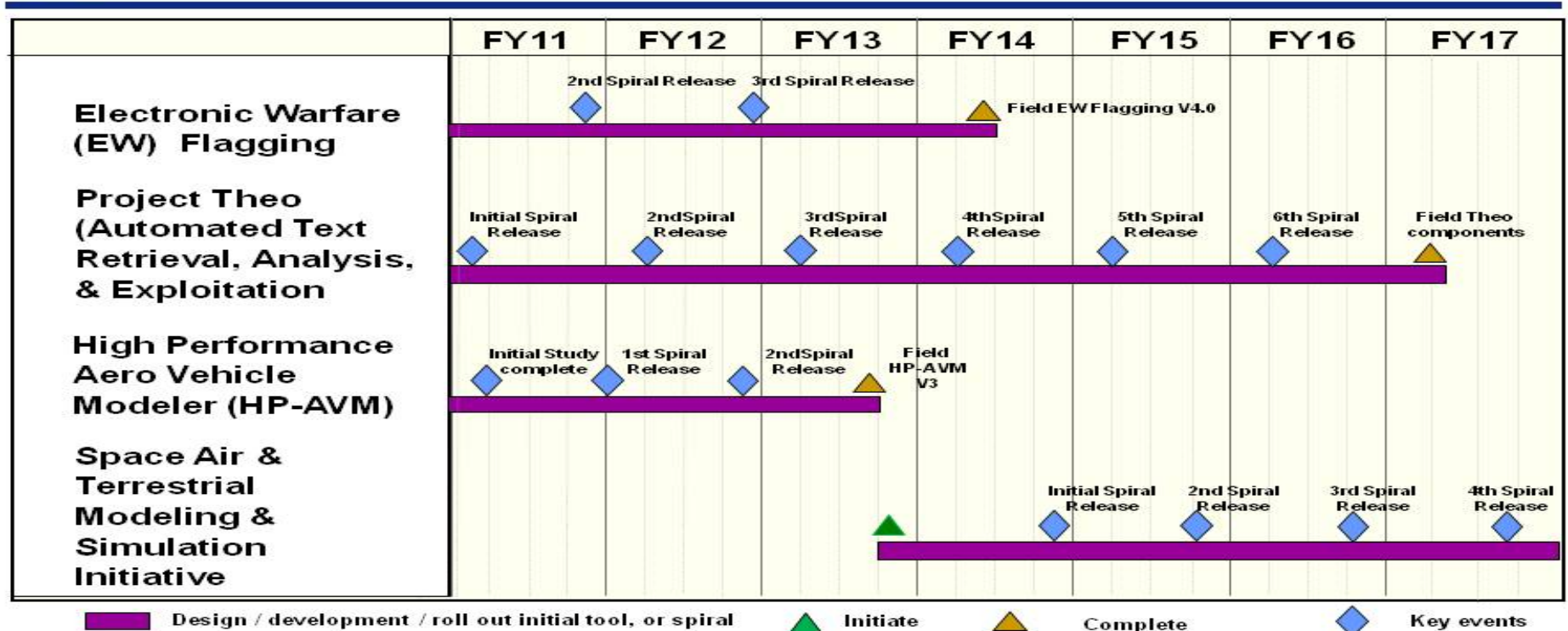
F. Performance Metrics

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.

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 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604750F: Intelligence Equipment	PROJECT 652053: National Air Intel Center



Intelligence Equipment Program Schedule



FY13 PB R-Docs

Depicted by installation/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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604750F: <i>Intelligence Equipment</i>	PROJECT 652053: <i>National Air Intel Center</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Continue Electronic Warfare (EW) Flagging	1	2011	2	2014
Second Spiral Release - EW Flagging	4	2011	4	2011
Third Spiral Release - EW Flagging	4	2012	4	2012
Field EW Flagging V4.0	2	2014	2	2014
Continue Project Theo (Automated Text Retrieval, Analysis, and Exploitation Capability)	1	2011	2	2017
Initial Spiral Release - Project Theo	1	2011	1	2011
Second Spiral Release - Project Theo	2	2012	2	2012
Third Spiral Release - Project Theo	2	2013	2	2013
Fourth Spiral Release - Project Theo	2	2014	2	2014
Fifth Spiral Release - Project Theo	2	2015	2	2015
Sixth Spiral Release - Project Theo	2	2016	2	2016
Field Project Theo Componenets	2	2017	2	2017
Complete High Performance Aero Vehicle Modeler	1	2011	3	2013
Complete Initial Study - HP-AVM	1	2011	1	2011
First Spiral Release - HP-AVM	1	2012	1	2012
Second Spiral Release - HP-AVM	4	2012	4	2012
Field HP-AVM V3	3	2013	3	2013
Initiate Space Air & Terrestrial Modeling & Simulation (SAT M&S) Initiative	4	2013	4	2017
Initial Spiral Release - SAT M&S	4	2014	4	2014
Second Spiral Release - SAT M&S	4	2015	4	2015
Third Spiral Release - SAT M&S	4	2016	4	2016
Fourth Spiral Release - SAT M&S	3	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604800F: <i>Joint Strike Fighter EMD</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	931.599	1,387.926	1,210.306	-	1,210.306	1,019.035	635.732	387.694	155.591	Continuing	Continuing
653831: <i>Joint Strike Fighter</i>	931.599	1,387.926	1,192.506	-	1,192.506	985.035	602.732	357.694	155.591	Continuing	Continuing
653832: <i>JSF DEPLOYABILITY AND SUITABILITY ENHANCEMENT</i>	-	-	17.800	-	17.800	34.000	33.000	30.000	-	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 Joint Strike Fighter (JSF) program will develop and deploy a family of highly common, affordable next generation, stealthy, multi-role strike fighter aircraft that meets the needs of the USN, USAF, USMC and allies with maximum commonality among the variants, consistent with National Disclosure Policy, to minimize life cycle costs. This is a joint program with no executive service. Navy and Air Force each provide approximately equal shares of annual funding to the program. The United Kingdom and seven other international countries, and three Foreign Military Sales cases are participants in the JSF program. This program is funded under System Development and Demonstration (SDD) because it encompasses system development and demonstration of new end items prior to a production approval decision. The SDD Budget funds a total quantity of 20 RDT&E test articles to include 6 ground test articles and 14 flight test articles for Navy and Air Force use.

BA5 - This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604800F: <i>Joint Strike Fighter EMD</i>
--	--

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	883.773	1,387.926	1,198.293	-	1,198.293
Current President's Budget	931.599	1,387.926	1,210.306	-	1,210.306
Total Adjustments	47.826	-	12.013	-	12.013
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-85.000	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-29.274	-			
• Other Adjustments	162.100	-	12.013	-	12.013

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

Project: 653831: *Joint Strike Fighter*

Congressional Add: *F136 Propulsion System*

Congressional Add Subtotals for Project: 653831

Congressional Add Totals for all Projects

	FY 2011	FY 2012
	69.288	-
	69.288	-
	69.288	-

Change Summary Explanation

FY11 adjustments for Congressional Rescission of -\$85.000; SBIR of -\$29.274; Congressional General Reductions -\$5.337 and Congressional Directed Transfers of +\$167.437

FY13 adjustments account for realignments of funding for JSF Deployability and Suitability Enhancement effort, which performs earlier execution of F-35 capability enhancements necessary for war-fighter use in FY15, with full realization of improvements by FY17.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604800F: <i>Joint Strike Fighter EMD</i>	PROJECT 653831: <i>Joint Strike Fighter</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
653831: <i>Joint Strike Fighter</i>	931.599	1,387.926	1,192.506	-	1,192.506	985.035	602.732	357.694	155.591	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Note: Total cost including USN, International partner contributions and USAF funding are: FY11 \$2,373.851M, FY12 \$2,850.735M and FY13 \$2,835.601M.

A. Mission Description and Budget Item Justification

The F-35 Lightning II Joint Strike Fighter program will develop and field a family of 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. The program shown here reflects USN, USMC, USAF, and International Partner funding. The top-line Program Element reflects USAF F-35A Conventional Take-Off and Landing (CTOL) budgetary information, only; however, funding at the accomplishment/planned program level is reported in total (all services and partners) as the activities support all aircraft variants. Within the Navy contribution is a roughly equal contribution of annual funding by the USN and USMC.

The SDD Budget funds a total quantity of 20 RDT&E test articles to include 6 ground test articles and 14 flight test articles for Navy and Air Force use. The following fiscal year phasing of the flight test aircraft reflects the schedule first flight of each flight test asset or production line roll out of each ground test asset:

- FY07: 1 Conventional Take Off and Landing (CTOL) flight test article
- FY08: 1 Short Take Off and Vertical Landing ((STOVL) flight test article); 1 STOVL ground test article
- FY09: 1 STOVL flight test article; 2 CTOL ground test articles
- FY10: 6 flight test articles: 3 CTOL, 2 STOVL, 1 Carrier Variants (CV); 3 ground test articles: 1 STOVL, 2 CV
- FY11: 4 flight test articles: 1 CTOL, 1 STOVL, 2 CV
- FY12: 1 CV flight test article
- FY13: 0 flight test articles

BA5 - This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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

	FY 2011	FY 2012	FY 2013
Title: System Development and Demonstration	1,519.470	1,781.553	1,792.793

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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604800F: <i>Joint Strike Fighter EMD</i>	PROJECT 653831: <i>Joint Strike Fighter</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Description: SDD execution of the Air System (Lockheed Martin) including International Commonality Effort; includes airframe, vehicle and mission systems, autonomic logistics, systems engineering & test efforts.</p> <p>FY 2011 Accomplishments: Continued SDD execution of the Air System with Lockheed Martin, including International Commonality Effort which includes airframe, vehicle systems, mission systems, autonomic logistics, systems engineering, and integrated test efforts.</p> <p>FY 2012 Plans: Continue SDD execution of the Air System with Lockheed Martin, including International Commonality Effort which includes airframe, vehicle systems, mission systems, autonomic logistics, systems engineering, and integrated test efforts.</p> <p>FY 2013 Plans: Continue SDD execution of the Air System with Lockheed Martin, including International Commonality Effort which includes airframe, vehicle systems, mission systems, autonomic logistics, systems engineering, and integrated test efforts.</p>				
<p>Title: F135 Propulsion System</p> <p>Description: SDD execution of the F135 Propulsion System (Pratt & Whitney) using International Commonality Effort; includes testing, autonomic logistics, integration & performing technology maturation efforts.</p> <p>FY 2011 Accomplishments: Continued SDD execution of the F135 Propulsion System with Pratt & Whitney that included engine testing, autonomic logistics, integration and performing technology maturation efforts.</p> <p>FY 2012 Plans: Continue SDD execution of the F135 Propulsion System with Pratt & Whitney that includes engine testing, autonomic logistics, integration and performing technology maturation efforts.</p> <p>FY 2013 Plans: Continue SDD execution of the F135 Propulsion System with Pratt & Whitney that includes engine testing, autonomic logistics, integration and performing technology maturation efforts.</p>		375.628	360.000	359.618
<p>Title: Systems Engineering</p> <p>Description: SDD Systems Engineering (SE) including systems operations requirements analysis, program integration, requirements integration, and interoperability support.</p> <p>FY 2011 Accomplishments:</p>		39.345	45.457	28.063

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Continued SDD Systems Engineering that includes systems operations requirements analysis, program integration, requirements integration, and interoperability support. FY 2012 Plans: Continue SDD Systems Engineering that includes systems operations requirements analysis, program integration, requirements integration, and interoperability support. FY 2013 Plans: Continue SDD Systems Engineering that includes systems operations requirements analysis, program integration, requirements integration, and interoperability support.				
Title: Development Test & Evaluation Description: Government Development Test and Evaluation (DT&E)/Operational Testing in support of first flight of test aircraft. Elements of DT&E include preparation for flight testing, weapons integration testing. FY 2011 Accomplishments: Continued government Development Test and Evaluation (DT&E)/Operational Evaluation. Continued flight sciences testing of CTOL, STOVL, and CV variants. Exceeded planned block 1 Mission Systems test point goals for 2011. Elements of DT&E included flight science testing to speeds of 1.6 Mach, weapons integration testing, and sensor component capabilities testing. FY 2012 Plans: Continue government Development Test and Evaluation (DT&E)/Operational Testing. Continue flight sciences testing of CTOL, STOVL, and CV variants to include Block 2A. FY 2013 Plans: Continue DT&E/Operational testing. Continue flight sciences testing of CTOL, STOVL, and CV variants to include initial Block 2B.		183.951	323.151	374.258
Title: Development Support Description: SDD Support efforts for airframe, air vehicle systems, mission systems, weapons integration, mission support, and autonomic logistics development activities. FY 2011 Accomplishments: Continued SDD Support efforts for airframe, air vehicle systems, mission systems, weapons integration, mission support, and autonomic logistics development activities. FY 2012 Plans:		109.293	237.128	146.887

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Continue SDD Support efforts for airframe, air vehicle systems, mission systems, weapons integration, mission support, and autonomic logistics development activities. FY 2013 Plans: Continue SDD Support efforts for airframe, air vehicle systems, mission systems, weapons integration, mission support, and autonomic logistics development activities.				
Title: Program Management Support Description: Management support services, civilian pay, travel, engineering technical services, and studies analyses and evaluations in support of program objectives. FY 2011 Accomplishments: Continued management support services, travel, engineering technical services, and studies analyses and evaluations in support of program objectives. FY 2012 Plans: Continue management support services, travel, engineering technical services, and studies analyses and evaluations in support of program objectives. Initiate use of RDT&E for civilian pay. FY 2013 Plans: Continue management support services, travel, engineering technical services, and studies analyses and evaluations in support of program objectives. Continue use of RDT&E for civilian pay.		76.876	103.447	113.875
Title: Follow-on Development Description: Follow-on Development Block 4 capabilities to include logistics, weapons, sensors, survivability, and upgrades required to support F-35 variants. Efforts will support services and partner nations commencing in 2015 and will integrate urgent operationally relevant requirements post-Initial Operational Capability (IOC). Funding shown does not include USAF funding which is in RDT&E PE 27142F. FY 2013 Plans: Initiate disciplined systems engineering, requirements decomposition, and life cycle costs 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 Assessment of F-35. Mature validated Block 4 FOD capabilities to appropriate Technical Readiness Levels (TRLs) to reduce integration risk for inclusion into the Engineering Management Development (EMD) program planned to begin in FY 2015.		-	-	2.307
Accomplishments/Planned Programs Subtotals		2,304.563	2,850.736	2,817.801

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Other Service Funding Adjustment	1,442.252	1,462.810	1,625.295
Air Force Subtotals	862.311	1,387.926	1,192.506

	FY 2011	FY 2012
Congressional Add: F136 Propulsion System	69.288	-
FY 2011 Accomplishments: Continued F136 Propulsion System development effort by the General Electric/ Rolls Royce Fighter Engine Team (GE/RR FET)		
Congressional Adds Subtotals	69.288	-

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 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
• 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
• 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	5.381
• OPN/4267: <i>JSF Logistics Information Systems (ALIS)</i>	0.000	0.000	3.826	0.000	3.826	4.869	5.592	5.647	5.744	0.000	16.075
• 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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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
• RDT&E; PE 27142F: <i>JSF Follow-on Development</i>	0.000	9.967	8.117	0.000	8.117	50.084	104.866	132.174	229.912	0.000	287.124
• 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
• 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

The System Development and Demonstration program consists of a cost-reimbursement contract awarded to Lockheed Martin Aeronautics Company to develop the F-35 Air System, consisting of three aircraft variants and its associated logistics support system, for the U.S. Services and international participants. Similarly, a cost-reimbursement contract was awarded to Pratt & Whitney to develop the F135 propulsion system. Ground and flight testing will be conducted during development to accomplish validation and verification, with the extensive use of modeling and simulation to offset the risk of this large, complex, and concurrent lifecycle program. A comprehensive logistics support environment, including an integrated training system for aircrew, maintenance, and support personnel, is also being developed.

On 25 April 2011, the Department of Defense terminated the development of the General Electric Rolls-Royce Fighter Engine Team F136 propulsion system.

The F-35 Program has made international involvement a key element of the acquisition strategy. This includes international partnership in the development, production, and sustainment phases of the lifecycle. Additional international participation includes Foreign Military Sales arrangements.

In Fiscal Year (FY) 2007, separate cost-type contracts were awarded to Lockheed Martin Aeronautics Company and Pratt & Whitney to begin low rate initial production for F-35 air vehicles, propulsion systems, and sustainment for the fielded systems. Transition to fixed-price-type contracts occurred with the fourth low rate lot. To

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<p>provide logistics support for delivered aircraft, Performance-Based Logistics cost-type contracts will be awarded to Lockheed Martin Aeronautics Company and Pratt & Whitney.</p> <p>At the completion of Low Rate Initial Production, a Defense Acquisition Board review, and Milestone Decision Authority approval, the F-35 Program will enter Full Rate Production. Fixed-price procurement contracts will be awarded for F-35 air vehicles and propulsion systems for the U.S. Services and international participants. Multiyear procurement authority for the F-35 Air System will be requested for Full Rate Production. Concurrently, multiple-year, fixed-price-type Performance Based Logistics contracts for sustainment will be executed to support multi-Service and multi-national requirements.</p> <p>E. Performance Metrics</p> <p>Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force										DATE: February 2012			
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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
Lockheed Martin - SDD	C/CPAF	Lockheed Martin:Ft. Worth, TX	27,462.760	1,777.553	Nov 2011	1,800.793	Oct 2012	-		1,800.793	2,911.701	33,952.807	27,461.987
Lockheed Martin - IDIQ D0022	SS/Various	Lockheed Martin:Ft. Worth, TX	11.572	4.000	Oct 2011	-		-		-	0.000	15.572	0.000
Lockheed Martin - IDIQ D0009	SS/Various	Lockheed Martin:Ft. Worth, TX	16.759	-		-		-		-	0.000	16.759	0.000
Lockheed Martin - BOA	SS/Various	Lockheed Martin:Ft. Worth, TX	3.511	-		-		-		-	0.000	3.511	0.000
Pratt & Whitney - SDD	C/CPAF	Pratt & Whitney:Hartford, CT	6,906.621	360.000	Oct 2011	359.618	Dec 2012	-		359.618	772.503	8,398.742	7.480
Pratt & Whitney - Close Out Contract C0132	SS/CPFF	Pratt & Whitney:Hartford, CT	1.364	-		-		-		-	0.000	1.364	0.000
Pratt & Whitney - CDP Close Out Contract C0050	SS/CPFF	Pratt & Whitney:Hartford, CT	2.211	-		-		-		-	0.000	2.211	0.000
Pratt & Whitney - BOA	SS/Various	Pratt & Whitney:Hartford, CT	35.983	-		-		-		-	0.000	35.983	0.000
Pratt & Whitney - IDIQ	SS/Various	Pratt & Whitney:Hartford, CT	10.925	-		-		-		-	0.000	10.925	0.000
General Electric - SDD	SS/CPAF	FET:Cincinnati, OH	2,155.573	-		-		-		-	0.000	2,155.573	2,466.974
General Electric - IDIQ D0009	SS/Various	FET:Cincinnati, OH	0.264	-		-		-		-	0.000	0.264	0.000
General Electric - IDIQ D0074	SS/Various	FET:Cincinnati, OH	4.175	-		-		-		-	0.000	4.175	0.000
General Electric - F136 Transition	SS/Various	FET:Cincinnati, OH	100.400	-		-		-		-	0.000	100.400	0.000
General Electric - BOA	SS/Various	FET:Cincinnati, OH	5.548	-		-		-		-	0.000	5.548	0.000
General Electric - Phase IIIb	SS/Various	FET:Cincinnati, OH	382.753	-		-		-		-	0.000	382.753	0.000
Systems Engineering	Various	Various:Various,	289.956	45.457	Oct 2011	20.063	Nov 2012	-		20.063	89.855	445.331	0.000
Lockheed Martin - Follow-on Development	SS/CPAF	Lockheed Martin:Ft. Worth, TX	-	-		1.860	Nov 2012	-		1.860	396.902	398.762	0.000
Pratt & Whitney - Follow-on Development	SS/CPAF	Pratt & Whitney:Hartford, CT	-	-		-		-		-	0.000	0.000	0.000

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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
Systems Engineering - Follow-on Development	Various	Various:Various,	-	-		0.447	Oct 2012	-		0.447	43.099	43.546	0.000
Subtotal			37,390.375	2,187.010		2,182.781		-		2,182.781	4,214.060	45,974.226	29,936.441

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
AFFTC/Eglin	Various	Various:Various,	102.435	14.929	Oct 2011	15.340	Oct 2012	-		15.340	37.168	169.872	0.000
ASC/AFRL	Various	ASC/AFRL:Wright Patterson AFB, OH	55.685	7.625	Oct 2011	8.255	Oct 2012	-		8.255	13.938	85.503	0.000
ASC Civ Pay	Various	ASC:Wright Patterson AFB, OH	-	19.554	Oct 2011	-		-		-	0.000	19.554	0.000
Bolling AFB	Various	Bolling AFB:Washington DC	6.775	-		-		-		-	0.000	6.775	0.000
DMEA	Various	DMEA:Wright Patterson AFB:Dayton, OH	5.630	25.500	Oct 2011	1.400	Nov 2012	-		1.400	0.800	33.330	0.000
ESC	Various	ESC:Hanscom AFB, MA	7.103	0.377	Oct 2011	0.511	Nov 2012	-		0.511	1.585	9.576	0.000
AEDC/Fuel	Various	Various:Various,	143.754	58.764	Oct 2011	23.266	Nov 2012	-		23.266	39.948	265.732	0.000
NADEP Jacksonville	Various	NADEP:Jacksonville, FL	7.880	1.985	Oct 2011	1.757	Oct 2012	-		1.757	1.800	13.422	0.000
Miscellaneous	Various	Various:Various,	226.696	21.298	Oct 2011	21.332	Nov 2012	-		21.332	30.343	299.669	0.000
NAWC China Lake	Various	Various:Ridge Crest, CA	96.177	30.641	Oct 2011	24.833	Nov 2012	-		24.833	56.204	207.855	0.000
NAWC TSD	Various	Various:Orlando, FL	9.680	2.362	Oct 2011	0.771	Nov 2012	-		0.771	3.555	16.368	0.000
NAWC Patuxent River	Various	NAWC AD:Patuxent River, MD	299.158	53.484	Oct 2011	42.672	Nov 2012	-		42.672	122.425	517.739	0.000
NSWC	Various	Various:Various,	3.813	0.572	Oct 2011	0.308	Nov 2012	-		0.308	0.640	5.333	0.000
SPAWAR	Various	Various:Various,	8.434	0.038	Oct 2011	0.032	Nov 2012	-		0.032	0.138	8.642	0.000

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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
SBIR Technology Insertion Congressional Add	Various	Various:Various,	24.187	-		-		-		-	0.000	24.187	0.000
Misc/Other Follow-on Development (FoD)	Various	Various:Various,	-	-		6.410	Oct 2012	-		6.410	86.994	93.404	0.000
NAWC/China Lake FoD	Various	Various:Various,	-	-		-		-		-	0.000	0.000	0.000
NAWC Patuxent River FoD	Various	Various:Patuxent River,	-	-		-		-		-	0.000	0.000	0.000
Subtotal			997.407	237.129		146.887		-		146.887	395.538	1,776.961	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
NAWC Patuxent	Various	NAWC AD:Patuxent River, MD	301.964	130.731	Oct 2011	115.186	Nov 2012	-		115.186	304.105	851.986	0.000
NAWC China Lake	Various	NAWC WD:Ridgecrest, CA	26.630	11.637	Oct 2011	5.829	Nov 2012	-		5.829	11.972	56.068	0.000
Edwards AFB	Various	Edwards AFB:Edwards AFB, CA	340.541	94.841	Oct 2011	82.500	Nov 2012	-		82.500	228.811	746.693	0.000
Other (including Classified PIDs)	Various	Various:Various,	26.080	26.441	Oct 2011	56.449	Nov 2012	-		56.449	170.510	279.480	0.000
JITC	Various	Various:Various	-	-		-		-		-	0.000	0.000	0.000
WEPS/Eglin	Various	WEPS:Eglin AFB, FL	27.829	2.600	Oct 2011	-		-		-	0.000	30.429	0.000
OT - AFOTEC/AFFTC	Various	Various:Various,	93.604	52.200	Oct 2011	108.518	Nov 2012	-		108.518	401.683	656.005	0.000
OT - JITC/OPTEV	Various	Various:Various,	6.211	4.700	Oct 2011	5.776	Oct 2012	-		5.776	5.926	22.613	0.000
Subtotal			822.859	323.150		374.258		-		374.258	1,123.007	2,643.274	0.000

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604800F: <i>Joint Strike Fighter EMD</i>	PROJECT 653831: <i>Joint Strike Fighter</i>
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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
Business Integration - Cost - ACT I	SS/CPFF	ACT I:Arlington, VA	5.700	3.418	Oct 2011	3.049	Dec 2012	-		3.049	13.798	25.965	0.000
Security - Mantech	C/TBD	Mantech:Arlington, VA	50.978	8.366	Oct 2011	11.046	Dec 2012	-		11.046	49.993	120.383	0.000
Autolog - SEIT - DRC	C/CPFF	DRC:Arlington, VA	5.916	-		-		-		-	0.000	5.916	0.000
Chief Engineer - First Principles	C/CPFF	First Principles:Arlington, VA	3.016	1.936	Oct 2011	1.836	Nov 2012	-		1.836	8.308	15.096	0.000
ASC Civilian Pay	Various	ASC:Wright Patterson AFB, OH	-	3.500	Oct 2011	35.724	Oct 2012	-		35.724	150.762	189.986	0.000
Operations - Wyle	C/CPFF	Wyle:Arlington, VA	90.871	27.418	Oct 2011	23.305	Dec 2012	-		23.305	109.904	251.498	0.000
Operations - SAFTAS	C/CPAF	SAFTAS:Arlington, VA	101.734	26.600	Oct 2011	12.867	Dec 2012	-		12.867	71.197	212.398	0.000
Operations - Stanley	C/CPAF	Stanley:Arlington, VA	159.020	27.940	Oct 2011	22.051	Dec 2012	-		22.051	101.523	310.534	0.000
Operations- TBD	C/CPAF	TBD:Arlington, VA	-	-		-		-		-	0.000	0.000	0.000
GE F136 Congressional Studies	Various	Various:Various,	0.800	-		-		-		-	0.000	0.800	0.000
Travel and Misc	Various	Various:Various,	14.499	4.269	Oct 2011	3.997	Oct 2012	-		3.997	17.225	39.990	0.000
Subtotal			432.534	103.447		113.875		-		113.875	522.710	1,172.566	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
Cost Category Subtotals			39,643.175	2,850.736		2,817.801		-		2,817.801	6,255.315	51,567.027	29,936.441
Other Service Funding Adjustment				1,462.810		1,625.295		-		1,625.295			
Project Cost Totals			39,643.175	1,387.926		1,192.506		-		1,192.506	6,255.315	51,567.027	29,936.441

Remarks
 Remarks: Prior Years reflect \$16,517.487M USAF/\$16,290.096M USN/\$4,461.741M International/Total \$37,269.324M
 FY 2011 reflects \$931.599M USAF/\$654.198M USN/\$602.142M USMC/\$185.912M International/Total \$2,373.851M
 FY 2012 reflects \$1,387,926 USAF/\$658.549M USN/\$651.786M USMC/\$152.474M International/Total \$2,850.735M
 FY 2013 reflects \$1,210.306M USAF/\$743,926M USN/\$737,149M USMC/\$144,220M International/Total \$2,835.601M

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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 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604800F: <i>Joint Strike Fighter EMD</i>			PROJECT 653831: <i>Joint Strike Fighter</i>			
	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract

NOTE: Totals may not add correctly due to rounding.

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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 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

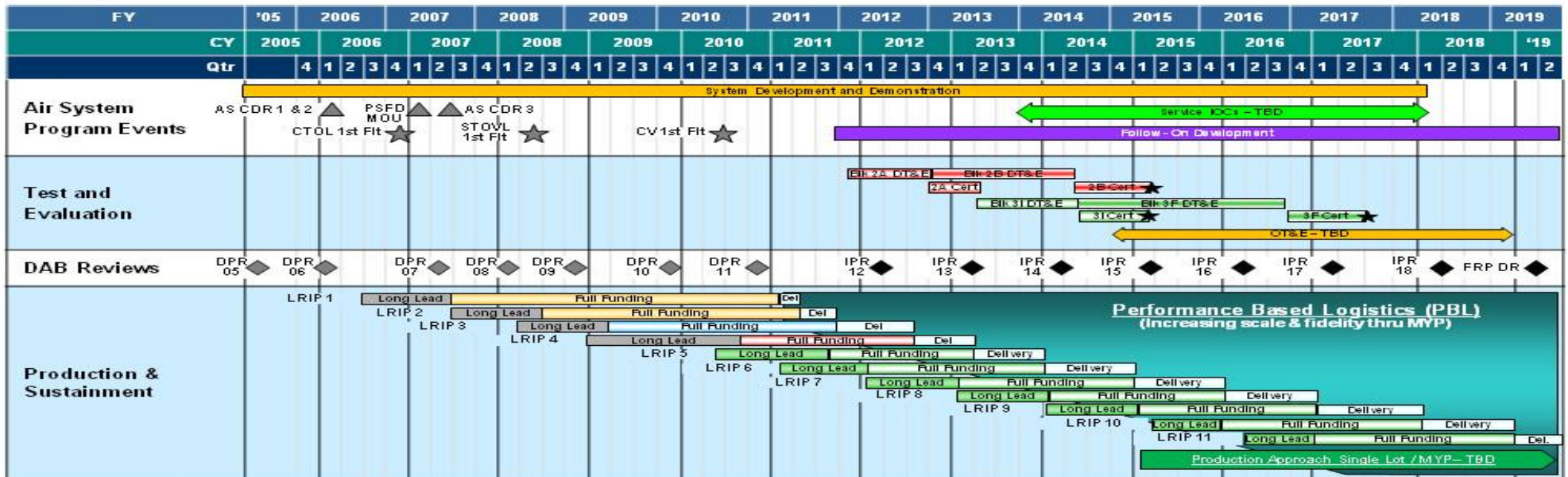
PE 0604800F: Joint Strike Fighter EMD

PROJECT

653831: Joint Strike Fighter



Top Level Schedule Distro A



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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604800F: <i>Joint Strike Fighter EMD</i>	PROJECT 653831: <i>Joint Strike Fighter</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Acquistion Milestones: Services Initial Operational Capability	1	2014	4	2017
Acquisitional Milestones: Full Rate Production Decision Review	4	2017	4	2017
Acquisition Milestones: Follow-on Development	2	2012	4	2017
Contract Award: LRIP 5 Full Funding	4	2011	4	2011
Contract Award: LRIP 6 Long Lead	4	2011	4	2011
Contract Award: LRIP 6 Full Funding	2	2012	2	2012
Contract Award: LRIP 7 Long Lead	2	2012	2	2012
Contract Award: LRIP 7 Full Funding	1	2013	1	2013
Contract Award: LRIP 8 Long Lead	2	2013	2	2013
Contract Award: LRIP LRIP 8 Full Funding	1	2014	1	2014
Contract Award: LRIP 9 Long Lead	2	2014	2	2014
Contract Award: LRIP 9 Full Funding	1	2015	1	2015
Contract Award: LRIP 10 Long Lead	3	2015	1	2016
Contract Award: LRIP 10 Full Funding	2	2016	4	2017
Contract Award: LRIP 11 Long Lead	3	2016	2	2017
Contract Award: LRIP 11 Full Funding	2	2017	4	2017
Production Deliveries: LRIP 1 Delivery (APAF)	2	2011	3	2011
Production Deliveries: LRIP 2 Delivery (APAF, APN)	3	2011	4	2011
Production Deliveries: LRIP 3 Delivery (APAF, APN, Intl Production)	1	2012	4	2012
Production Deliveries: LRIP 4 Delivery (APAF, APN, Intl Production)	4	2012	2	2013
Production Deliveries: LRIP 5 Delivery (APAF, APN, Intl Production)	3	2013	2	2014
Production Deliveries: LRIP 6 Delivery (APAF, APN, Intl Production)	2	2014	2	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604800F: <i>Joint Strike Fighter EMD</i>	PROJECT 653831: <i>Joint Strike Fighter</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Production Deliveries: LRIP 7 Delivery (APAF, APN, Intl Production)	2	2015	2	2016
Production Deliveries: LRIP 8 (APAF, APN, Intl Production)	2	2016	2	2017
Production Deliveries: LRIP 9 (APAF, APN, Intl Production)	2	2017	4	2017
Production Deliveries: LRIP 10 (APAF, APN, Intl Production)	4	2017	4	2017
Production Deliveries: LRIP 11 (APAF, APN, Intl Production)	4	2017	4	2017
Sustainment: Performance Based Logistics (PBL)	2	2011	4	2017
Test & Evaluation: Block 2A	2	2012	2	2013
Test & Evaluation: Block 2B	2	2013	4	2014
Test & Evaluation: Block 3I	1	2014	4	2014
Test & Evaluation: Block 3F	1	2015	4	2016
Test & Evaluation: Initial Operational Test and Evaluation (IOT&E)	1	2015	4	2017
System Development Reviews: DAB Program Review FY11 (DPR)	2	2011	2	2011
System Development Reviews: Interim Program Review (IPR) FY12	2	2012	2	2012
System Development Reviews: Interim Program Review (IPR) FY13	2	2013	2	2013
System Development Reviews: Interim Program Review (IPR) FY14	2	2014	2	2014
System Development Reviews: Interim Program Review (IPR) FY15	2	2015	2	2015
System Development Reviews: Interim Program Review (IPR) FY16	2	2016	2	2016
System Development Reviews: Interim Program Review (IPR) FY17	2	2017	2	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604800F: <i>Joint Strike Fighter EMD</i>	PROJECT 653832: <i>JSF DEPLOYABILITY AND SUITABILITY ENHANCEMENT</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
653832: <i>JSF DEPLOYABILITY AND SUITABILITY ENHANCEMENT</i>	-	-	17.800	-	17.800	34.000	33.000	30.000	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Funds enhancements to the suitability and maintainability of the air system such as Deployable Autonomic Logistics Information System (ALIS), decentralized maintenance capabilities, low observable (LO) maintenance enhancements, security architecture updates, and integrated training simulators. These enhancements will provide vital on-demand support to the war-fighter within a deployed environment and are not funded via the existing SDD program or tied to Block 4 OFP development. Funding will result in achieving targeted suitability, maintainability, and affordability returns employing F-35 in deployed or austere locations.

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

	FY 2011	FY 2012	FY 2013
Title: Initial development of suitability and deployability enhancements	-	-	17.800
Description: Develop and acquire enhancements to the suitability and maintainability of the air system, such as Deployable ALIS, decentralized maintenance capabilities, LO maintenance enhancements, security architecture updates, and integrated training simulators.			
FY 2013 Plans: Initiate disciplined systems engineering, requirements decomposition, technology maturation, and development of suitability and deployability enhancements.			
Accomplishments/Planned Programs Subtotals	-	-	17.800

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 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

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604800F: <i>Joint Strike Fighter EMD</i>	PROJECT 653832: <i>JSF DEPLOYABILITY AND SUITABILITY ENHANCEMENT</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: <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
• 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	5.381
• OPN/4267: <i>JSF Logistics Information Systems (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 027142F/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 2724146N/initial Spares: <i>Joint Striker 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
• 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
• RDT&E; PE 0207142F: <i>JSF Follow-on Development</i>	0.000	9.967	8.117	0.000	8.117	50.084	104.866	132.174	229.912	0.000	287.124
• 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
• OPAF; PE 0207152F: <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

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604800F: <i>Joint Strike Fighter EMD</i>	PROJECT 653832: <i>JSF DEPLOYABILITY AND SUITABILITY ENHANCEMENT</i>
<u>D. Acquisition Strategy</u> Implement JSF Joint Executive Steering Board (JESB)/Configuration Steering Board (CSB) approved enhancements to existing capabilities through existing contracts using the engineering change proposal process. When appropriate, new cost type contracts may be established.		
<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-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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604800F: <i>Joint Strike Fighter EMD</i>	PROJECT 653832: <i>JSF DEPLOYABILITY AND SUITABILITY ENHANCEMENT</i>
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Product Development (\$ 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			
Prime LM Deployability & Suitability Enhancements	TBD	LM:Ft Worth, TX	-	-		17.800		-		17.800	97.000	114.800	0.000
Subtotal			-	-		17.800		-		17.800	97.000	114.800	0.000

Support (\$ 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			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

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			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

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			
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			-	-		17.800		-		17.800	97.000	114.800	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 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

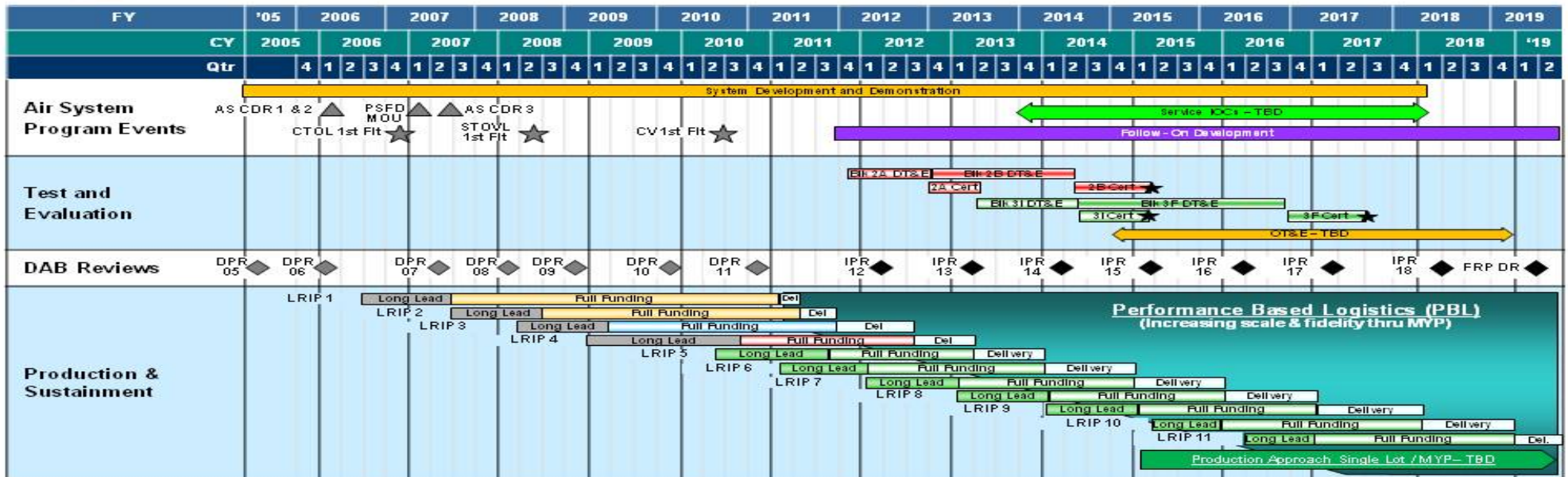
PE 0604800F: Joint Strike Fighter EMD

PROJECT

653832: JSF DEPLOYABILITY AND SUITABILITY ENHANCEMENT



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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604800F: <i>Joint Strike Fighter EMD</i>	PROJECT 653832: <i>JSF DEPLOYABILITY AND SUITABILITY ENHANCEMENT</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Contract Award	1	2013	1	2013
Deployment and Suitability Enhancement Efforts	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</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	66.342	148.307	135.437	-	135.437	130.417	61.323	1.363	1.707	Continuing	Continuing
655037: <i>Support Equipment</i>	53.654	62.240	95.393	-	95.393	82.519	52.263	1.363	1.707	Continuing	Continuing
655081: <i>ICBM Crypto</i>	-	43.953	32.044	-	32.044	47.898	9.060	-	-	Continuing	Continuing
657006: <i>ICBM EMD: Fuze Support</i>	-	42.114	-	-	-	-	-	-	-	Continuing	Continuing
657010: <i>Operational Equipment</i>	12.688	-	8.000	-	8.000	-	-	-	-	Continuing	Continuing

Note

In FY2012, the fuze efforts in Project Number 657006, ICBM EMD: Fuze Support, were transferred from PE 0604222F Nuclear Weapons Support in order to consolidate service activities as they progress towards deployable products.

In FY2013, 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 FY2013, Project Number 655037, Support Equipment, includes the Transporter Erector (TE) Replacement new start effort.

In FY2013, Project Number 657010, Operational Equipment includes the Solid Rocket Motor Modernization new start to begin requirements definition to support a future production program.

A. Mission Description and Budget Item Justification

Intercontinental Ballistic Missile (ICBM) Engineering and Manufacturing Development (EMD) efforts will ensure the extension of the operational life of the Minuteman III ICBM weapon system through 2030.

The Support Equipment program designs, develops, and tests replacement of obsolete/non-serviceable weapon system support equipment. The efforts include design, development, and testing of replacement Electrical-Electronic Equipment Test Sets, Reentry Field Support Equipment, Minuteman Code System Media, the Payload Transporter Tractor and Trailer, Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) Message Generator, the Targeting Application Computer for Single Integrated Operation Plan (SIOP) Targeting Application Computer System (STACS) and Transporter Erectors (TE).

The ICBM Cryptography Upgrade Increment II program expands on the ICBM Cryptography Upgrade Increment I program to incorporate remote key/code change and irreversible transformation of launch/enable codes increasing nuclear weapons security during annual code change cycles.

ICBM EMD: Fuze Support reflects FY2012 effort related to fuze modernization efforts previously included in PE 0604222F and now included in PE 0604933.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>
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The Operational Equipment program designs, develops, and tests replacement of weapon system equipment. The efforts include: (1) design, development, and testing of modifications to the Weapon System Processor (WSP) circuit card to prevent status monitoring loss and modifications to WSP circuit card seating hardware; (2) solid rocket motor modernization efforts to define operational requirements and acquisition strategy for a solid rocket motor follow-on program.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	71.843	158.477	198.491	-	198.491
Current President's Budget	66.342	148.307	135.437	-	135.437
Total Adjustments	-5.501	-10.170	-63.054	-	-63.054
• Congressional General Reductions	-	-0.170			
• Congressional Directed Reductions	-	-10.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-3.000	-			
• SBIR/STTR Transfer	-2.057	-			
• Other Adjustments	-0.444	-	-63.054	-	-63.054

Change Summary Explanation

FY2011 adjustments reflect a \$3M reprogramming and \$2.057 for SBIR.

FY2012 Congressional Directed Reductions reflect contract delays in Project Number 655037, Support Equipment.

For FY2013, funding reflects an \$18.321M increase to project number 655037 for the Transporter Erector (TE) Replacement new start program, an \$8.0M increase for the Solid Rocket Motor Modernization Program new start, a \$73.512M transfer of ICBM Fuze Modernization to PE 0604933, and a \$17.130M decrease for 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 655037: <i>Support Equipment</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
655037: <i>Support Equipment</i>	53.654	62.240	95.393	-	95.393	82.519	52.263	1.363	1.707	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2013, Project Number 655037, Support Equipment, includes the Transporter Erector (TE) Replacement new start effort.

A. Mission Description and Budget Item Justification

The ongoing Support Equipment program replaces obsolete/unsupportable/non-serviceable weapon system support equipment necessary to extend the operational life of the Minuteman III (MM III) weapon system through 2030. The efforts include design, development, and testing of replacement Electrical-Electronic Equipment Test Sets, Reentry Field Support Equipment, Minuteman Code System Media, the Payload Transporter Tractor and Trailer, Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) Message Generator, the Targeting Application Computer for Single Integrated Operation Plan (SIOP) Targeting Application Computer System (STACS) and the Transporter Erector (TE). The production phase, MPAF funding is budgeted under MMIII Support Equipment Replacement, PE 0101213F.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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

	FY 2011	FY 2012	FY 2013
Title: Electrical-Electronic Equipment Test Set (EEETS)	5.703	4.389	3.500
Description: Design and develop the EEETS necessary for production/pre-launch checkout of MOD 7 wafer required for the ongoing test launch program. The program will replace the current unsupportable test set which consists of a non-standard processor, proprietary software, and requires Digital-to-Analog Converter (DAC) cards no longer made (no suitable substitute).			
FY 2011 Accomplishments: Continued design, development, fabrication and testing of EEETS. Completed Preliminary Design Review.			
FY 2012 Plans: Continue design, development, fabrication and testing of EEETS. Complete Critical Design Review.			
FY 2013 Plans: Complete design, development, fabrication and testing of EEETS. Install, test, audit and verify first unit.			
Title: Reentry Field Support Equipment (RFSE)	28.848	37.782	28.235

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>		PROJECT 655037: <i>Support Equipment</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Description: Design and develop the RFSE to replace the current reentry systems test set. The effort will increase the mean time between failure, eliminate unneeded Mk12 functions, and add new Mk21 functions. It will provide capability through 2030 to meet DoE mandated Limited Life Component warhead swaps and to test electrical continuity during buildup of MM III Reentry Systems</p> <p>FY 2011 Accomplishments: Continued design, development, fabrication and testing of RFSE. Continued IV&V for the RFSE. Completed Preliminary Design Review.</p> <p>FY 2012 Plans: Continue design, development, fabrication and testing of RFSE. Continue IV&V for the RFSE. Complete Critical Design Review (CDR).</p> <p>FY 2013 Plans: Continue design, development, fabrication and testing of RFSE. Continue IV&V for the RFSE. Complete Critical Design Review (CDR).</p>				
<p>Title: Code System Media (CSM)</p> <p>Description: The Minuteman CSM effort will develop software to support management of data flow and data products to keep the Minuteman III weapon system into operational mode. Current CSM processes utilize DC300 tape cartridges and 9-track tapes. Beginning in FY11, the National Security Agency (NSA) is no longer using DC300 tape cartridges and the shelf life expires in 2013 for the remaining 9-track tapes. The software will be modified to use CD-ROMs as the new media. Ensures capability through 2030 to load codes/software on MM ICBMs--critical to CY12 code change.</p> <p>FY 2011 Accomplishments: Continued design, development, fabrication and testing of CSM. Continued Nuclear Surety Cross-Check Analysis (NSCCA) for the CSM. Completed Preliminary Design Review.</p> <p>FY 2012 Plans: Continue design, development, fabrication and testing of CSM software. Continue NSCCA for the CSM. Complete CDR. Begin design, development and testing of Cartridge Tape Unit Replacement unit.</p> <p>FY 2013 Plans: Continue design, development, and testing of CSM software. Continue NSCCA for the CSM. Continue design, development and testing of Cartridge Tape Unit replacement unit.</p>		17.264	10.682	13.639
<p>Title: Payload Transporter Tractor and Trailer (PT III)</p>		0.790	3.025	22.320

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 655037: <i>Support Equipment</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Description: Design and develop the capabilities necessary to replace the current PT III, mitigating emerging threat technologies and methods. The new Weapons Transporter design increases safety and security during transport activities and improves maintenance operations.</p> <p>FY 2011 Accomplishments: Performed requirements definition for PT III.</p> <p>FY 2012 Plans: Begin design, development, of replacement PT III.</p> <p>FY 2013 Plans: Continue design, development, fabrication and testing of replacement PT III.</p>				
<p>Title: Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) message generator</p> <p>Description: Design and develop the replacement for the Higher Authority Command/Rapid Message Processing Element (HAC/RMPE) message generator due to obsolescence and unsupportability for repair. This program will address the replacement of Test Support Equipment (TSE) with a modern, sustainable common platform and standard interfaces.</p> <p>FY 2011 Accomplishments: Began design, development, fabrication and testing of HAC/RMPE message generator.</p> <p>FY 2012 Plans: Continue design, development, fabrication and testing of HAC/RMPE message generator. Complete PDR/CDR.</p> <p>FY 2013 Plans: Complete design, development, fabrication and testing of HAC/RMPE message generator. Complete developmental testing and FCA/PCA.</p>		1.049	2.153	1.595
<p>Title: Single Integrated Operational Plan (SIOP) Targeting Applications Computer System (STACS)</p> <p>Description: Design and develop a replacement computer for the STACS. The program will enable output to compact disc media and update/replace unsupportable/obsolete hardware and software.</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans:</p>		-	4.209	7.783

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 655037: <i>Support Equipment</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Begin design and development activities. Complete PDR.			
FY 2013 Plans: Continue design and development activities. Complete Critical Design and Technology Readiness Reviews.			
Title: Transporter Erector Replacement Program (TERP) Description: Design and develop the capabilities necessary to replace the current TE. Update drawings, specifications and TOs to eliminate parts obsolescence and address intended usage through 2030. Qualify system prior to production.	-	-	18.321
FY 2011 Accomplishments: N/A			
FY 2012 Plans: N/A			
FY 2013 Plans: Begin design, development, fabrication and testing of replacement TE.			
Accomplishments/Planned Programs Subtotals	53.654	62.240	95.393

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

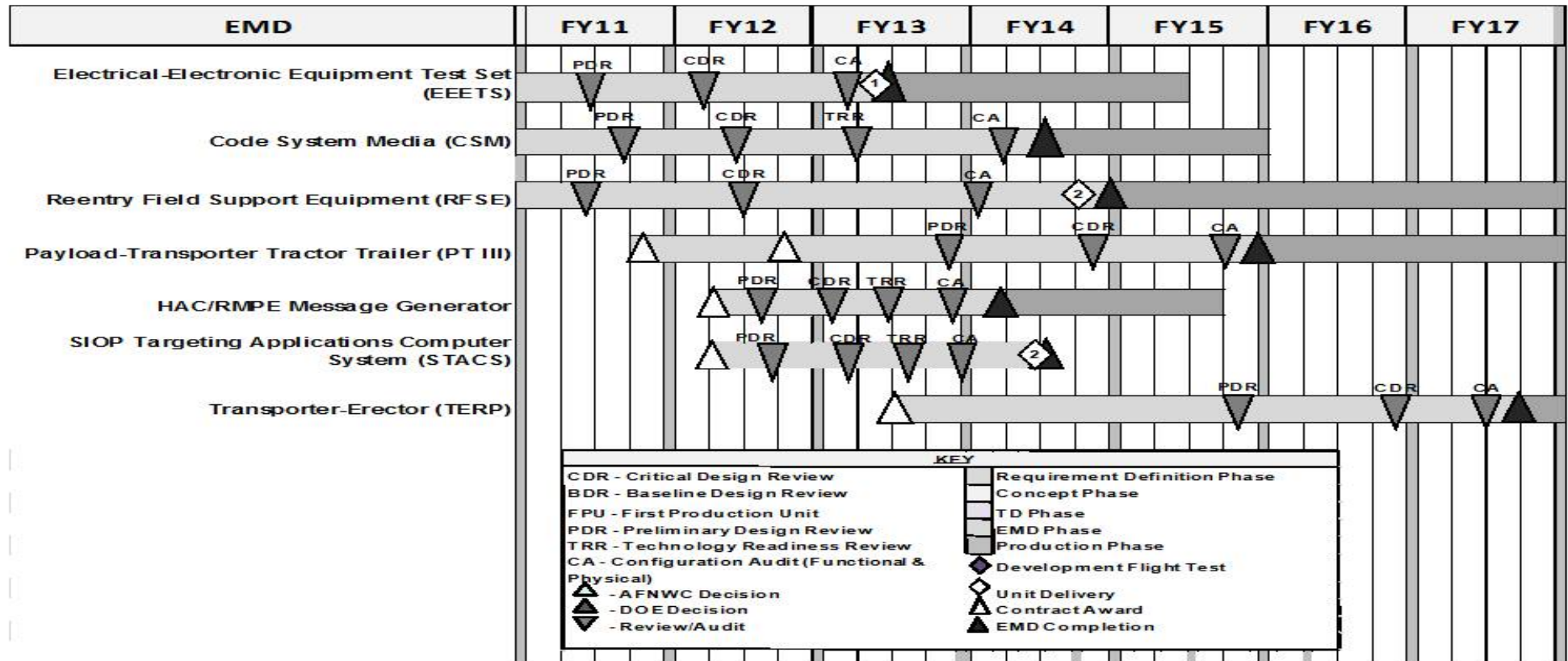
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• MPAF: <i>PE 0101213F, Minuteman Squadrons, MM III Missile Replacement Equipment - Ballistic</i>	59.763	67.706	56.906	0.000	56.906	82.449	149.632	52.903	59.519	Continuing	Continuing

D. Acquisition Strategy
The support equipment replacement programs will be Cost Plus Incentive Fee (CPIF) contract addendums added to the ICBM Prime Integration Contract (IPIC) for everything but the NSCCA and IV&V efforts, which will be contracted for separately under a Cost Plus Award Fee (CPAF) Contract.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 655037: <i>Support Equipment</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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 655037: <i>Support Equipment</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Electrical-Electronic Equipment Test Set (EEETS) Preliminary Design Review (PDR)	2	2011	2	2012
Reentry Field Support Equipment (RFSE) PDR	2	2011	2	2011
Code System Media (CSM) PDR	3	2011	3	2011
PT III Requirements Definition	4	2011	4	2011
EEETS Critical Design Review (CDR)	1	2012	1	2012
RFSE and CSM Critical Design Review (CDR)	2	2012	2	2012
HAC/RMPE Msg Gen PDR	3	2012	3	2012
STACS PDR	3	2012	3	2012
PT III EMD Phase	4	2012	4	2012
STACS and HAC/RMPE CDRs	1	2013	1	2013
EEETS Physical and Functional Configuration Audits (CA)	1	2013	1	2013
CSM Technology Readiness Review (TRR)	1	2013	1	2013
STACS and HAC/RMPE TRRs	3	2013	3	2013
Transporter Erector (TE) contract Award	3	2013	3	2013
PT III PDR	4	2013	4	2013
HAC/RMPE Message Generator and STACS CAs	4	2013	1	2014
CSM and RFSE CAs	1	2014	1	2014
PT III CDR	4	2014	4	2014
PT III CA	4	2015	4	2015
TE PDR	4	2015	4	2015
TE CDR	4	2016	4	2016
TE CA	3	2017	3	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 655081: <i>ICBM Crypto</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
655081: <i>ICBM Crypto</i>	-	43.953	32.044	-	32.044	47.898	9.060	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Increment II of the Intercontinental Ballistic Missile Cryptography Upgrade program executes USSTRATCOM, Air Force Global Strike Command (AFGSC), and Nuclear Weapon Safety Center (NWSC) requirements by implementing the KS-60 capabilities of remote key/code change and irreversible transformation as mandated in the approved Capabilities Development Document (CDD) dated 4 January 2005 and addresses Nuclear Weapon System Safety Group Operational Safety Review (NWSSG OSR) requirements 98-2, 00-1 and 02-2. These features will greatly increase security during code changes by reducing the frequency of open sites 75 days annually and reduce associated resource costs for 450 launch facilities (LF) and 45 launch control centers (LCC).

The associated production funding for the program is in PE 0101213F Minuteman Squadrons, MM III Modifications.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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

	FY 2011	FY 2012	FY 2013
Title: ICU II	-	43.953	32.044
Description: ICBM cryptography upgrade II completes the design and development and implements the KS-60 capabilities of remote key/code change and irreversible transformation.			
FY 2011 Accomplishments: Continued requirements definition, validation and risk mitigation for future design, develop & test of the software upgrades/ changes to the Console Operating Program, Launch Facility hardware/software modification and Wing Code Processing System.			
FY 2012 Plans: Develop design of A4 drawer hardware components, identify and test parts to ensure they meet hardness and weapon system specifications, supply chain risk management, and obtain NSA Fail Safe Design approval. Start OGP, COP, WMAP and SAP software update effort. Start Trainer modification effort.			
FY 2013 Plans: Preliminary Design Reviews for Hardware and Software. Continue A4 Drawer hardware and software development. Test A4 drawer to do Irreversible Transformation and Remote Code Change using the SDS emulator and SDS.			
Accomplishments/Planned Programs Subtotals	-	43.953	32.044

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 655081: <i>ICBM Crypto</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>
• MPAF: <i>PE 0101213F, Minuteman Squadrons, Modification 5916</i>	0.000	0.000	0.000	0.000	0.000	13.174	25.048	29.700	30.234	Continuing	Continuing

D. Acquisition Strategy

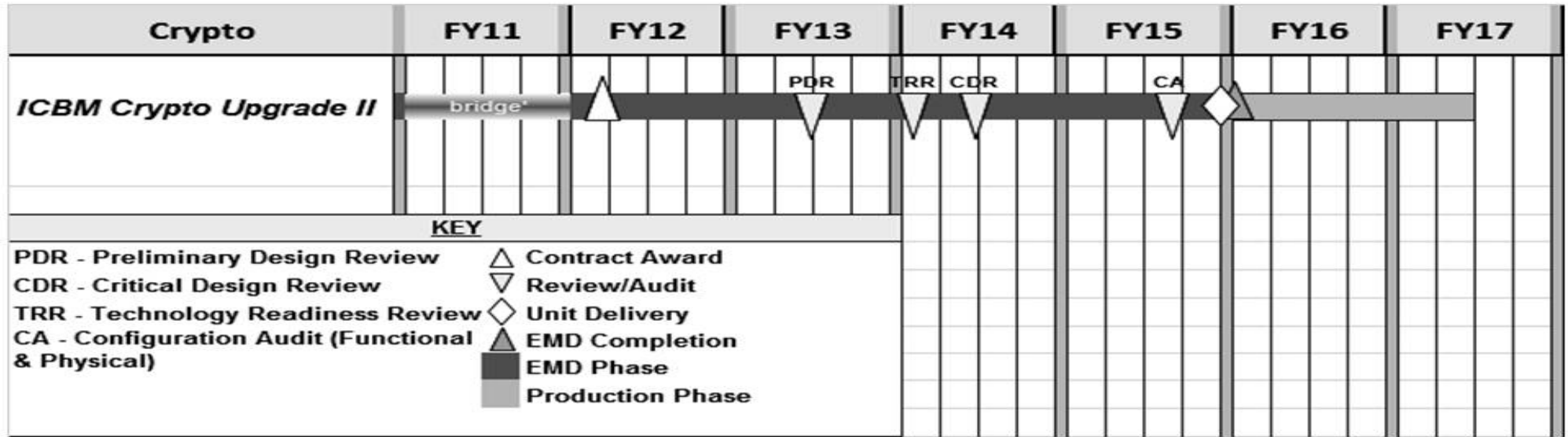
Cost Plus Incentive Fee contract will be added to the ICBM Prime Integration Contractor (IPIC).

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 655081: <i>ICBM Crypto</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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 655081: <i>ICBM Crypto</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Preliminary Design Review (PDR)	2	2013	2	2013
Critical Design Review (CDR)	2	2014	2	2014
Technology Readiness Review (TRR)	1	2014	1	2014
Configuration Audit	3	2015	3	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 657006: <i>ICBM EMD: Fuze 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
657006: <i>ICBM EMD: Fuze Support</i>	-	42.114	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2012, the fuze efforts in Project Number 657006, ICBM EMD: Fuze Support, were transferred from PE 0604222F Nuclear Weapons Support in order to consolidate service activities as they progress towards deployable products.

In FY2013, Project Number 657006, ICBM EMD: Fuze Support, was transferred to PE 0604933F in order to distinguish the effort as a pre-ACAT I program.

A. Mission Description and Budget Item Justification

ICBM Fuze Support activities include: (1) ICBM Fuze Modernization program will replace the Mk21 fuze to meet warfighter requirements and maintain current capability (2) Develop a new Mk12A fuze capability to integrate with W78 Life Extension Program (LEP) and (3) provide Air Force direction and oversight of the W78 LEP to meet Presidential Decision Directive 9 (PDD-9, July 2011) and the Requirements Planning Document that directs the number and mix of nuclear weapons to support the national nuclear deterrent. The Air Force ICBM Fuze Modernization Program will work in conjunction with the W78 LEP, National Nuclear Security Administration (NNSA), Navy, and United Kingdom (UK) Ministry of Defense (MOD) to capitalize on the extensive fuze work done to date by the Navy and NNSA, and make maximum use of joint technologies, parts, components, and development/production capabilities. Additionally, the ICBM Fuze Modernization program will address the associated Minuteman III weapon system modifications, system testing, support equipment, data, training, and fielding efforts required to support the new Mk21 fuze and Mk12A/W78 LEP.

ICBM Fuze Support will continue studies, system engineering, modeling and testing, and development planning leading to a development effort for the Mk21 and Mk12A/W78 LEP replacement fuzes. Development effort will make maximum use of technologies, parts, and components developed under the Navy Mk5 Alteration Program. The W78 life extension oversight and engineering will identify and develop the specific LEP for the W78, identifying solutions to problems or deficiencies, opportunities to incorporate enhanced surety concepts to meet National Security Presidential Directive 28 requirements, integration of the Air Force Fuze Modernization Program and the NNSA W78 LEP development, and the related supporting infrastructure.

This program is in Budget Activity 5, System Development and Demonstration (SDD), because it is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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

	FY 2011	FY 2012	FY 2013
Title: Developmental Planning	-	8.514	-
Description: Developmental planning, requirements definition, contract and acquisition strategy.			
FY 2011 Accomplishments:			

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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 657006: <i>ICBM EMD: Fuze Support</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Reflected in PE 0604222F, Project Number 654236 FY 2012 Plans: Complete concept assessment phase. Conduct Feasibility Study and Option Down-Select. Prepare and release request for proposals. FY 2013 Plans: Reflected in PE 0604933F, Project Number 655082				
Title: System Engineering Description: Coordinate development efforts of W78 Life Extension Program (LEP) and Mk12A arming and fuzing. Synchronize DoD arming and fuzing and DoE warhead requirements. Study and assess weapon system cost/schedule/performance impacts. FY 2011 Accomplishments: Reflected in PE 0604222F, Project Number 654236 FY 2012 Plans: Continue to evaluate AF-USN-UK performance requirements, physical characteristics, logistical and operation concepts, and physical environments. Develop common Military Characteristics (MCs) and Stockpile-to-Target Sequence (STS) requirements. Continue to develop and validate modeling and simulation. Develop engineering design models. Examine nuclear surety themes as directed by National Security Presidential Directive (NSPD)-28. FY 2013 Plans: Reflected in PE 0604933F, Project Number 655082		-	9.440	-
Title: Hardware Development Description: Preliminary design of common technology, components, and parts. FY 2011 Accomplishments: Reflected in PE 0604222F, Project Number 654236 FY 2012 Plans: Develop common parts, components and technology for application to Mk21 and Mk12A/W78 LEP arming and fuzing. Examine nuclear surety themes as directed by NSPD-28. FY 2013 Plans: Reflected in PE 0604933F, Project Number 655082		-	19.000	-
Title: Warhead Engineering/Oversight		-	5.160	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Description: Engineering/oversight of Air Force Fuze Modernization with NNSA warhead activities.</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans: Provide engineering analysis, direction and evaluation. Develop and perform finite element modeling of Reentry Vehicles. Conduct environmental ground testing. Plan and support extended range flight testing.</p> <p>FY 2013 Plans: Reflected in PE 0604933F, Project Number 655082</p>			
Accomplishments/Planned Programs Subtotals	-	42.114	-

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
• MPAF, Missile Procurement - AF: <i>PE 0101213: Minuteman Squadrons, Modification 5915</i>	0.000	0.000	0.000	0.000	0.000	0.000	11.648	14.000	14.252	Continuing	Continuing
• RDT&E, AF: <i>PE 0604222F: Nuclear Weapons Support, 64236 Engineering Analysis, Joint Fuze</i>	9.740	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
• RDT&E, AF (2)...: <i>PE 0604399F: ICBM Fuze Modernization, 655082 ICBM Fuze Support</i>	0.000	0.000	73.512	0.000	73.512	140.511	284.843	389.212	433.741	Continuing	Continuing

D. Acquisition Strategy
Pre-Acquisition program development requires contracts to support the program office in risk reduction, cost estimates, feasibility assessment, development engineering, requests for proposals, source selection, systems engineering, warhead engineering and oversight activities and program planning. Program office will also continue fuze studies and analysis of weapon systems impacts and support to the W78 Life Extension Program. NNSA/Sandia National Laboratories is performing the Design/Development of the AF Fuzes. Development engineering phase 6.3 is planned to start in FY2013.

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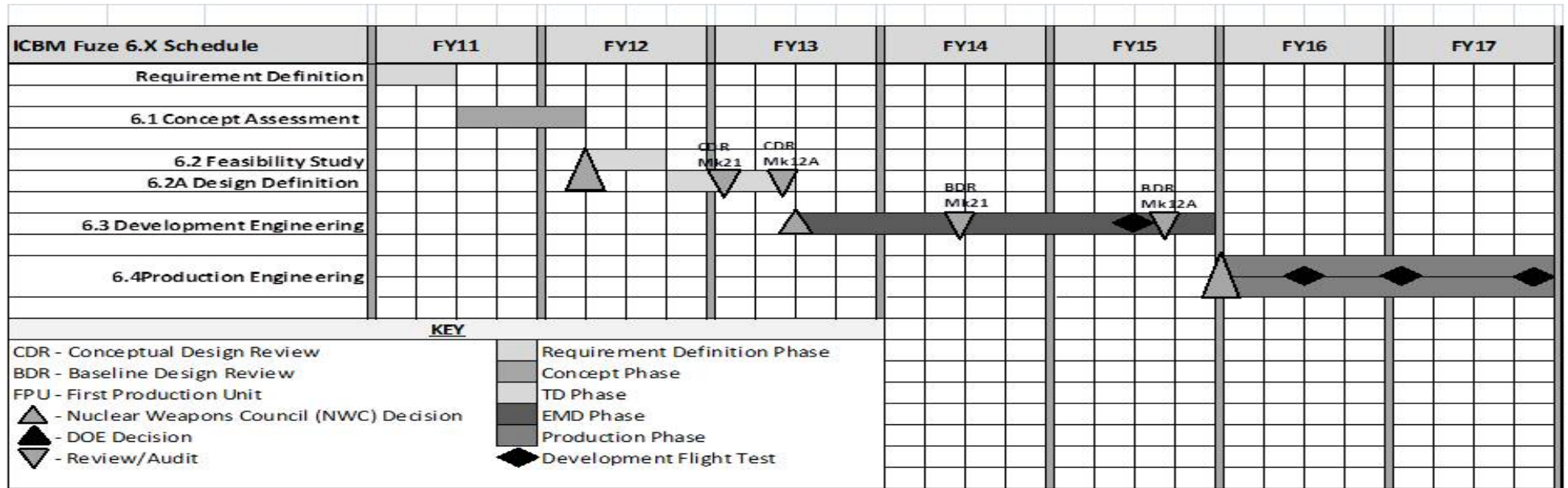
Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 657006: <i>ICBM EMD: Fuze Support</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
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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 657006: <i>ICBM EMD: Fuze Support</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Conceptual Design Review (CDR) Mk21	1	2013	1	2013
Conceptual Design Review (CDR) Mk12A	2	2013	2	2013
Development Engineering Mk21	3	2013	4	2015
Nuclear Weapons Council 6.3 Entry Approval	3	2013	3	2013
Development Engineering Mk 12A	3	2013	4	2015
Baseline Design Review (BDR) Mk21	2	2014	2	2014
Baseline Design Review (BDR) Mk12A	3	2015	3	2015
Nuclear Weapons Council 6.4 Entry Approval	1	2016	1	2016
Production Engineering MK21	1	2016	4	2017
Production Engineering Mk12A	1	2016	4	2017
Phase 6.1 Concept Assessment	3	2011	1	2012
Phase 6.2 Feasibility Study	2	2012	3	2013
Phase 6.2A Design Definition	4	2012	2	2013
Phase 6.3 Development Engineering	3	2013	4	2015
Phase 6.4 Production Engineering	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 657010: <i>Operational Equipment</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
657010: <i>Operational Equipment</i>	12.688	-	8.000	-	8.000	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2011, Project Number 657010, Operational Equipment, was created to include the two Weapon System Processor efforts. Funds were realigned from Project Number 655037, Support Equipment.

In FY2013, Project Number 657010, Operational Equipment includes the Solid Rocket Motor Modernization new start to begin requirements definition to support a future production program.

A. Mission Description and Budget Item Justification

The Operational Equipment program designs, develops and tests replacements for operational weapon system equipment as required to extend the operational life of the Minuteman III (MM III) weapon system through 2030. Operational Equipment activities include (1) the Solid Rocket Motor (SRM) Modernization program, (2) hardware and software modifications to the Weapon System Processor (WSP) circuit card failure mode to prevent status monitoring faults, and (3) hardware modifications necessary to ensure circuit cards remain properly seated within the WSP.

BA5 - This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Weapon System Processor (WSP) Circuit Card Failure</p> <p>Description: Design and develop hardware and software modifications to the WSP circuit card to prevent recurrence of status monitoring faults. Effort will design/develop jamming detector circuitry and update Console Operations Program software.</p> <p>FY 2011 Accomplishments: Designed and developed hardware and software modifications to the WSP circuit card failure mode to prevent recurrence of status monitoring faults. Designed and developed jamming detector circuitry and updated Console Operations Program software.</p>	9.970	-	-
<p>Title: Weapon System Processor (WSP) Circuit Card Reseating</p> <p>Description: Design and develop the modifications required to decrease potential for loose and/or improperly seated circuit cards in WSP prevent recurrence of status monitoring faults. Effort will include design and develop mechanical insertion/inspection hardware necessary to ensure cards are properly installed and remain fully seated.</p>	2.718	-	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 657010: <i>Operational Equipment</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<i>FY 2011 Accomplishments:</i> Designed and developed modifications required to decrease potential for loose and/or improperly seated circuit cards in WSP prevent recurrence of status monitoring faults. Designed and developed mechanical insertion/inspection hardware necessary to ensure cards are properly installed and remain fully seated.			
<i>Title:</i> Solid Rocket Motor (SRM) Modernization <i>Description:</i> Effort will focus on reducing the total ownership cost of the Minuteman III weapon system by utilizing technologies developed in the Intercontinental Ballistic Missile Propulsion Applications Program to modernize the Minuteman III booster stack to address maintenance and obsolescence issues realized in the legacy system.	-	-	8.000
<i>FY 2013 Plans:</i> Accomplish studies to investigate the application of new technologies into the Minuteman III booster stack. Evaluate current Minuteman III solid rocket motor requirements and update as required based on legacy system issues and availability of mature technology that will reduce total ownership costs. Prepare for release of requests for proposals.			
Accomplishments/Planned Programs Subtotals	12.688	-	8.000

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
• MPAF: <i>PE0101213F, Minuteman Squadrons</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

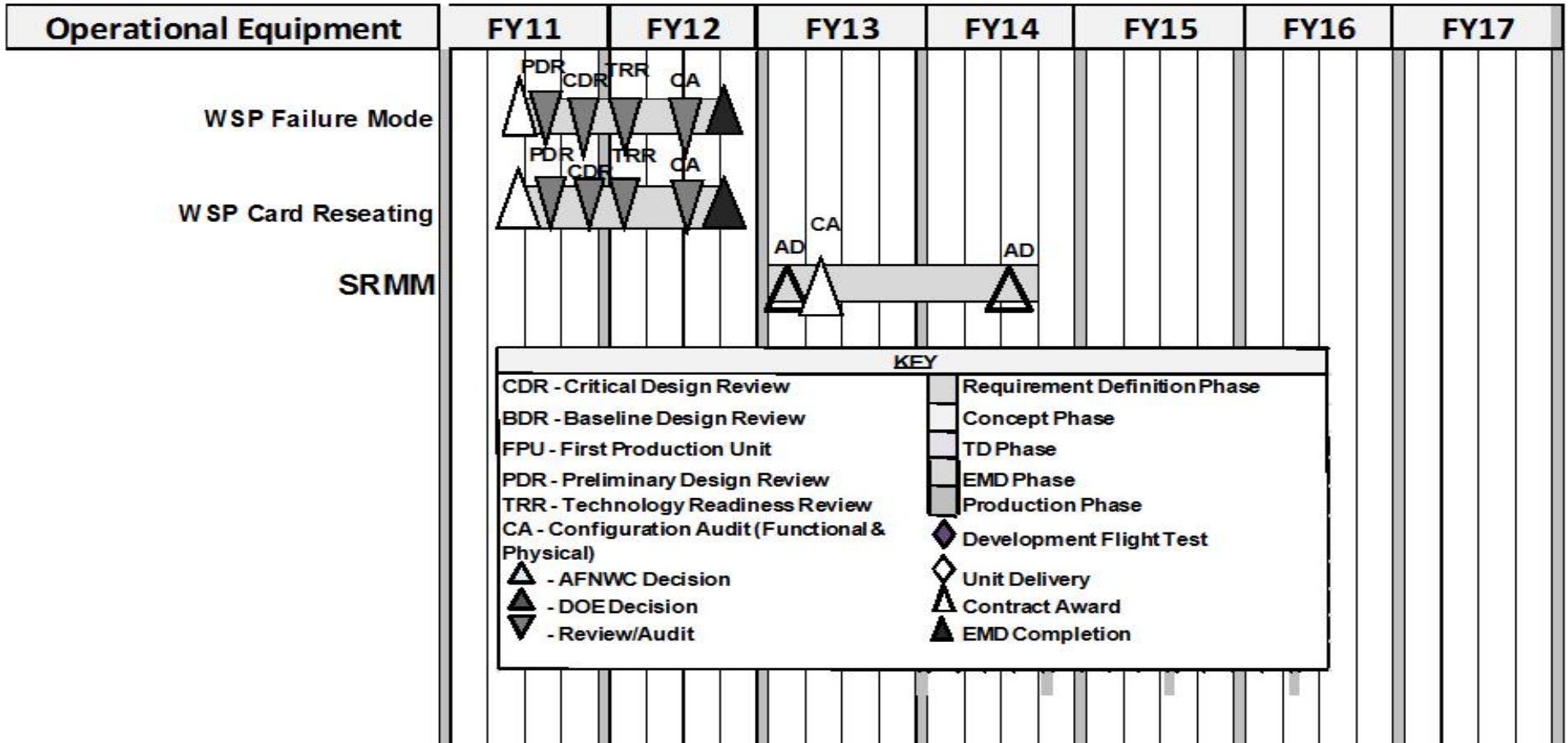
D. Acquisition Strategy
WSP - Implement Operations Review Board recommendations through the ICBM Prime Integration Contract.

SRM - TBD

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 657010: <i>Operational Equipment</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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604851F: <i>ICBM - EMD</i>	PROJECT 657010: <i>Operational Equipment</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
WSP Fallure Mode PDR	3	2011	3	2011
WSP Fallure Mode CDR	4	2011	4	2011
WSP Fallure Mode TRR	1	2012	1	2012
WSP Fallure Mode CA	3	2012	3	2012
WSP Card Reseating PDR	3	2011	3	2011
WSP Card Reseating CDR	4	2011	4	2011
WSP Card Reseating TRR	1	2012	1	2012
WSP Card Reseating CA	2	2012	2	2012
SRM Modernization AFNWC Decision	1	2013	2	2014
SRM Modernization Contract Award	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604853F: <i>Evolved Expendable Launch Vehicle - EMD</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	53.786	14.524	7.980	-	7.980	7.963	-	-	-	Continuing	Continuing
650004: <i>Evolved Expendable Launch Vehicle</i>	53.786	14.524	7.980	-	7.980	7.963	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Evolved Expendable Launch Vehicle (EELV) program is a space launch system that satisfies the government's National Launch Forecast (NLF) requirements. EELV is a launch service, not a weapon system, primarily funded with procurement funds.

EELV is responsible for launching government manifested payloads. EELV supports military, intelligence, and international partnership mission requirements. The program also supports development and qualification of new entrants for launching government manifested payloads.

The program has research and developmental items including: new entrant certification; fleet standardization of the RS-68 main engine upgrade; current RL10 and common upper stage development; integration of space vehicles for research and development purposes; Pre-Planned Product Improvements (P3I) to ensure sustainability (includes, but is not limited to, secondary payload adaptor standard service, Global Positioning System (GPS) Metric Tracking capability, space launch flight termination system (SLFTS), future flight safety strategy, development of replacement components, flight and ground instrumentation); special studies (to include, but not limited to affordable upper stage engine studies), and other related support activities.

As of 21 August 2007, the EELV Program formally entered the sustainment phase. As of 31 October 2007, Air Force Space Command formally extended the EELV Program an additional 10 years, from 2020 through 2030. This program element is in Budget Activity 5, System Development and Demonstration, because it supports development and demonstration of the EELV concept leading to deployment of a lower cost expendable launch vehicle 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604853F: <i>Evolved Expendable Launch Vehicle - EMD</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	30.245	20.028	7.965	-	7.965
Current President's Budget	53.786	14.524	7.980	-	7.980
Total Adjustments	23.541	-5.504	0.015	-	0.015
• Congressional General Reductions	-	-0.504			
• Congressional Directed Reductions	-	-5.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.872	-			
• Other Adjustments	24.413	-	0.015	-	0.015

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

Project: 650004: *Evolved Expendable Launch Vehicle*

Congressional Add: *Common Upper Stage*

Congressional Add Subtotals for Project: 650004

Congressional Add Totals for all Projects

	FY 2011	FY 2012
	25.000	-
	25.000	-
	25.000	-

Change Summary Explanation

FY11 adjustments (Congressional General Reductions -\$0.587M, Congressional Adds \$25.0M) are reflected in the Other Adjustment Row.

FY12: -\$5.0M Congressional reduction for program underexecution.

FY13: No significant program changes.

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

	FY 2011	FY 2012	FY 2013
Title: EELV RDT&E	28.786	14.524	7.980
Description: Fund EELV product improvements, replacement components, system enhancements, and special studies to allow EELV to meet National Launch Forecast requirements through 2030.			
FY 2011 Accomplishments: Continued fleet-wide integration and certification of RS-68 upgrade. Continued development of GPS metric tracking 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604853F: <i>Evolved Expendable Launch Vehicle - EMD</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Continued P3I efforts to include but not limited to development of secondary payload standard service efforts, development of replacement components, flight and ground instrumentation, and special studies. FY 2012 Plans: Complete fleet-wide integration and certification of RS-68 upgrade. Continue development of secondary payload standard service and GPS metric tracking development and conduct flight certifications. Continue P3I efforts, to include, but not limited to, development of replacement components, common upper stage engine, flight and ground instrumentation to include upgraded flight termination system (SLFTS), and conduct special studies. N/A FY 2013 Plans: Continue P3I efforts on upgraded secure launch flight termination system (SLFTS), common upper stage engine, and conduct special studies. FFRDC support of new entrant certification analysis as required. Complete development of secondary payload standard service and GPS metric tracking.			
Accomplishments/Planned Programs Subtotals	28.786	14.524	7.980

	FY 2011	FY 2012
Congressional Add: Common Upper Stage	25.000	-
FY 2011 Accomplishments: Continued Development of RL-10C to achieve a Common Upper Stage.		
Congressional Adds Subtotals	25.000	-

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>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>
• P-24: MPAF, PE 0305953F, <i>Evolved Expendable Launch Vehicle</i>	1,144.500	1,701.673	1,679.856	0.000	1,679.856	1,960.941	2,064.937	2,241.296	2,243.353	Continuing	Continuing

E. Acquisition Strategy
The current acquisition strategy separates the launch service price from the launch infrastructure costs. The Evolved Expendable Launch Vehicle (EELV) Acquisition Strategy, approved 24 Nov 2011, restructures the approach of the EELV Program to address many challenges the program has experienced throughout the EELV system lifecycle. This acquisition strategy directly addresses the Fiscal Year (FY) 2013 -2019 (Phase 1) timeframe. In cooperation with the NRO, the Air Force will commit to an annual production rate of launch vehicles establishing better predictability to maintain mission success, stabilize the industrial base, reduce costs, allow

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604853F: <i>Evolved Expendable Launch Vehicle - EMD</i>
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competition, prevent or mitigate any cost or redesign impacts to space vehicles, and sustain the program to assure access to space. This strategy will continue to allow the Department of Defense to reliably place medium-, intermediate-, and heavy-class National Security Space (NSS) space vehicles into earth orbit. RDT&E-funded projects are included on the contract as separate contract line items. The acquisition approach supports the 2004 National Space Transportation Policy. The EELV system will launch the majority of the government portion of the NLF through 2030 and the government will continue to work to partner with industry to continuously improve products and processes to enhance reliability and reduce both the contractor's and government's total costs. In October 2011, the Air Force, NRO, and NASA signed a coordinated strategy for certification of commercial new entrants in order to compete to launch EELV-class payloads.

As of 21 August 2007, the EELV program formally entered the sustainment phase. Section 838 of the FY2012 National Defense Authorization Act requires EELV Selected Acquisition Report submittals.

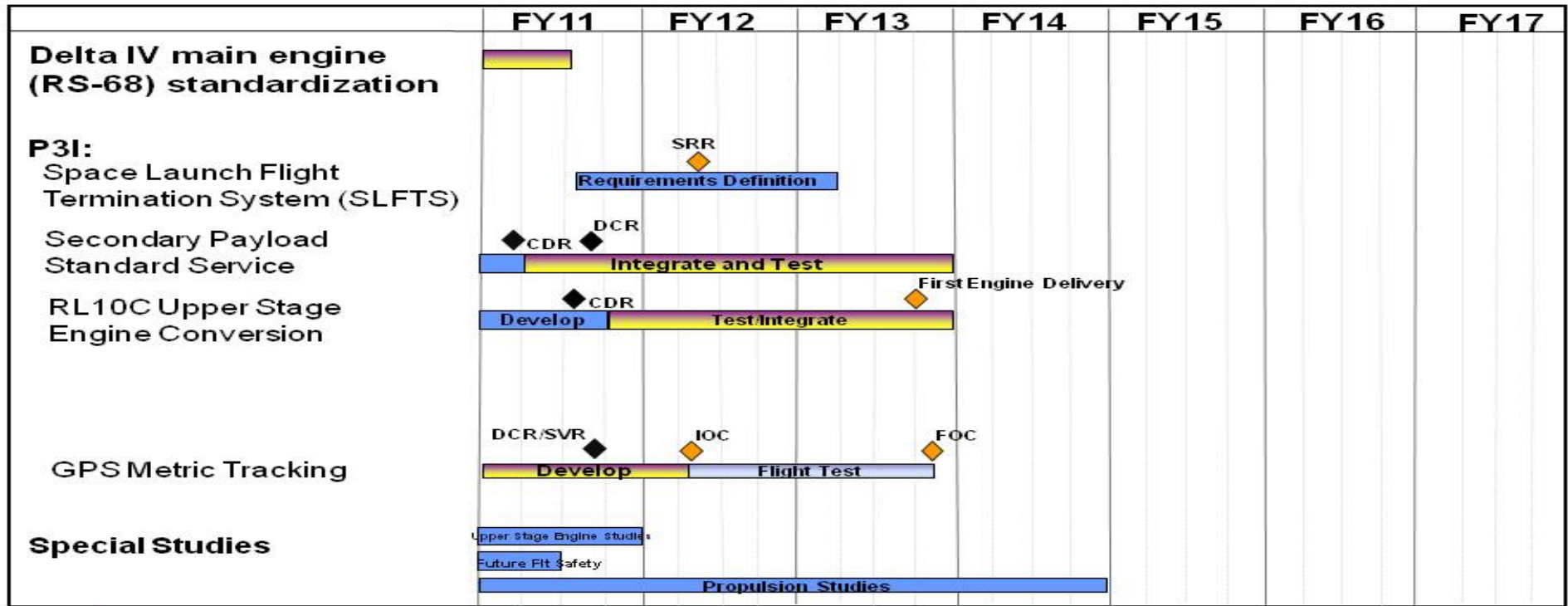
As of 31 Oct 2007, Air Force Space Command formally extended the EELV Program an additional 10 years, from 2020 through 2030.

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

Events	Start		End	
	Quarter	Year	Quarter	Year
Pre-Planned Product Improvement (P3I): Secondary Payload Standard Service Design Certification Review (DCR)	3	2011	3	2011
Pre-Planned Product Improvement (P3I): GPS Metric Tracking Certification flights	2	2012	4	2013
Delta IV main engine Fleet Standardization - Metallic Lox Skirt Critical Design Review	1	2011	2	2011
Pre-Planned Product Improvement (P3I): RL-10C Engine Critical Design Review (CDR)	3	2011	4	2011
Pre-Planned Product Improvement (P3I): Secure Flight Termination System Requirements Definition	3	2011	1	2013
Pre-Planned Product Improvement (P3I): Secure Flight Termination System Requirements Review (SRR)	1	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604932F: <i>LONG RANGE STANDOFF WEAPON</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	-	-	2.004	-	2.004	5.000	41.698	209.082	352.932	Continuing	Continuing
657011: <i>LONG RANGE STAND-OFF</i>	-	-	2.004	-	2.004	5.000	41.698	209.082	352.932	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY11, LRSO efforts were funded in PE 0101122F, Air Launched Cruise Missile, project number 674797.

In FY12, LRSO efforts were transferred from PE 0101122F, Air Launched Cruise Missile, project number 674797, to PE 0101125, Nuclear Weapon Modernization, project number 657008, in order to support LRSO development.

In FY13, LRSO efforts were transferred from PE 0101125F, Nuclear Weapons Modernization, project number 657008, to PE 0604932F, Longe Range Standoff Weapon, project number 657011, in order to support LRSO development.

A. Mission Description and Budget Item Justification

The Long Range Stand Off (LRSO) effort will develop a weapon system to replace the Air Force's Air Launched Cruise Missile (ALCM), operational since 1986. The LRSO weapon system will be capable of penetrating and surviving advanced Integrated Air Defense Systems (IADS) from significant stand off range to prosecute strategic targets in support of the Air Force's global attack capability and strategic deterrence core function. LRSO FY2013 funding supports completion of the Analysis of Alternatives (AoA) to compare the operational effectiveness, cost, and risks of proposed materiel solutions as well as Milestone A preparation activities.

This program is in Budget Activity 5, System Development and Demonstration (SDD), because it is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604932F: <i>LONG RANGE STANDOFF WEAPON</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	-	-	-	-	-
Current President's Budget	-	-	2.004	-	2.004
Total Adjustments	-	-	2.004	-	2.004
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	2.004	-	2.004

Change Summary Explanation

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.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: Materiel Solution Analysis (MSA) & AoA</p> <p>Description: Conduct LRSO MSA/AoA activities.</p> <p>FY 2011 Accomplishments: Effort resided in PE 0101122F, project number 674797, in FY11. Support Materiel Development Decision (MDD). Initiate MSA phase activities.</p> <p>FY 2012 Plans: Effort resided in PE 0101125F, project number 657008, in FY12. Accomplish LRSO AoA. Activities include: concept refinement, technology analyses, modeling and simulation support, engineering studies, program cost and schedule estimation, acquisition strategy development, risk reduction efforts, initial requirements definition, Milestone A preparation to include development of MSA exit/Technology Development (TD) entrance documentation.</p> <p>FY 2013 Base Plans: Complete LRSO AoA. Activities include: concept refinement, technology analyses, modeling and simulation support, engineering studies, program cost and schedule estimation, acquisition strategy refinement, risk</p>	-	-	2.004	-	2.004

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

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
reduction efforts, initial requirements definition, Milestone A preparation to include development of MSA exit/ Tech Development entrance documentation.					
FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	-	-	2.004	-	2.004






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 0101122F, RDT&E: <i>Air Launched Cruise Missile</i>	3.197	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0101125F, RDT&E: <i>Nuclear Weapon Modernization</i>	0.000	9.926	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. Acquisition Strategy
Development of the LRSO acquisition/contract strategy continues to evolve pending the completion of the AoA and the evaluation of alternative weapon system concepts. These efforts will inform the development of the initial acquisition strategy in preparation for a Milestone A Defense Acquisition Board (DAB) in FY2014.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604932F: <i>LONG RANGE STANDOFF WEAPON</i>	PROJECT 657011: <i>LONG RANGE STAND-OFF</i>

	FY11	FY12	FY13	FY14	FY15	FY16	FY17
MDD Preparation	 MDD						
Materiel Solution Analysis Phase							
Tech Development Phase				 MS A	 Contract Award		

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604932F: <i>LONG RANGE STANDOFF WEAPON</i>	PROJECT 657011: <i>LONG RANGE STAND-OFF</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Milestone A Decision	1	2014	1	2014
Technology Development Phase	1	2015	1	2017
Contract Award	1	2015	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604933F: <i>ICBM FUZE 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	-	-	73.512	-	73.512	140.511	284.843	389.212	433.741	Continuing	Continuing
655082: <i>ICBM FUZE SUPPORT</i>	-	-	73.512	-	73.512	140.511	284.843	389.212	433.741	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2013, the fuze efforts in Project Number 655082, ICBM Fuze Support, were transferred from PE 0604851F ICBM - EMD, in order to distinguish the effort as a pre-ACAT I program.

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 ICBM Fuze Modernization program activities will include replacement of the Mk21 fuze to meet warfighter requirements and maintain current capability; development of a new Mk12A fuze capability to integrate with W78 Life Extension Program (LEP); and provide for Air Force direction and oversight of the W78 LEP. The Air Force ICBM Fuze Modernization Program will work in conjunction with the W78 LEP, National Nuclear Security Administration (NNSA), Navy, and United Kingdom (UK) Ministry of Defense (MOD) to capitalize on the extensive fuze work done to date by the Navy and NNSA, and make maximum use of joint technologies, parts, components, and development/production capabilities. Additionally, the ICBM Fuze Modernization program will address the associated Minuteman III weapon system modifications, system testing, support equipment, data, training, and fielding efforts required to support the new Mk21 fuze and Mk12A/W78 LEP.

ICBM Fuze Support will continue studies, system engineering, modeling and testing, and development planning leading to a development effort for the Mk21 and Mk12A/W78 LEP replacement fuzes. Development effort will make maximum use of technologies, parts, and components developed under the Navy Mk5 Alteration Program. The W78 life extension oversight and engineering will identify and develop the specific LEP for the W78, identifying solutions to problems or deficiencies, opportunities to incorporate enhanced surety concepts to meet National Security Presidential Directive 28 requirements, integration of the Air Force Fuze Modernization Program and the NNSA W78 LEP development, and the related supporting infrastructure.

This program is in Budget Activity 5, System Development and Demonstration (SDD), because it is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604933F: <i>ICBM FUZE 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	-	-	-	-	-
Current President's Budget	-	-	73.512	-	73.512
Total Adjustments	-	-	73.512	-	73.512
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	73.512	-	73.512

Change Summary Explanation

For FY2013, funding reflects \$73.512M transferred from Project PE 0604851F, ICBM - EMD.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: Developmental Planning</p> <p>Description: Developmental planning, requirements definition, contract and acquisition strategy.</p> <p>FY 2011 Accomplishments: Reflected in PE 0604222F, Project Number 654236</p> <p>FY 2012 Plans: Reflected in PE 0604851F, Project Number 657006</p> <p>FY 2013 Plans: Prepare for Phase 6.3 Development Engineering and related decision points. Prepare and release request for proposals and related acquisition/ contracting documents. Prepare for source selection of future contract awards. Develop concept and design definitions for Conceptual Design Reviews.</p>	-	-	10.000
<p>Title: System Engineering</p> <p>Description: Coordinate development efforts of W78 Life Extension Program (LEP) and Mk12A arming and fuzing. Synchronize DoD arming and fuzing and DOE warhead requirements. Study and assess weapon system cost/schedule/performance impacts.</p> <p>FY 2011 Accomplishments:</p>	-	-	15.000

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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 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604933F: <i>ICBM FUZE MODERNIZATION</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Reflected in PE 0604222F, Project Number 654236 FY 2012 Plans: Reflected in PE 0604851F, Project Number 657006 FY 2013 Plans: Continue to evaluate performance requirements, physical characteristics, logistical and operation concepts, and physical environments. Continue to develop common Military Characteristics (MCs) and Stockpile-to-Target Sequence (STS) requirements. Continue to develop and validate modeling and simulation and support development planning. Continue to develop engineering design models and examine nuclear surety themes as directed by NSPD-28.				
Title: Hardware Development Description: Preliminary design of common technology, components, and parts. FY 2011 Accomplishments: Reflected in PE 0604222F, Project Number 654236 FY 2012 Plans: Reflected in PE 0604851F, Project Number 657006 FY 2013 Plans: Continue development of common parts, components, and technology for application to Mk21 and Mk12A/W78 LEP fuzes. Examine nuclear surety themes as directed by NSPD-28. Provide development hardware for assessment.		-	-	36.677
Title: Warhead Engineering Oversight Description: Engineering/oversight of Air Force Fuze Modernization with NNSA warhead activities. FY 2011 Accomplishments: N/A FY 2012 Plans: Reflected in PE 0604851F, Project Number 657006 FY 2013 Plans: Continue providing engineering analysis, direction and evaluation. Continue to develop and perform finite element modeling of the Reentry Vehicles. Continue to execute development tasks required for 6.2/2A Feasibility and Cost study phase of the W78 Life		-	-	11.835

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604933F: <i>ICBM FUZE MODERNIZATION</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Extension Program. Continue environmental ground testing of the W78/Mk12A. Plan and support extended range flight testing of fuze related developmental hardware.			
Accomplishments/Planned Programs Subtotals	-	-	73.512

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: <i>PE 0604222F: Nuclear Weapons Support, 654236 Engineering Analysis, Joint Fuze</i>	9.740	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.740
• RDT&E, AF (1)...: <i>PE 0604815F: ICBM - EMD, 657006 Fuze Support</i>	0.000	42.114	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	42.114
• MPAF, Missile Procurement - AF: <i>PE 0101213F: Minuteman Squadrons, Modification 5915</i>	0.000	0.000	0.000	0.000	0.000	0.000	11.648	14.000	14.252	Continuing	Continuing

E. Acquisition Strategy
Pre-Acquisition program development requires contracts to support the program office in risk reduction, cost estimates, feasibility assessment, development engineering, requests for proposals, source selection, systems engineering, warhead engineering and oversight activities and program planning. Program office will also continue fuze studies and analysis of weapon systems impacts and support to the W78 Life Extension Program. NNSA/Sandia National Laboratories is performing the Design/Development of the AF Fuzes. Development engineering phase 6.3 is planned to start in FY2013.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604933F: <i>ICBM FUZE MODERNIZATION</i>	PROJECT 655082: <i>ICBM FUZE SUPPORT</i>
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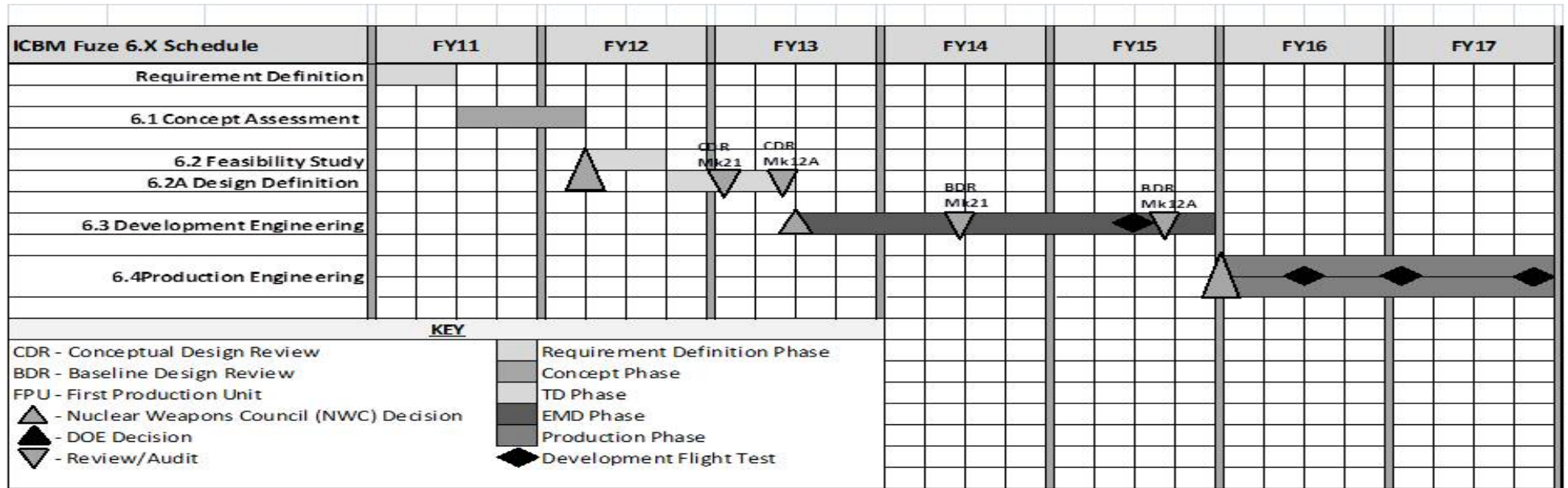
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Preliminary Design Development	MIPR	Sandia National Labs:Albuquerque, NM	-	-		36.677		-		36.677	Continuing	Continuing	TBD
Subtotal			-	-		36.677		-		36.677			

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
Minuteman Systems Engineering	TBD	TBD:TBD,	-	-		7.500	Nov 2012	-		7.500	Continuing	Continuing	TBD
Acquisition and Engineering Support	C/CPFF	Booze Allen Hamilton:Clearfield, UT	-	-		2.000	Oct 2012	-		2.000	Continuing	Continuing	TBD
Hardware Engineering Support	C/TBD	TBD:,	-	-		9.248	Nov 2012	-		9.248	Continuing	Continuing	TBD
Warhead Engineering Support	MIPR	NNSA:Albuquerque, NM	-	-		3.112	Oct 2012	-		3.112	Continuing	Continuing	TBD
Extended Test Range Support	MIPR	Navy:Alexandria, VA	-	-		3.680	Dec 2012	-		3.680	Continuing	Continuing	TBD
LPO Engineering Support	C/CPFF	Booze Allen Hamilton:Albuquerque, NM	-	-		2.241	Oct 2012	-		2.241	Continuing	Continuing	TBD
LPO Program Management Support	C/CPFF	ITT:Albuquerque, NM	-	-		2.241	Oct 2012	-		2.241	Continuing	Continuing	TBD
Subtotal			-	-		30.022		-		30.022			

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 Planning	C/CPFF	Northrop Grumman:Clearfield, UT	-	-		0.500	Oct 2012	-		0.500	Continuing	Continuing	TBD

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604933F: <i>ICBM FUZE MODERNIZATION</i>	PROJECT 655082: <i>ICBM FUZE SUPPORT</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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604933F: <i>ICBM FUZE MODERNIZATION</i>	PROJECT 655082: <i>ICBM FUZE SUPPORT</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Conceptual Design Review (CDR) Mk21	1	2013	1	2013
Conceptual Design Review (CDR) Mk12A	2	2013	2	2013
Development Engineering Mk21	3	2013	4	2015
Nuclear Weapons Council 6.3 Entry Approval	3	2013	3	2013
Development Engineering Mk 12A	3	2013	4	2015
Baseline Design Review (BDR) Mk21	2	2014	2	2014
Baseline Design Review (BDR) Mk12A	3	2015	3	2015
Nuclear Weapons Council 6.4 Entry Approval	1	2016	1	2016
Production Engineering MK21	1	2016	4	2017
Production Engineering Mk12A	1	2016	4	2017
Phase 6.1 Concept Assessment	3	2011	1	2012
Phase 6.2 Feasibility Study	2	2012	3	2013
Phase 6.2A Design Definition	4	2012	2	2013
Phase 6.3 Development Engineering	3	2013	4	2015
Phase 6.4 Production Engineering	1	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605213F: <i>F-22 INCREMENT 3.2B</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	-	-	140.100	-	140.100	174.700	137.700	86.300	34.600	Continuing	Continuing
654785: <i>F-22 INCREMENT 3.2B</i>	-	-	140.100	-	140.100	174.700	137.700	86.300	34.600	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

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.

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

Increment 3.2B will integrate the newest air-to-air intercept missiles (i.e., AIM-9X and AIM-120D), further improve the Electronic Protection (EP) capability over Increment 3.2A, and enhance the F-22's geolocation capability from the Increment 3.1 baseline with the addition of the Geolocation 2 candidate. Increment 3.2B will include the Enhanced Stores Management System (ESMS), as well as, an Intra-Flight Datalink (IFDL) improvement to increase IFDL bandwidth and enable cooperative functions required to realize Increment 3.2B candidates.

In addition to the aforementioned hardware modifications and integration requirements, Increment 3.2B will develop, certify and integrate a new platform operational flight program to ensure the system interoperability and performance of all increment-level developments.

The development program enhances the air vehicle and training system to improve/enhance F-22 weapons, communications, and Intelligence Surveillance Reconnaissance (ISR) capabilities.

BA5 - This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605213F: <i>F-22 INCREMENT 3.2B</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	-	-	-	-	-
Current President's Budget	-	-	140.100	-	140.100
Total Adjustments	-	-	140.100	-	140.100
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	140.100	-	140.100

Change Summary Explanation

In FY13: An increase due to \$140.1M realignment from the baseline PE 0207138F BPAC 674785 to newly established PE 0605213F BPAC 654785 to break out Increment 3.2B funding.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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Title: Increment 3.2B	-	-	130.951
Description: The F-22 Increment 3.2B Modernization Program consists of the hardware/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.			
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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605213F: <i>F-22 INCREMENT 3.2B</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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<p>In FY11, \$112.9M in PE 0207138F: ESMS program will continue sub-system integration and complete it in the Avionics Integration Lag (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, Integrations, 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 FY12, \$113.9M in PE 0207138F: 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 teh Increment 3.2 Operational Capability Description Document.</p> <p>FY 2013 Plans: (U) In FY2013: Upon receiving authority to enter into Milestone B, a Critical Design Review will be held culminating the completion of the design work. Increment 3.2B will begin initial work in the Development, Code, and Integration and Test Phase.</p>			
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<p>Title: Combined Test Force (CTF)</p> <p>Description: The F-22 Combined Test Force (CTF), located at Edwards Air Force Base, conducts Increment 3.2B full-up 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 Increment 3.2B performance deficiencies early before they are more difficult and costly to resolve.</p> <p>FY 2011 Accomplishments:</p>	-	-	5.271
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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605213F: <i>F-22 INCREMENT 3.2B</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
In FY2011: Combined Test Force (CTF) FY2011 Effort Description located in baseline program documentation, PE 0207138F. FY 2012 Plans: In FY2012: Combined Test Force (CTF) FY2012 Effort Description located in baseline program documentation, PE 0207138F. FY 2013 Plans: (U) In FY2013: Major software improvements associated with Increment 3.2B include testing of geolocation capability from the baseline Increment 3.1 program as well as integration testing of air-to-air intercept missiles. Other small program requirements are expected to require testing such as Intra-Flight Datalink (IFDL) to ensure integration and interoperability.			
Title: Mission Support Description: Continue mission support of Increment 3.2B FY 2011 Accomplishments: In FY2011: Mission Support FY2011 Effort Description located in baseline program documentation, PE 0207138F. FY 2012 Plans: In FY2012: Mission Support FY2012 Effort Description located in baseline program documentation, PE 0207138F. FY 2013 Plans: (U) In FY2013: Funds provide management and oversight activities in direct support of Inc 3.2B.	-	-	3.878
Accomplishments/Planned Programs Subtotals	-	-	140.100

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>Cost To</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>Complete</u>	<u>Total Cost</u>
• 1: <i>PE 27163F, AIM-120D RDT&E</i>	5.900	10.810	18.990	0.000	18.990	23.830	23.940	5.820	0.000	Continuing	Continuing

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

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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 5: <i>Development & Demonstration (SDD)</i>	PE 0605213F: <i>F-22 INCREMENT 3.2B</i>

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605213F: <i>F-22 INCREMENT 3.2B</i>	PROJECT 654785: <i>F-22 INCREMENT 3.2B</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
Increment 3.2B	SS/CPIF	Lockheed Martin:Fort Worth, TX	-	-		130.951	Jan 2013	-		130.951	264.497	395.448	0.000
Subtotal			-	-		130.951		-		130.951	264.497	395.448	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
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,	-	-		5.271	Oct 2013	-		5.271	95.751	101.022	0.000
Laboratory Test Operations	SS/Various	Lockheed Martin:Fort Worth, TX	-	-		-		-		-	59.457	59.457	0.000
Subtotal			-	-		5.271		-		5.271	155.208	160.479	0.000

Remarks

FY12 and prior year costs for Increment 3.2B are shown under PE 0207138F. FY13 and later are shown under PE 0605213F.

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,	-	-		3.878	Oct 2012	-		3.878	13.595	17.473	0.000
Subtotal			-	-		3.878		-		3.878	13.595	17.473	0.000

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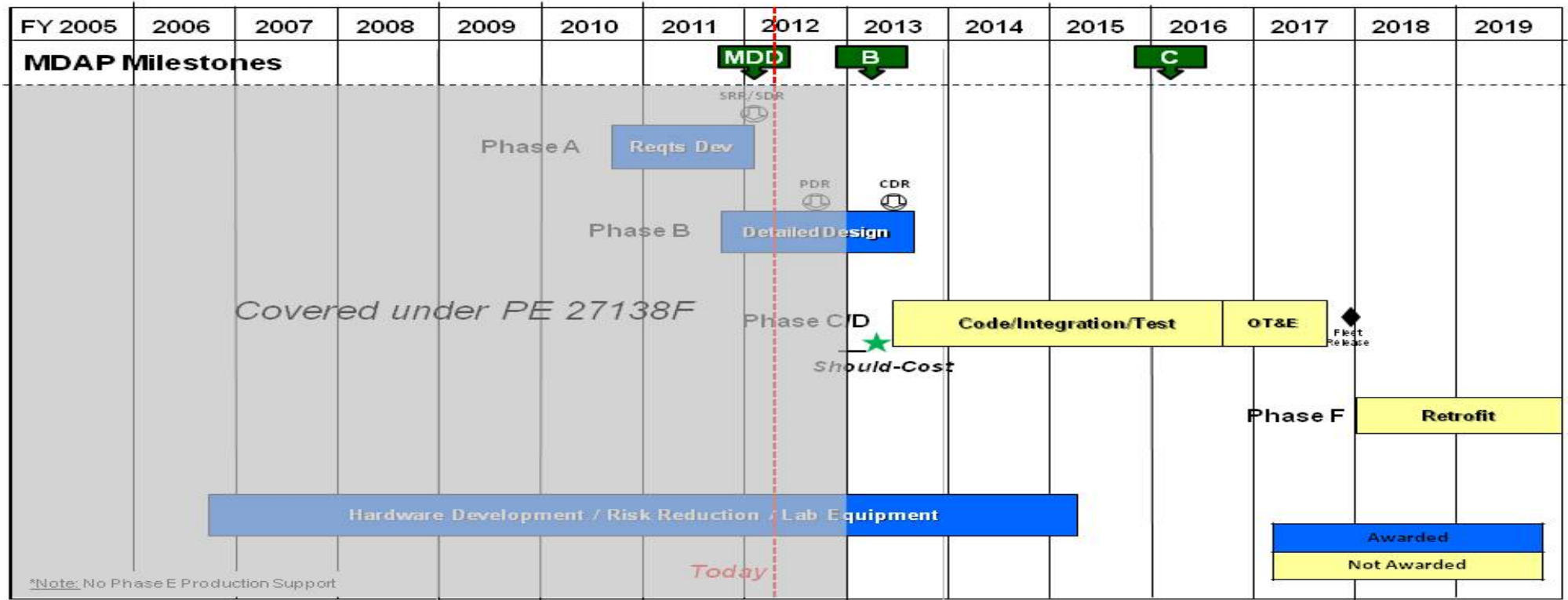
Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0605213F: <i>F-22 INCREMENT 3.2B</i>				PROJECT 654785: <i>F-22 INCREMENT 3.2B</i>				
	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	-	-		140.100		-		140.100	433.300	573.400	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 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0605213F: F-22 INCREMENT 3.2B	PROJECT 654785: F-22 INCREMENT 3.2B

F-22 Increment 3.2B Program Schedule Summary



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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605213F: <i>F-22 INCREMENT 3.2B</i>	PROJECT 654785: <i>F-22 INCREMENT 3.2B</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Increment 3.2B System Requirements Review (SRR)*	4	2011	4	2011
Increment 3.2B System Design Review (SDR)*	4	2011	4	2011
Increment 3.2B Material Development Decision (MDD)*	1	2012	1	2012
Increment 3.2B Preliminary Design Review (PDR)*	4	2012	4	2012
Increment 3.2B Milestone B	1	2013	1	2013
Increment 3.2B Development, Integration, & Test	2	2013	2	2013
Increment 3.2B Critical Design Review	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605221F: <i>KC-46, Next Generation Aerial Refueling Aircraft</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	538.875	877.084	1,815.588	-	1,815.588	1,576.063	1,097.980	567.054	345.007	Continuing	Continuing
655271: <i>KC-46 RDT&E</i>	538.875	877.084	1,815.588	-	1,815.588	1,576.063	1,097.980	567.054	345.007	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The KC-46 program entered source selection on 9 Jul 2010 and awarded the KC-46 Engineering Manufacturing and Development (EMD) contract on 24 Feb 2011. The program schedule and budget request presented in these documents represent a restructure from the FY 2012 President's Budget (PB) based on this 24 Feb 2011 contract award.

In FY 2009, PE 0401221F, KC-X Replacement Tanker efforts were transferred to PE 0605221F, KC-46 Next Generation Aerial Refueling Aircraft, BPAC 655271, KC-46 RDT&E, in order to move funds to Budget Activity (BA) 05 to correctly represent the phase of the KC-46 Program.

The FY 2010 Defense Appropriations Bill directed the following: (1) reduced the FY 2010 President's Budget request by \$132.9M in RDT&E, AF, (2) moved \$291.715M of FY2010 RDT&E, AF into the Tanker Replacement Transfer Fund (TRTF), and (3) left \$15.0M in RDT&E, AF to support program office and source selection activities. On 6 Jan 2011, \$291.615M from TRTF was moved into FY 2010 RDT&E, AF per SECAF Memo to Congress, dated 2 Nov 2010. These funds have been used to fund the KC-46 EMD effort and for program support activities.

The FY 2011 Defense Appropriations Bill directed the following: (1) reduced the FY 2011 PB request by \$325M in RDT&E, AF, (2) moved \$538.875M of FY2011 RDT&E, AF into the TRTF, and (3) left nothing in RDT&E, AF. On 15 Jun 2011, \$538.875M from TRTF was moved into FY 2011 RDT&E, AF per SECAF Memo to Congress, dated 5 May 2011. These funds are being used to fund the KC-46 EMD effort and for program support activities.

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

Replacement of the legacy KC-135 fleet will take place in three stages, known as the KC-X (now the KC-46), KC-Y, and the KC-Z. The initial KC-46 increment will replace roughly a third of the current capability with the purchase of 179 aircraft. The Air Force completed an Analysis of Alternatives (AoA) in Apr 2006 to determine the most appropriate strategy to recapitalize the aging fleet of KC-135 aerial refueling aircraft. Based on this analysis, the Air Force concluded that a strategy of full and open competition to select a commercial derivative replacement tanker aircraft would result in a best value tanker contract. To initiate the first phase of the KC-135 replacement, the KC-46 program released a final Request for Proposal (RFP) on 24 Feb 2010, and entered source selection on 9 Jul 2010. The KC-46 program held a Milestone B Defense Acquisition Board (DAB) on 23 Feb 2011, received approval to enter EMD from OSD AT&L on 24 Feb 2011, and awarded the KC-46 EMD contract to Boeing on 24 Feb 2011 to develop and procure 179 KC-46 aircraft.

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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 0605221F: <i>KC-46, Next Generation Aerial Refueling Aircraft</i>
BA 5: <i>Development & Demonstration (SDD)</i>	

The KC-46 will provide fuel to joint and coalition receivers via a boom or drogue system on every mission and will also augment the airlift fleet with cargo, passenger and aeromedical evacuation capabilities. The KC-46 will be able to operate in day/night and adverse weather conditions to enable deployment, employment, sustainment and redeployment of U.S. joint, allied, and coalition forces. The KC-46 will have communication, navigation and surveillance equipment for world-wide operations; will have the capability to perform missions in chemical and biological environments; will have the capability to operate in low-to-medium threat areas and near-high threat areas with self-defense/protection (both active and passive) capabilities; and will have necessary battle space awareness to mitigate survivability threats.

The KC-46 development effort will also procure the necessary ground and flight test assets to support development/operational test. The program plans to procure four RDT&E aircraft for integration and demonstration of capability that will ultimately be operationally fielded after a successful operational test phase. In addition, both aircrew and maintenance Training System Requirement Analyses (TSRA) are being conducted to determine training requirements. Aircrew and maintenance training systems will be developed and procured via a future trainer-specific source selection, using KC-46 funding. A business case analysis will also be conducted to determine if the engines for the production aircraft will be government furnished or contractor furnished. Initial training and sustainment efforts will be provided via Interim Contractor Support (ICS). KC-46 funding will also support various studies and analyses including the five-nation Future Technology for Aerial Refueling (FTAR) project, and KC-Y/KC-Z planning activities.

This program is in Budget Activity 05, System Development and Demonstration (SDD) because it has passed Milestone B and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	863.875	877.084	1,150.032	-	1,150.032
Current President's Budget	538.875	877.084	1,815.588	-	1,815.588
Total Adjustments	-325.000	-	665.556	-	665.556
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-325.000	-	665.556	-	665.556

Change Summary Explanation

The FY 2010 Defense Appropriations Bill directed the following: (1) reduced the FY 2010 President's Budget request by \$132.9M in RDT&E, AF, (2) moved \$291.715M of FY2010 RDT&E, AF into the Tanker Replacement Transfer Fund (TRTF), and (3) left \$15.0M in RDT&E, AF to support program office and source selection activities. On 6 Jan 2011, \$291.615M from TRTF was moved into FY 2010 RDT&E, AF per SECAF Memo to Congress, dated 2 Nov 2010. These funds have been used to fund the KC-46 EMD effort and for program support activities.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605221F: <i>KC-46, Next Generation Aerial Refueling Aircraft</i>
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The FY 2011 Defense Appropriations Bill directed the following: (1) reduced the FY 2011 PB request by \$325M in RDT&E, AF, (2) moved \$538.875M of FY2011 RDT&E, AF into the TRTF, and (3) left nothing in RDT&E, AF. On 15 Jun 2011, \$538.875M from TRTF was moved into FY 2011 RDT&E, AF per SECAF Memo to Congress, dated 5 May 2011. These funds are being used to fund the KC-46 EMD effort and for program support activities.

The FY 2012 PB was submitted prior to the KC-46 Engineering Manufacturing and Development (EMD) contract award on 24 Feb 2011.

In accordance with the KC-46 Acquisition Decision Memorandum dated 24 Feb 2011, the KC-46 budget in FY 2013 PB has been adjusted to reflect the Service Cost Position and Boeing's development strategy.

FY 2011 funding table note: Adjustments (Cong Directed Transfers -\$325M) are reflected in Other Adjustments.

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

	FY 2011	FY 2012	FY 2013
<p>Title: KC-46 Aircraft Product Development</p> <p>Description: To begin re-capitalizing the aging KC-135 fleet, EMD activities will be conducted to include the following types of activities: Develop a commercial 767-2C aircraft upon which the KC-46 is based; develop the KC-46 military capability and integrate it into the aircraft; build 4 EMD aircraft; procure live fire assets; procure any required Government Furnished Equipment; procure simulator and maintenance data; develop technical manuals and Type 1 training; conduct development and operational testing.</p> <p>FY 2011 Accomplishments: Contract awarded 24 Feb 11, initiating the EMD phase of the program, which includes the development, integration, and demonstration of KC-46 capability.</p> <p>FY 2012 Plans: Continue EMD activities, including the development, integration, and demonstration of KC-46 capability.</p> <p>FY 2013 Plans: Continue EMD activities, including the development, integration, and demonstration of KC-46 capability.</p>	532.306	835.517	1,682.814
<p>Title: KC-46 Trainer Product Development</p> <p>Description: To begin re-capitalizing the aging KC-135 fleet, Trainer Development activities will be conducted to include the following types of activities: Develop an Aircrew Training System; Develop a Maintenance Training System.</p> <p>FY 2011 Accomplishments:</p>	-	16.165	92.751

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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 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0605221F: <i>KC-46, Next Generation Aerial Refueling Aircraft</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Develop solicitation for KC-46 Aircrew & Maintenance Training Systems. FY 2012 Plans: Continue solicitation of KC-46 Aircrew & Maintenance Training System, and award KC-46 Aircrew Training System EMD contract. FY 2013 Plans: Continue solicitation of KC-46 Maintenance Training System, award KC-46 Maintenance Training System EMD contract, and continue activities associated with Aircrew Training System development.				
Title: KC-46 Direct Mission Support Description: Studies and Analysis activity associated with the development, integration, and demonstration of KC-46 capability. In addition, planning activities for future efficiency initiatives, business case analyses, KC-Y & KC-Z planning, and misc. program office support & planning. FY 2011 Accomplishments: KC-46 Studies and Analysis activities. FY 2012 Plans: Continue KC-46 Studies and Analysis activities FY 2013 Plans: Continue KC-46 Studies and Analysis activities		1.355	3.344	3.410
Title: KC-46 Test & Evaluation Description: To begin re-capitalizing the aging KC-135 fleet, Test & Evaluation activities will be conducted to include the following types of activities: Development Test & Evaluation support; Operational Test & Evaluation; Receiver Qualification; Federal Aviation Administration (FAA) support, and other test planning and organizational support. FY 2011 Accomplishments: KC-46 Test & Evaluation activities. FY 2012 Plans: Continue KC-46 Test & Evaluation Activities FY 2013 Plans: Continue KC-46 Test & Evaluation Activities		0.015	7.069	20.030
Title: KC-46 Program Office Support		5.199	14.989	16.583

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605221F: <i>KC-46, Next Generation Aerial Refueling Aircraft</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Description: Program Office Support activity associated with the development, integration, and demonstration of KC-46 capability. Includes requirements such as travel, office supplies, training courses, and service contracts.</p> <p>FY 2011 Accomplishments: Continue KC-46 Program Office Support activity (ASC).</p> <p>FY 2012 Plans: Continue KC-46 Program Office Support activity (ASC)</p> <p>FY 2013 Plans: Continue KC-46 Program Office Support activity (ASC)</p>			
Accomplishments/Planned Programs Subtotals	538.875	877.084	1,815.588

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 0401221F, KC-46, APAF: <i>KC-46 Aircraft Procurement</i>	0.000	0.000	0.000	0.000	0.000	0.000	1,657.014	2,660.216	3,335.285	32,710.832	40,363.347
• PE 0401221F, KC-46, MILCON: <i>KC-46 Military Construction</i>	0.000	0.000	0.000	0.000	0.000	255.700	263.760	306.196	261.152	3,227.719	4,314.527

E. Acquisition Strategy

The KC-46 Program acquisition strategy is to procure an existing commercial, Federal Aviation Administration (FAA) certified aircraft modified to meet USAF requirements. The KC-46 program released a final Request for Proposal (RFP) on 24 Feb 2010, and entered source selection on 9 Jul 2010. The KC-46 program held a Milestone B Defense Acquisition Board (DAB) on 23 Feb 2011, received approval to enter EMD from OSD AT&L on 24 Feb 2011, and awarded the KC-46 contract to Boeing on 24 Feb 2011 to develop and procure 179 KC-46 aircraft. The KC-46 contract procurement was conducted via a full and open competition per Federal Acquisition Regulation (FAR) Part 15, and resulted in a FY 2011 EMD Fixed Price Incentive Firm (FPIF) contract. The EMD phase will develop, build, and test four KC-46 aircraft, and will qualify receiver aircraft.

Production will begin in FY 2015 with two Low-Rate Initial Production (LRIP) lots (Firm Fixed Priced (FFP)) and then Full-Rate Production (FRP) options (FFP with Not to Exceed (NTE) + Economic Price Adjustment (EPA)). The LRIP and FRP options will be exercised following successful completion of Operational Assessments (OAs) for the LRIP decisions, and a successful completion of Initial Operational Test and Evaluation (IOT&E) for the FRP decision.

The Government plans to compete the development, deployment, and sustainment of both the aircrew and maintenance training systems separately.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605221F: <i>KC-46, Next Generation Aerial Refueling Aircraft</i>
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Based on the market research and a cost effectiveness analysis, the engines will be procured as contractor furnished equipment (CFE) for EMD. Following EMD, the Government will assess the potential of breaking out the engines as a separate procurement based on an updated market analysis.

The KC-46 Program is responsible for the development, testing, and production of a drogue-equipped, wing-mounted refueling system to meet Capability Development Document (CDD) thresholds and objectives, for simultaneous refueling of two probe-equipped receivers. The system can be installed or removed from the KC-46 as mission needs dictate.

The long-term support concept for the KC-X is organic two-level maintenance (2LM): organization level (O-level) and depot level (D-level). For the purposes of this program, all maintenance other than O-level shall be referred to as D-level. The product support strategy will use a Contractor Supported Weapon System (CSWS) to provide interim support (Interim Contractor Support (ICS)), during the transition to a Government organic maintenance and supply support capability. Performance Based Logistics (PBL) solutions will be evaluated during EMD as viable approaches to facilitate the transition.

This acquisition strategy requires sufficient aircraft to be designed, tested, and delivered to meet a Required Assets Available (RAA) date of 78 months after contract award. RAA is defined as 18 aircraft meeting final production configuration with all required training and support in place. Initial Operational Capability (IOC) will be attained when the Commander, Air Mobility Command (AMC/CC) determines the unit is operationally war ready – AMC has not yet determined an IOC date. Full Operational Capability (FOC) is expected approximately 24 months after IOC.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605221F: <i>KC-46, Next Generation Aerial Refueling Aircraft</i>	PROJECT 655271: <i>KC-46 RDT&E</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
KC-46 aircraft non-recurring development, integration, and testing, 4 RDT&E tanker aircraft and support	C/FPIF	The Boeing Company:Seattle, WA	812.355	835.517		1,682.814		-		1,682.814	3,233.382	6,564.068	4,393.857
Develop an Aircrew Training System; Develop a Maintenance Training System	C/FPIF	TBD:TBD,	-	16.165		92.751		-		92.751	239.068	347.984	TBD
Subtotal			812.355	851.682		1,775.565		-		1,775.565	3,472.450	6,912.052	

Remarks
The KC-46 aircraft row's "Target Value on Contract" represents the \$4.4B target price of the prime contract. \$4.9B (includes several additional, small dollar Fixed Price contract line item numbers (CLINs)) is the Government's maximum financial liability on the prime contract. Aircrew and Maintenance Trainer Systems contract dates and information will be provided after Aircrew and Maintenance trainer source selections are completed.

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
Studies and Analysis associated with the development, integration, and demonstration of KC-46 capability & future planning	Various	Various:Various,	8.593	3.344		3.410		-		3.410	10.778	26.125	0.000
Subtotal			8.593	3.344		3.410		-		3.410	10.778	26.125	0.000

Remarks
These contracts are on an as needed basis, with various contract types and performing activities.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605221F: <i>KC-46, Next Generation Aerial Refueling Aircraft</i>	PROJECT 655271: <i>KC-46 RDT&E</i>
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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
Testing and Planning support of development & operational test, FAA & military certification, and aircraft qualification activities	Various	Various:Various,	12.346	7.069		20.030		-		20.030	115.249	154.694	0.000
Subtotal			12.346	7.069		20.030		-		20.030	115.249	154.694	0.000

Remarks
Testing and planning activities are performed by Government organizations, with some A&AS support, therefore, the contract information section of this cost category is N/A.

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	KC-46 Program Office:Dayton, W-P AFB, OH	29.841	14.989		16.583		-		16.583	39.927	101.340	0.000
Subtotal			29.841	14.989		16.583		-		16.583	39.927	101.340	0.000

Remarks
Multiple A&AS contracts over \$1M: FY 2011 (total cost \$2.701M); FY 2012 (total cost \$7.774M); FY 2013 (total cost: \$9.471M). All competitive, various contract types, and various locations.

	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		863.135	877.084		1,815.588		-	1,815.588	3,638.404	7,194.211	

Remarks

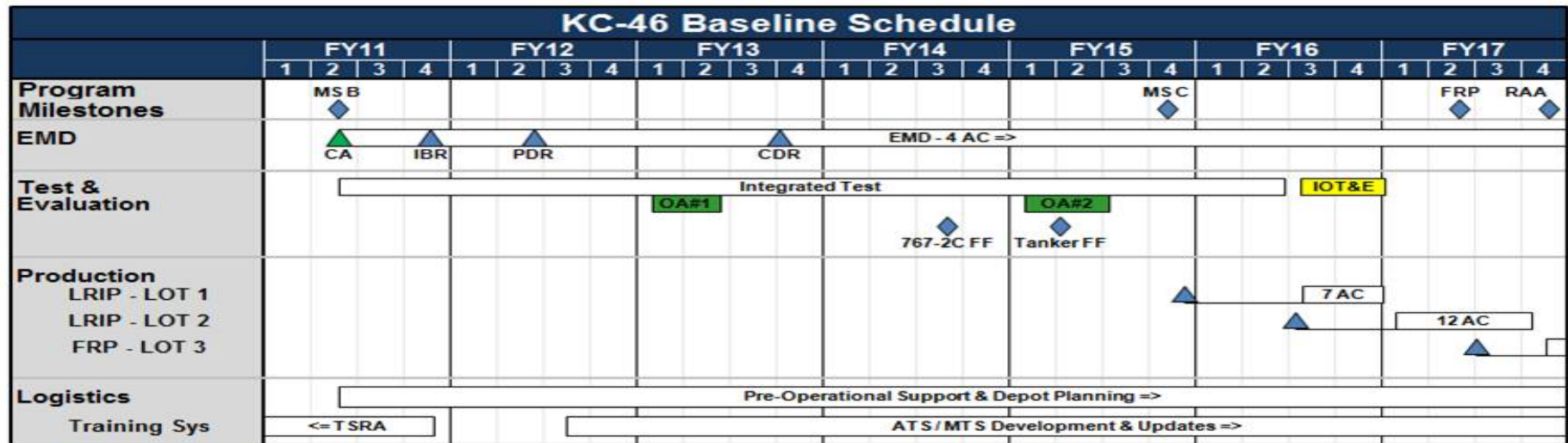
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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605221F: <i>KC-46, Next Generation Aerial Refueling Aircraft</i>	PROJECT 655271: <i>KC-46 RDT&E</i>



U.S. AIR FORCE

KC-46 Schedule



As of: 19 Dec 11

Legend of Acronyms

- | | | |
|---|---|---------------------------------------|
| AC – Aircraft | FRP – Full Rate Production | MTS – Maintenance Training System |
| ATS – Aircrew Training Systems | IBR – Integrated Baseline Review | OA – Operational Assessment |
| CA – Contract Award | IOT&E – Initial Operational Test & Evaluation | PDR – Preliminary Design Review |
| CDR – Critical Design Review | MS B – Milestone B | RAA – Required Assets Available |
| EMD – Engineering Manufacturing & Development | MS C – Milestone C | TSRA – Training System Rqmts Analysis |
| FF – First Flight | | |

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605221F: <i>KC-46, Next Generation Aerial Refueling Aircraft</i>	PROJECT 655271: <i>KC-46 RDT&E</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MS B	2	2011	2	2011
EMD Contract Award	2	2011	2	2011
EMD: KC-46 Aircraft	2	2011	4	2017
Integrated Baseline Review	4	2011	4	2011
Preliminary Design Review	2	2012	2	2012
Critical Design Review	4	2013	4	2013
Test & Evaluation	2	2011	1	2017
Operational Assessment #1	1	2013	2	2013
767-2C First Flight	3	2014	3	2014
Tanker First Flight	2	2015	2	2015
Operational Assessment #2	1	2015	3	2015
Integrated Operational Test & Evaluation	3	2016	4	2016
Low Rate Initial Production - Lot 1	4	2015	4	2016
Low Rate Initial Production - Lot 2	3	2016	4	2017
Full Rate Production - Lot 3	3	2017	4	2017
Pre-Operational Support & Depot Planning	2	2011	4	2017
Training System Requirements Analysis	1	2011	4	2011
Aircrew / Maintenance Training System Development & Updates	3	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605229F: <i>Combat Rescue Helicopter (CRH)</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	11.924	11.113	123.210	-	123.210	397.100	573.048	137.526	71.708	Continuing	Continuing
654364: <i>Combat Rescue Helicopter</i>	-	11.113	123.210	-	123.210	397.100	573.048	137.526	71.708	Continuing	Continuing
657001: <i>Avionics Development and Integration</i>	11.924	-	-	-	-	-	-	-	-	Continuing	Continuing

Note

In FY12, Project Number 657001, Avionics Development and Integration efforts were transferred to PE 0207224F, Project Number 676016, and PE 0101235F, Modification Number 3149T, in order to effectively execute this effort for both HH-60G and UH-1N aircraft.

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 Combat Rescue Helicopter (CRH) program, formerly referred to as HH-60 Recapitalization, will replace the aging HH-60G. 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.

654364 – Combat Rescue Helicopter: Funding will procure a Government Off the Shelf/Contractor Off the Shelf (GOTS/COTS) aircraft configured with mission equipment. There will be required effort to integrate mature subsystems and the associated software. The mature subsystems integration and software development will include human systems integration, advanced communication/net ready, and improved survivability among others.

657001 - Avionics Development and Integration: This effort will fund a fully-integrated avionics upgrade that includes predictive terrain awareness for Air Force helicopters.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605229F: <i>Combat Rescue Helicopter (CRH)</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	12.584	94.113	40.365	-	40.365
Current President's Budget	11.924	11.113	123.210	-	123.210
Total Adjustments	-0.660	-83.000	82.845	-	82.845
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-83.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.660	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	82.845	-	82.845

Change Summary Explanation

FY11 Reprogrammings at Congressional direction.

FY12 congressional directed reduction was requested by the AF based on delay in schedule

FY13 funding increase supports the procurement of two (2) test aircraft

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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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0605229F: <i>Combat Rescue Helicopter (CRH)</i>				PROJECT 654364: <i>Combat Rescue Helicopter</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
654364: <i>Combat Rescue Helicopter</i>	-	11.113	123.210	-	123.210	397.100	573.048	137.526	71.708	Continuing	Continuing
Quantity of RDT&E Articles	0	0	2	0	2	2	5	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 Combat Rescue Helicopter (CRH) program, formerly referred to as HH-60 Recapitalization, will replace the aging HH-60G. 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.

Funding will provide acquisition program activities, milestone (MS) document development and test and evaluation activities. Key activities and products include systems engineering strategy and analysis, technology and manufacturing maturity analysis, test and evaluation activities, life cycle cost estimates, sustainment and logistics analysis and configuration studies.

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

	FY 2011	FY 2012	FY 2013
Title: CRH	-	11.113	123.210
Description: Procure a new helicopter and associated training systems and support elements that leverages fielded, non-developmental technologies to recapitalize HH-60G fleet.			
FY 2012 Plans: Program office support, source selection, and development of statutory & regulatory acquisition documentation in preparation for an FY13 contract award.			
FY 2013 Plans: Finalize Source Selection activities for an FY13 contract award to include program office support and development of statutory & regulatory acquisition documentation. Procurement of two test vehicles. Design, integration, testing, and certification of the			

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605229F: <i>Combat Rescue Helicopter (CRH)</i>	PROJECT 654364: <i>Combat Rescue Helicopter</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
mission components to fulfill contract requirements. EMD including but not limited to non-recurring engineering, test vehicle hardware, software, simulator development, and data.			
Accomplishments/Planned Programs Subtotals	-	11.113	123.210

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 0207229F, APAF, Combat Rescue...: <i>Combat Rescue Helicopter</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	530.719	883.877	Continuing	Continuing

D. Acquisition Strategy

The CRH program will replace the aging HH-60G system with a new air vehicle and associated training systems and support elements. The acquisition strategy is to procure a Government Off The Shelf/Contractor Off the Shelf (GOTS/COTS) aircraft configured with mission equipment. There will be a required effort to integrate mature subsystems and the associated software. The mature subsystems integration and software development will include human systems integration, advanced communication/net ready, and improved survivability among others. The effort will also support the development of training systems as well as all necessary support elements.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605229F: <i>Combat Rescue Helicopter (CRH)</i>	PROJECT 654364: <i>Combat Rescue Helicopter</i>
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Product Development (\$ 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			
Studies and Analysis	TBD	TBD:TBD,	-	1.008		-		-		-	0.000	1.008	0.000
Integration	TBD	TBD:TBD,	-	-		28.900		-		28.900	0.000	28.900	0.000
Data	TBD	Not specified.:	-	-		7.700		-		7.700	0.000	7.700	0.000
Subtotal			-	1.008		36.600		-		36.600	0.000	37.608	0.000

Support (\$ 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			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

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			
System Test and Evaluation	TBD	46 Test Sq:Ft Walton Beach, FL	-	0.421		4.900		-		4.900	0.000	5.321	0.000
Test Aircraft and Associated Support	C/TBD	TBD:	-	-		72.610		-		72.610	0.000	72.610	0.000
Subtotal			-	0.421		77.510		-		77.510	0.000	77.931	0.000

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			
SPO Support	TBD	Various:Dayton, OH	-	4.150		0.159		-		0.159	0.000	4.309	0.000
PMA - Contractor Services	TBD	Various:Dayton, OH	-	4.861		6.085		-		6.085	0.000	10.946	0.000
PMA - Government Costs	TBD	Various:Dayton, OH	-	0.673		2.856		-		2.856	0.000	3.529	0.000
Subtotal			-	9.684		9.100		-		9.100	0.000	18.784	0.000

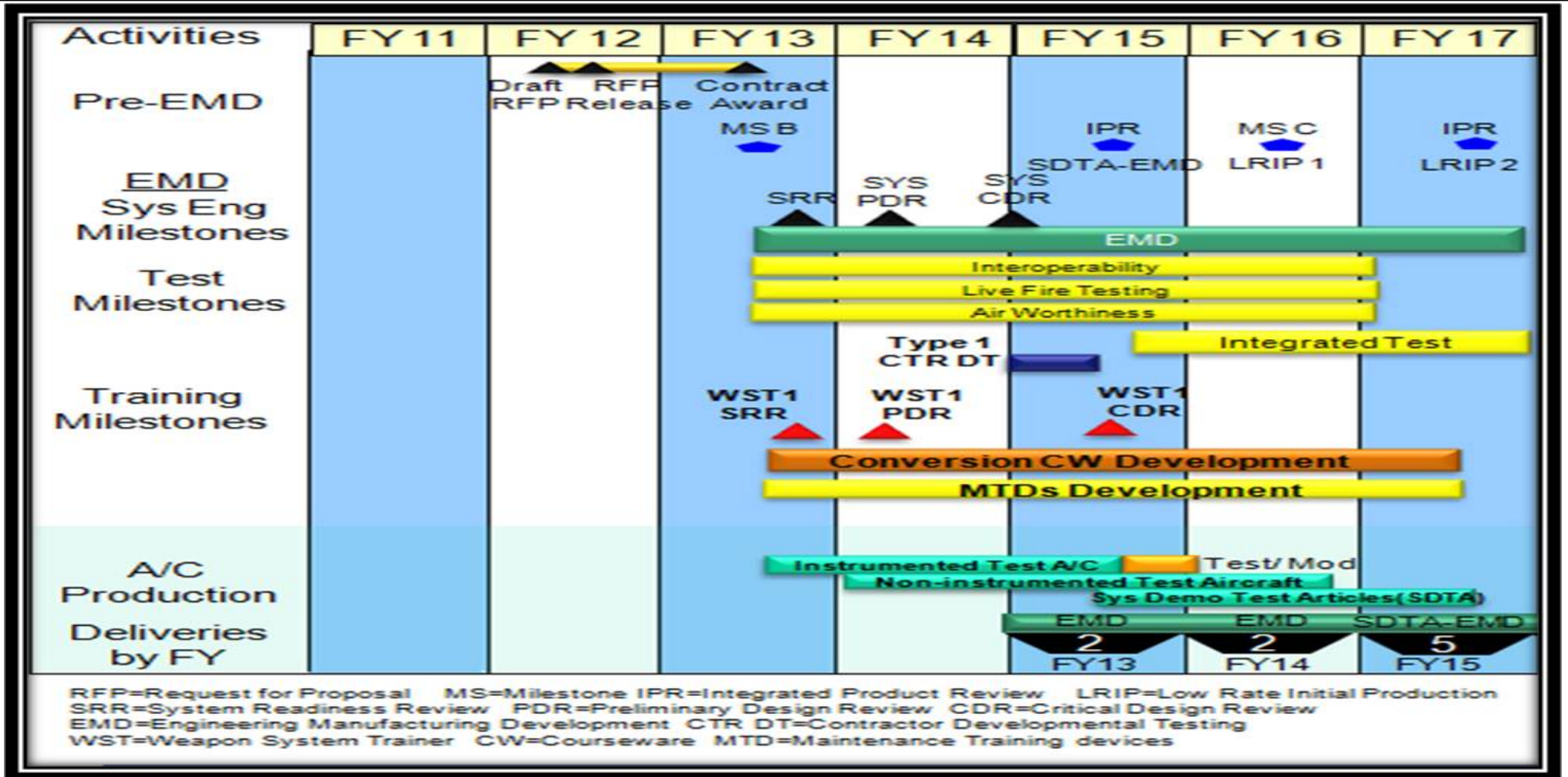
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0605229F: <i>Combat Rescue Helicopter (CRH)</i>			PROJECT 654364: <i>Combat Rescue Helicopter</i>					
	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	-	11.113		123.210		-		123.210	0.000	134.323	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605229F: <i>Combat Rescue Helicopter (CRH)</i>	PROJECT 654364: <i>Combat Rescue Helicopter</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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605229F: <i>Combat Rescue Helicopter (CRH)</i>	PROJECT 654364: <i>Combat Rescue Helicopter</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Acquisition Strategy Panel	2	2012	2	2012
Request for Proposal	3	2012	3	2012
Milestone B	3	2013	3	2013
Source Selection Contract Award	3	2013	3	2013
Test Aircraft Purchased	4	2013	4	2013
Initiate Responsible Test Organization Activities	4	2013	4	2013
System Readiness Review	4	2013	4	2013
Preliminary Design Review	2	2014	2	2014
Low Rate Initial Production/Milestone C	3	2016	3	2016
Interoperability and Live Fire Testing	3	2013	1	2017
Critical Design Review	1	2015	1	2015
Initial Aircraft	3	2016	3	2016
Developmental and Operational Test	1	2016	3	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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0605229F: <i>Combat Rescue Helicopter (CRH)</i>				PROJECT 657001: <i>Avionics Development and Integration</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
657001: <i>Avionics Development and Integration</i>	11.924	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY12, Project number 657001, Avionics Development and Integration efforts were transferred to PE 0207224F, Project Number 67616, and PE 0101235F, APAF, Modification Number 3149T, in order to effectively execute this effort for both HH-60G and UN-1N aircraft.

A. Mission Description and Budget Item Justification

The Air Force Rotary Wing Avionics Development and Integration effort will fund a fully integrated avionics upgrade that includes predictive terrain awareness and traffic collision avoidance warnings for all Air Force helicopters. The Air Force is assessing the requirements of both the UH-1N and HH-60 and developing acquisition solutions unique to each platform.

FY11 is the last year of funding in this Line. The funds have been redistributed to PE 0101235F (WSC H00100) for the UH-1N and PE 0207224F (BPAC 676016) for the HH-60.

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

	FY 2011	FY 2012	FY 2013
Title: Avionics Development & Integration	1.924	-	-
Description: Procure avionics upgrades that include predictive terrain awareness and traffic collision avoidance for UH-1N helicopters.			
FY 2011 Accomplishments: Develop and integrate the avionics upgrade on the UH-1N to include predictive terrain awareness and traffic collision avoidance. The efforts will include studies and analysis.			
Title: Avionics Development and Integration	10.000	-	-
Description: Procure avionics upgrades that include predictive terrain awareness for helicopters.			
FY 2011 Accomplishments: Effort furthers the development of Three Dimensional Landing Zone (3D-LZ) technologies that will aid helicopters in restricted visibility environments. Includes but not limited to: Design of dust penetration algorithm for laser, design and production of common Forward Looking Infrared (FLIR) turret, ground and flight test. The efforts will include studies and analysis.			
Accomplishments/Planned Programs Subtotals	11.924	-	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605229F: <i>Combat Rescue Helicopter (CRH)</i>	PROJECT 657001: <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>
• APAF, PE 0101235F, ICBM Helicopt...: <i>Traffic Alert & Collision Avoidance System</i>	0.000	3.000	3.000	0.000	3.000	4.750	4.750	0.000	0.000	Continuing	Continuing
• RDT&E, PE 0207224, Combat Re...: <i>Avionics Development and Integration</i>	0.000	2.292	2.091	0.000	2.091	3.633	4.528	0.000	0.000	0.000	12.600

D. Acquisition Strategy

The solution set for the UH-1N is expected to be an in-production, non-developmental, Government Off-The-Shelf or Commercial Off-The-Shelf (GOTS/COTS) aircraft modification requiring integration into existing systems. The Three Dimensional Landing Zone (3D-LZ) technology will be further developed using the Air Force Research Labs and OSD's Defense Microelectronics Activity.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605229F: <i>Combat Rescue Helicopter (CRH)</i>	PROJECT 657001: <i>Avionics Development and Integration</i>
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Product Development (\$ 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			
UH-1N Studies and Analysis	TBD	TBD:TBD,	1.924	-		-		-		-	0.000	1.924	0.000
3D-LZ Development	MIPR	DMEA:,	8.900	-		-		-		-	0.000	8.900	0.000
Subtotal			10.824	-		-		-		-	0.000	10.824	0.000

Support (\$ 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			
Not specified.	TBD	Not specified.:Location not provided.	-	-		-		-		-	0.000	0.000	0.000
Subtotal			-	-		-		-		-	0.000	0.000	0.000

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			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

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			
SPO Support	TBD	TBD:TBD,	1.100	-		-		-		-	0.000	1.100	0.000
Subtotal			1.100	-		-		-		-	0.000	1.100	0.000

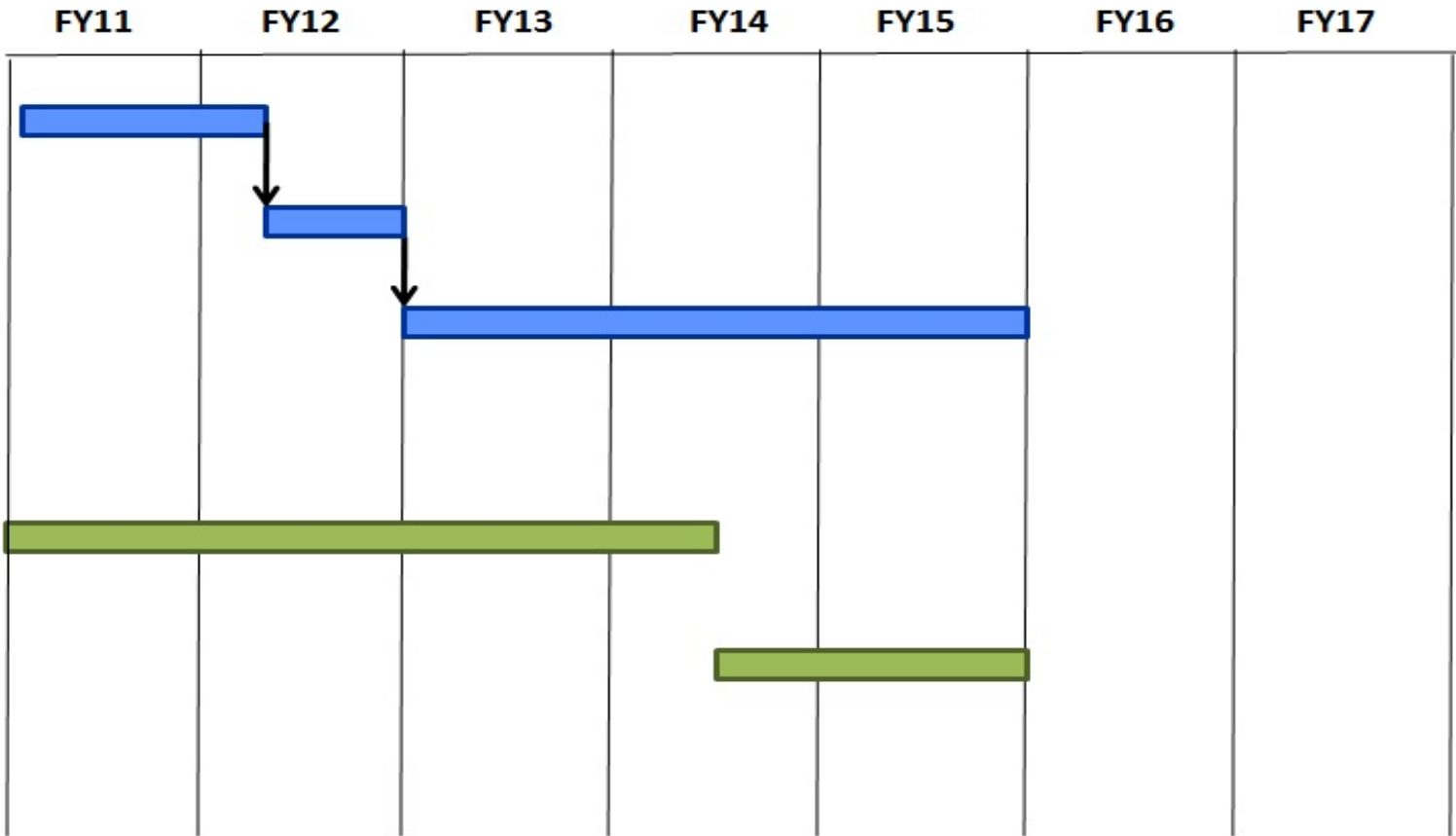
			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			11.924	-		-		-		-	0.000	11.924	0.000

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605229F: <i>Combat Rescue Helicopter (CRH)</i>	PROJECT 657001: <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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605229F: <i>Combat Rescue Helicopter (CRH)</i>	PROJECT 657001: <i>Avionics Development and Integration</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
UH-1N studies and analysis	2	2011	2	2012
UH-1N development and production	2	2012	4	2015
3D-LZ Development and Test	1	2011	3	2014
3D-LZ Integration into HH-60G	3	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605278F: CRT-X
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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	15.008	22.071	19.039	-	19.039	16.054	14.749	10.206	10.341	Continuing	Continuing
655249: <i>HC-130Recap</i>	15.008	22.071	19.039	-	19.039	16.054	14.749	10.206	10.341	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

HC/MC-130 Recapitalization will replace and augment the aging USAF fleets of combat rescue HC-130P/N and special operations MC-130E/P aircraft which are experiencing airworthiness, maintainability and operational limitations. The HC/MC-130 Recap Capabilities Production Document (CPD) defines a common baseline configuration for the weapon system and a FY 2012 Initial Operational Capability. The Joint Requirements Oversight Council (JROC) validated the CPD in Aug 2009.

FY13 HC/MC-130J funding continues follow on systems engineering and development efforts for the basic aircraft.

FY13 HC/MC-130J program RDT&E funding also provides for Trial Kit Install (TKI) of the C-130J Block 7.0 into the HC/MC-130J. The C-130J Block 7.0 program is in PE 0401132F. Block 7.0 primarily addresses mandated Communication, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) requirements. Block 7.0 is an international collaboration as the common core development costs are being shared by each participating nation (United Kingdom, Australia, Italy, Canada, Denmark, Norway, and the United States). Block 7.0 requirements include: a) Communication, Navigation & Identification (CNI) upgrades; b) Dual Multi-Mode Receivers (MMR) with a Civil Global Positioning System; c) CNI special processor upgrade; d) Tactical datalink; and e) Mission computer upgrades.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605278F: CRT-X
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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	15.536	27.071	19.003	-	19.003
Current President's Budget	15.008	22.071	19.039	-	19.039
Total Adjustments	-0.528	-5.000	0.036	-	0.036
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-5.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.449	-			
• Other Adjustments	-0.079	-	0.036	-	0.036

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: Systems Engineering</p> <p>Description: Systems Engineering, integration and test of mature, fielded capabilities</p> <p>FY 2011 Accomplishments: Concluding integration of matured items such as Electro-Optical-Infrared Imaging (EO/IR), Universal Aerial Refueling Receptacle Slipway Installation (UARRSI), Enhanced Cargo Handling System (ECHS), Enhanced Service Life (ESL) Wing, and a Combat Systems Officer (CSO) station on to a C-130J.</p> <p>FY 2012 Plans: Funding provides for systems engineering, test of mature systems, and program management in support of HC/MC-130J Block 7.0 efforts. Funding also provides for follow on development efforts including true altitude display and altitude calibration.</p> <p>FY 2013 Plans: Funding provides for systems engineering, test of mature systems, and program management in support of HC/MC-130J Block 7.0 efforts. Funding also provides for follow on development efforts including true altitude display and altitude calibration.</p>	7.108	6.100	9.700
<p>Title: Test and Evaluation</p> <p>Description: Test and evaluation planning, conduct, and support for developmental and operational testing.</p> <p>FY 2011 Accomplishments: Testing will move into the Developmental Test and Evaluation (DT&E) phase concluding with a DT&E report.</p> <p>FY 2012 Plans:</p>	3.737	2.700	1.900

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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 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0605278F: <i>CRT-X</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Funding provides for OT&E efforts in support of HC/MC-130J, verifying operational effectiveness and suitability. Funds also support Block 7.0 TKI developmental test. FY 2013 Plans: Funding provided to support follow-on test for Block 7.0 TKI.				
Title: Software Integration Description: Funding provides for the integration of C-130J Block 7.0 common block TKI and software into the Block 6.6 configuration resulting in a Block 7.0 configuration on both the HC-130J and MC-130J aircraft variant. FY 2011 Accomplishments: Funding provides for the integration of C-130J Block 7.0 common block TKI and software into the Block 6.6 configuration resulting in a Block 7.0 configuration on both the HC-130J and MC-130J aircraft variant. FY 2012 Plans: Funding provides for the integration of C-130J Block 7.0 common block TKI and software into the Block 6.6 configuration resulting in a Block 7.0 configuration on both the HC-130J and MC-130J aircraft variant. FY 2013 Plans: Funding provides for the integration of C-130J Block 7.0 common block TKI and software into the Block 6.6 configuration resulting in a Block 7.0 configuration on both the HC-130J and MC-130J aircraft variant.		3.863	11.024	5.800
Title: Other Description: Funding provides for unique costs to the government such as contractor test support. FY 2011 Accomplishments: Funding provides for unique costs to the government such as contractor test support. FY 2012 Plans: Funding provides for unique costs to the government such as contractor test support. FY 2013 Plans: Funding provides for unique costs to the government such as contractor test support.		0.300	2.247	1.639
Accomplishments/Planned Programs Subtotals		15.008	22.071	19.039

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605278F: <i>CRT-X</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 0207224F, HC/MC-130 Modificat...: <i>Common Configuration</i>	0.000	0.000	20.400	0.000	20.400	8.300	5.900	2.800	2.000	Continuing	Continuing

E. Acquisition Strategy

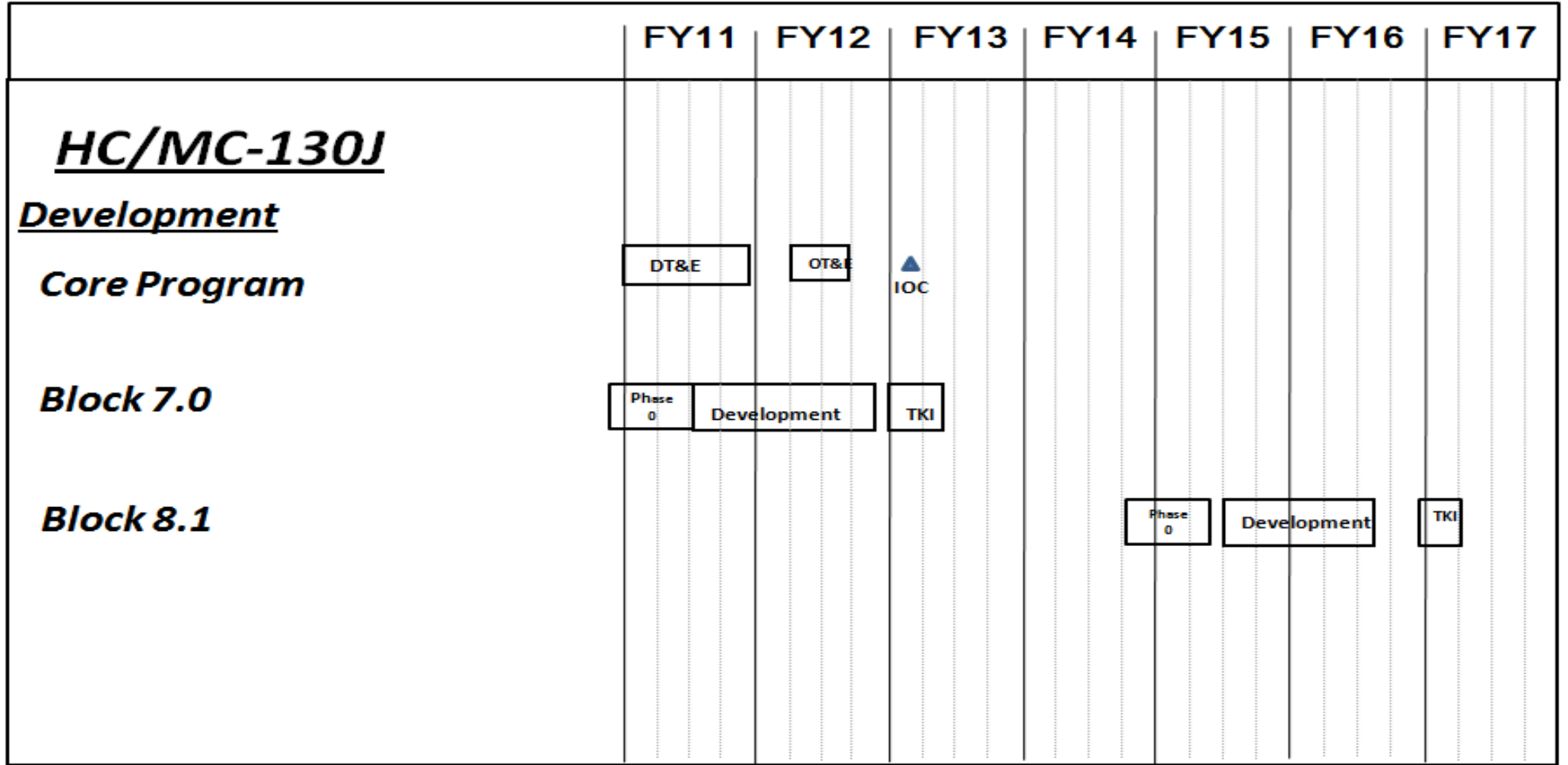
The Milestone C decision for the HC/MC-130J Recap program was approved in April 2010. Lockheed Martin is the prime contractor for the Research & Development work in support of the HC/MC-130J Recap program. Work done to date on the HC/MC-130 Recap program has been on a Cost Plus Award Fee (CPAF) type contract.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605278F: <i>CRT-X</i>	PROJECT 655249: <i>HC-130Recap</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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605278F: <i>CRT-X</i>	PROJECT 655249: <i>HC-130Recap</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
HC/MC-130 Recap Systems Integration & Development	1	2011	4	2011
HC/MC-130 Recap Flight test	1	2011	4	2012
Initial Operational Capability (IOC)	1	2013	1	2013
HC/MC-130 Recap Block 7.0 TKI Development	3	2011	4	2012
HC/MC-130 Recap Block 7.0 TKI	1	2013	2	2013
HC/MC-130 Recap Block 8.1 Phase 0	3	2014	1	2015
HC/MC-130 Recap Block 8.1 Development	3	2015	3	2016
HC/MC-130 Recap Block 8.1 TKI	4	2016	2	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605931F: <i>B-2 Defensive Management 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	-	-	281.056	-	281.056	318.150	254.961	216.195	141.114	Continuing	Continuing
653844: <i>B-2 DMS</i>	-	-	281.056	-	281.056	318.150	254.961	216.195	141.114	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY11, this effort was funded under PE 0101127F, project 675345.
In FY12, this effort was funded under PE 0101127F, project 676023.

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.

BA5 - This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605931F: <i>B-2 Defensive Management System</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	-	-	-	-	-
Current President's Budget	-	-	281.056	-	281.056
Total Adjustments	-	-	281.056	-	281.056
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	281.056	-	281.056

Change Summary Explanation

FY13 increase to the new PE 0605931F, project 653844 for B-2 Defensive Management System, came from funds transferred from PE 0101127F, project 676023.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: B-2 Defensive Management System Modernization (DMS-M)</p> <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: In FY11, this effort was funded under PE 0101127F, project 675345.</p> <p>FY 2012 Plans: In FY12, this effort was funded under PE 0101127F, project 676023.</p> <p>FY 2013 Plans: Continue DMS Modernization technology development leading to Preliminary Design Review and a successful Milestone B decision in FY14.</p>	-	-	281.056
Accomplishments/Planned Programs Subtotals	-	-	281.056

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605931F: <i>B-2 Defensive Management 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 0101127F, project 675345: <i>B-2 DMS-M Development</i>	85.260	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0101127F, project 676023: <i>B-2 DMS-M Development</i>	0.000	41.127	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. 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.

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.

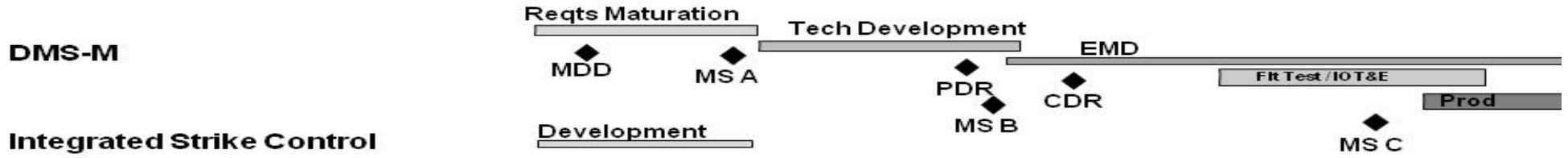
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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605931F: <i>B-2 Defensive Management System</i>	PROJECT 653844: <i>B-2 DMS</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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605931F: <i>B-2 Defensive Management System</i>	PROJECT 653844: <i>B-2 DMS</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
DMS-M Milestone A Decision	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON 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	-	93.867	80.200	-	80.200	110.223	185.340	156.500	134.500	Continuing	Continuing
657007: <i>B61 LIFE EXTENSION PROGRAM</i>	-	83.941	80.200	-	80.200	110.223	185.340	156.500	134.500	Continuing	Continuing
657008: <i>LONG RANGE STAND-OFF</i>	-	9.926	-	-	-	-	-	-	-	Continuing	Continuing

Note

In FY12, B61 Life Extension Program (LEP) efforts were transferred from PE 0604222F, Nuclear Weapons Support, to PE 0101125F, Nuclear Weapon Modernization, in order to support B61 LEP development.

In FY12, LRSO efforts were transferred from PE 0101122F, Air Launched Cruise Missile, to PE 0101125F, Nuclear Weapon Modernization, in order to support LRSO development.

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.

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 purpose of this program element is to conduct and support Air Force and Joint DoD-DOE acquisition activities for the modernization and sustainment of nuclear weapons.

B61 Life Extension Program (LEP) is a joint DoD-DOE effort encompassing feasibility, design, cost, and a down-select effort. DoD leads development and acquisition of B61 Tail Kit Assembly (TKA) as well as integration with current and future aircraft.

The Long Range Stand Off (LRSO) effort will develop a weapon system to replace the Air Force's Air Launched Cruise Missile (ALCM), operational since 1986. The LRSO weapon system will be capable of penetrating and surviving advanced Integrated Air Defense Systems (IADS) from significant stand off range to prosecute strategic targets in support of the Air Force's global attack capability and strategic deterrence core function.

This program is in Budget Activity 5, System Development and Demonstration (SDD), because it is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON 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	-	93.867	158.218	-	158.218
Current President's Budget	-	93.867	80.200	-	80.200
Total Adjustments	-	-	-78.018	-	-78.018
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-78.018	-	-78.018

Change Summary Explanation

FY13 -\$39.395M Adjustment - LRSO program start delayed two years. MSA phase activities, including AoA, will remain on track for FY13 completion but delays Technology Development (TD) phase start to FY15

FY13 -\$38.623M Adjustment - B61 program First Production Unit (FPU) delayed two years as directed by Nuclear Weapons Council. To remain synchronized with the DOE schedule, the DoD TD contract award was delayed to 1QFY13.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON MODERNIZATION</i>	PROJECT 657007: <i>B61 LIFE EXTENSION 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
657007: <i>B61 LIFE EXTENSION PROGRAM</i>	-	83.941	80.200	-	80.200	110.223	185.340	156.500	134.500	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY12, B61 Life Extension Program (LEP) efforts were transferred from PE 0604222F, Nuclear Weapons Support, to PE 0101125F, Nuclear Weapon Modernization.

A. Mission Description and Budget Item Justification

B61 Life Extension Program (LEP): The LEP of the B61 gravity weapon will extend the service life of the weapon. Provides leadership, management, and oversight of the Air Force-led, joint Department of Defense (DoD) - Department of Energy (DOE) B61 Project Officer's Group (POG) and the joint DoD-DOE B61 LEP Development Engineering Phase feasibility, design, cost, and down-select study. Program also provides technical oversight of the DOE nuclear package LEP activities; develops weapons trainers, test equipment, tech data, and training for the B61 LEP; and conducts ground and flight tests and support aircraft integration for the B61 LEP. This may include weapon trainers, test equipment, tech data, training and training materials.

This program is in Budget Activity 5, System Development and Demonstration (SDD), because it is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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

	FY 2011	FY 2012	FY 2013
Title: B61 POG Support	-	4.265	14.541
Description: To meet Air Force statutory requirement to participate in the joint DOE-DoD 6.x nuclear weapons development process through support to and participation in Project Officers Group (POG) activities. Provide technical oversight of the DOE nuclear package LEP activities. Develop qualification, validation and analysis plans. Assess DOE production and manufacturing processes.			
FY 2011 Accomplishments: N/A			
FY 2012 Plans: Provide technical oversight of the DOE nuclear package LEP activities. Support aircraft integration for the B61 LEP. Support the developmental engineering activities for the warhead, ensure system-level integration (all-up round), and begin developmental engineering of trainers and handling gear. Support nuclear certification and technical analysis. Develop qualification, validation and analysis plans.			
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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON MODERNIZATION</i>	PROJECT 657007: <i>B61 LIFE EXTENSION PROGRAM</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Provide technical oversight of the DOE nuclear package LEP activities. Support aircraft integration for the B61 LEP. Support the developmental engineering activities for the warhead, ensure system-level integration (all-up round), and begin developmental engineering of trainers and handling gear. DOE required environmental flight tests. Support nuclear certification and technical analysis. Conduct aircraft integration operational flight plan (OFP) development. Develop qualification, validation and analysis plans.				
<p>Title: B61 LEP Support</p> <p>Description: Support DoD-DOE B61 LEP effort. Develop and acquire B61 tail kit assembly and ensure integration of B61 LEP onto current and future aircraft.</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans: Refine proposed materiel solution concepts. Refine acquisition strategy to include program development schedule and cost estimates. Prepare documentation for Technology Development phase exit criteria and Milestone B entrance criteria.</p> <p>FY 2013 Plans: Refine proposed materiel solution concepts. Refine acquisition strategy to include program development schedule and cost estimates. Prepare documentation for Technology Development phase exit criteria and Milestone B entrance criteria.</p>		-	6.904	7.075
<p>Title: Aircraft Integration</p> <p>Description: Accomplishes B61-12 integration with the B-2A and F-15E using a MIL STD 1760D based aircraft/store interface.</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans: Accomplishes B61-12 integration with the B-2A and F-15E using a MIL STD 1760D based aircraft/store interface. Ensures the logical, electrical, and physical interfaces of the B61-12, B-2A, and F-15E are compatible; as defined in the two-part Interface Control Document (ICD). These integration efforts will ensure that the MIL STD 160 integration and the Tailkit design do not adversely affect B61-12 performance when employed by these aircraft; and supports the operational fielding of the integrated capabilities on these platforms.</p> <p>FY 2013 Plans: Accomplishes B61-12 integration with the B-2A and F-15E using a MIL STD 1760D based aircraft/store interface. Ensures the logical, electrical, and physical interfaces of the B61-12, B-2A, and F-15E are compatible; as defined in the two-part Interface</p>		-	32.550	9.699

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON MODERNIZATION</i>	PROJECT 657007: <i>B61 LIFE EXTENSION PROGRAM</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Control Document (ICD). These integration efforts will ensure that the MIL STD 160 integration and the Tailkit design do not adversely affect B61-12 performance when employed by these aircraft; and supports the operational fielding of the integrated capabilities on these platforms.				
<p>Title: Tech Development Contract</p> <p>Description: Prime contract for tech development effort to develop, mature, and support the design, integration, verification, validation, test, TKA qualification and All-Up-Round (AUR)(Bomb Assembly (BA)and TKA) system qualification, manufacturing processes, and logistic support plans.</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans: Supports integration and testing of the B61-12 system and verification of requirements and validation of performance. Establishes and implements practices that ensure the following are met: requirements flow down, requirement allocation to hardware and software, requirements compliance matrix, system performance, reliability, maintainability, product assurance, testability, producibility and supportability.</p> <p>FY 2013 Plans: Supports integration and testing of the B61-12 system and verification of requirements and validation of performance. Establishes and implements practices that ensure the following are met: requirements flow down, requirement allocation to hardware and software, requirements compliance matrix, system performance, reliability, maintainability, product assurance, testability, producibility and supportability.</p>		-	39.301	46.033
<p>Title: Test Support</p> <p>Description: Test support for B61 LEP Tech Development</p> <p>FY 2012 Plans: Test support for B61 Tech Development</p> <p>FY 2013 Plans: Test support for B61 Tech Development</p>		-	0.921	2.852
Accomplishments/Planned Programs Subtotals		-	83.941	80.200

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON MODERNIZATION</i>	PROJECT 657007: <i>B61 LIFE EXTENSION PROGRAM</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>
• PE 0604222F, RDT&E: <i>N/A</i>	25.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Full and open competition as approved by the MDA.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON MODERNIZATION</i>	PROJECT 657007: <i>B61 LIFE EXTENSION PROGRAM</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
B61 LEP TD Contract	C/TBD	TBD:,	-	39.301	Oct 2012	46.033	Oct 2012	-		46.033	Continuing	Continuing	TBD
Subtotal			-	39.301		46.033		-		46.033			

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
Aircraft Integration	MIPR	Various:,	-	31.488	Oct 2012	9.699	Oct 2012	-		9.699	Continuing	Continuing	0.000
Subtotal			-	31.488		9.699		-		9.699			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
Test Support for B61 LEP Tech Development	MIPR	RTO:,	-	1.790	Oct 2012	2.852	Oct 2012	-		2.852	Continuing	Continuing	0.000
Subtotal			-	1.790		2.852		-		2.852			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
B61 POG Support	TBD	Not specified.:	-	5.917	Oct 2011	14.541	Oct 2012	-		14.541	Continuing	Continuing	TBD
PMA - Contractor Support	Various	Various:,	-	2.185	Oct 2011	2.210	Oct 2012	-		2.210	0.000	4.395	0.000
PMA - Government Costs	Various	Various:,	-	3.260	Oct 2011	4.865	Oct 2012	-		4.865	0.000	8.125	0.000
Subtotal			-	11.362		21.616		-		21.616			

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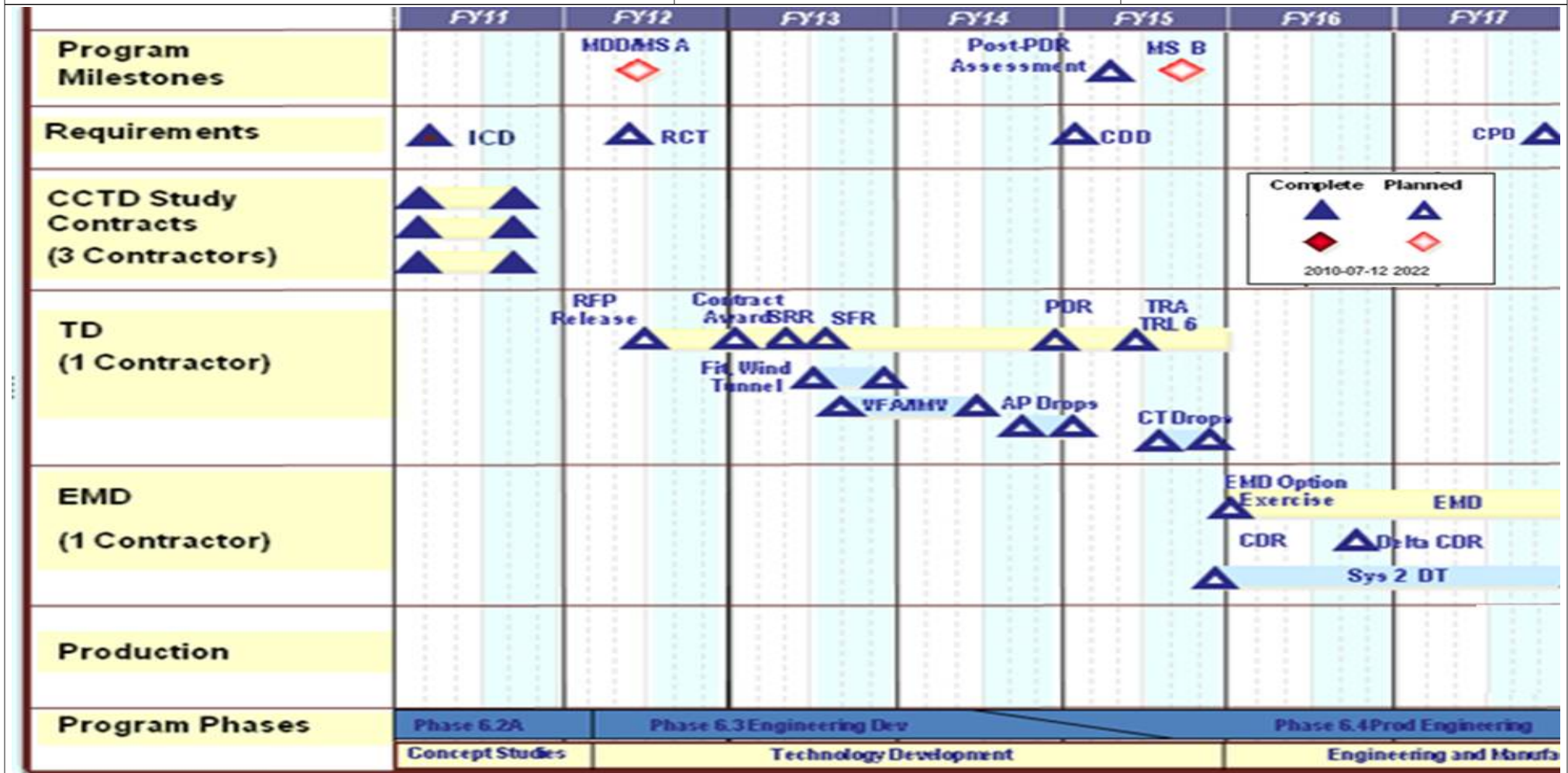
Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON MODERNIZATION</i>				PROJECT 657007: <i>B61 LIFE EXTENSION PROGRAM</i>				
	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	-	83.941		80.200		-		80.200			

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON MODERNIZATION</i>	PROJECT 657007: <i>B61 LIFE EXTENSION PROGRAM</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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON MODERNIZATION</i>	PROJECT 657007: <i>B61 LIFE EXTENSION PROGRAM</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Combined Materiel Development Decision / Milestone A Decision	2	2012	2	2012
Technology Development Contract	1	2013	4	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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON MODERNIZATION</i>				PROJECT 657008: <i>LONG RANGE STAND-OFF</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
657008: <i>LONG RANGE STAND-OFF</i>	-	9.926	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2012 LRSO efforts were transferred from PE 0101122F, Air Launched Cruise Missile, project number 674797, to PE 0101125F, Nuclear Weapon Modernization, project number 657008 in order to support LRSO development.

In FY2013 LRSO efforts were transferred from PE 0101125F, Nuclear Weapon Modernization, project number 657008, to PE 0604932F, Long Range Stand Off, project number 657011, in order to support LRSO development.

A. Mission Description and Budget Item Justification

The Long Range Stand Off (LRSO) effort will develop a weapon system to replace the Air Force's Air Launched Cruise Missile (ALCM), operational since 1986. The LRSO weapon system will be capable of penetrating and surviving advanced Integrated Air Defense Systems (IADS) from significant stand off range to prosecute strategic targets in support of the Air Force's global attack capability and strategic deterrence core function.

This program is in Budget Activity 5, System Development and Demonstration (SDD), because it is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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

	FY 2011	FY 2012	FY 2013
Title: Materiel Solution Analysis (MSA) & AoA	-	9.926	-
Description: Conduct LRSO MSA/AoA activities.			
FY 2011 Accomplishments: Effort moved from Air Launched Cruise Missile PE 0101122F in FY12			
FY 2012 Plans: Accomplish LRSO AoA. Activities include: Concept refinement, technology analyses, modeling and simulation support, engineering studies, program cost and schedule estimation, acquisition strategy development, risk reduction efforts, initial requirements definition, Milestone A preparation to include development of MSA exit/Technology Development (TD) entrance documentation.			
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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON</i> <i>MODERNIZATION</i>	PROJECT 657008: <i>LONG RANGE STAND-OFF</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Effort moved to PE 64932F - Long Range Standoff Weapon			
Accomplishments/Planned Programs Subtotals	-	9.926	-

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 0101122F, RDT&E: <i>Air Launched Cruise Missile</i>	3.197	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0604392F, RDT&E: <i>Long Range Standoff Weapon</i>	0.000	0.000	2.004	0.000	2.004	5.000	41.698	209.082	352.932	Continuing	Continuing

D. Acquisition Strategy

Development of the LRSO acquisition/contract strategy continues to evolve pending the completion of the AoA and the evaluation of alternative weapon system concepts.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON MODERNIZATION</i>	PROJECT 657008: <i>LONG RANGE STAND-OFF</i>
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Product Development (\$ 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			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Support (\$ 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			
Materiel Solution Analysis Phase Activities	Various	Various:Various,	-	8.067	Dec 2011	-		-		-	Continuing	Continuing	TBD
Subtotal			-	8.067		-		-		-			

Remarks
 In FY11, LRSO efforts were funded in PE 0101122F, Air Launched Cruise Missile, project number 674797.
 In FY13, LRSO efforts were transferred from PE 0101125F, Nuclear Weapon Modernization, project number 657008, to PE 0604932F, Long Range Stand Off, project number 657011.

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			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

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			
Program Management Administration	Various	Various:,	-	1.859	Dec 2011	-		-		-	Continuing	Continuing	TBD
Subtotal			-	1.859		-		-		-			



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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 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON MODERNIZATION</i>				PROJECT 657008: <i>LONG RANGE STAND-OFF</i>				
	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	-	9.926		-		-		-			

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON MODERNIZATION</i>	PROJECT 657008: <i>LONG RANGE STAND-OFF</i>

	FY11	FY12	FY13	FY14	FY15	FY16	FY17
MDD Preparation	 MDD						
Materiel Solution Analysis Phase							

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0101125F: <i>NUCLEAR WEAPON MODERNIZATION</i>	PROJECT 657008: <i>LONG RANGE STAND-OFF</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Materiel Development Decision Preparation	1	2011	4	2011
Materiel Development Decision	4	2011	4	2011
Materiel Solutions Analysis 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0207100F: <i>LAAR 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	-	13.721	-	-	-	-	-	-	-	Continuing	Continuing
657005: <i>Light Attack</i>	-	13.721	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Light Attack Armed Reconnaissance (LAAR) program provides the USAF with a non-developmental training aircraft suitable for training USAF Air Advisors in conducting strike and armed reconnaissance operations under Irregular Warfare (IW) conditions. The USAF Air Advisors will deploy and train pilots from partner nations (PN) in support of Building Partnership Capacity (BPC) for lesser developed PN. LAAR provides the USAF with a CONUS based capability to prepare PN to conduct indigenous aerial operations. US Air Force provided training better enables PN to employ a light attack and reconnaissance capability using a representative platform consistent with the partner nation's sustainment and operational needs.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

The LAAR program is terminated. Light attack air advisors will train in theater using methods similar to those already proven in other light aircraft. The Air Force has the ability to improve the capabilities of Partner Nation Air Forces using the foundational programs without procuring a niche aircraft to accomplish the training.

<u>B. Program Change Summary (\$ in Millions)</u>	<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	-	23.721	-	-	-
Current President's Budget	-	13.721	-	-	-
Total Adjustments	-	-10.000	-	-	-
• Congressional General Reductions	-	-	-	-	-
• Congressional Directed Reductions	-	-10.000	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	-	-	-	-	-
• Congressional Directed Transfers	-	-	-	-	-
• Reprogrammings	-	-	-	-	-
• SBIR/STTR Transfer	-	-	-	-	-
• Other Adjustments	-	-	-	-	-

Change Summary Explanation

The LAAR program is terminated. Light attack air advisors will train in theater using methods similar to those already proven in other light aircraft. The Air Force has the ability to improve the capabilities of Partner Nation Air forces using the foundational programs without procuring a niche aircraft to accomplish the training.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0207100F: <i>LAAR Squadrons</i>
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FY12 received Congressional Mark for -\$10M

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: Light Attack</p> <p>Description: Effort will acquire an aircraft and modify it to satisfy the requirement to conduct training (strike and armed reconnaissance) for Irregular Warfare (IW) operations in support of Building Partnership Capacity (BPC) for lesser developed partner nations (PN). Funding supports system engineering, prime mission equipment (PME) integration, and test planning and execution, development and operational testing.</p> <p>FY 2012 Plans: No funds will be utilized for LAAR in FY12.</p> <p>The LAAR program is terminated. Light attack air advisors will train in theater using methods similar to those already proven in other light aircraft. The Air Force has the ability to improve the capabilities of Partner Nation Air Forces using the foundational programs without procuring a niche aircraft to accomplish the training.</p>	-	13.721	-
Accomplishments/Planned Programs Subtotals	-	13.721	-

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	Total Cost
			Base	OCO	Total					Complete	
• PE 0207100F, LAAR APAF BA 05 BP10: <i>Light Attack</i>	0.000	115.049	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. Acquisition Strategy
The LAAR program is terminated. Light attack air advisors will train in theater using methods similar to those already proven in other light aircraft. The Air Force has the ability to improve the capabilities of Partner Nation Air Forces using the foundational programs without procuring a niche aircraft to accomplish the training.

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

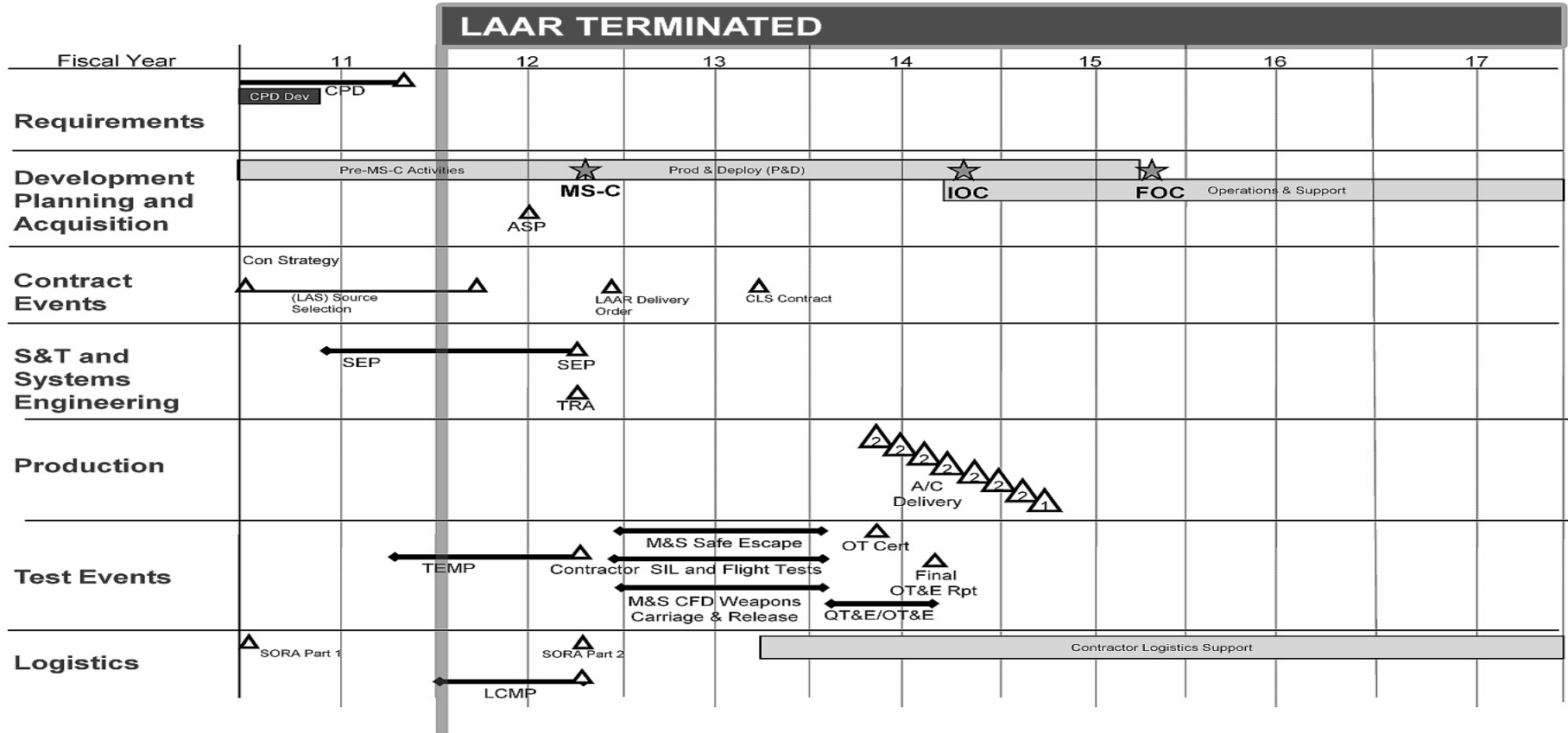
DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE
 PE 0207100F: LAAR Squadrons

PROJECT
 657005: Light Attack

Light Attack/Armed Reconnaissance (LAAR) DP Schedule



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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0207604F: <i>READINESS 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	-	-	0.310	-	0.310	-	-	-	-	Continuing	Continuing
652286: <i>Combat Training Range Equipment</i>	-	-	0.310	-	0.310	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Provides for development of Center Schedule Enterprise (CSE) program to provide an Air Force wide system to schedule, manage, and report utilization of all ranges and airspace. The system will meet new FAA interface requirements, replacing 31 different non-interoperable systems currently in use and provides a single common method of scheduling ranges and airspace to all AF and other DoD users.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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			0.310	-	0.310
Total Adjustments			0.310	-	0.310
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	0.310	-	0.310

Change Summary Explanation

FY13 New Start for development of enterprise Center Schedule Enterprise scheduling tool

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Center Scheduling Enterprise (CSE)	-	-	0.310
Description: Develop AF wide tool to schedule, manage, and report utilization of all ranges and airspace			

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0207604F: <i>READINESS TRAINING</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
FY 2013 Plans: Develop and implement CSE tool			
Accomplishments/Planned Programs Subtotals	-	-	0.310

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
Standard contracting practices will be used to maximize 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-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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0207604F: <i>READINESS TRAINING</i>	PROJECT 652286: <i>Combat Training Range Equipment</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Develop and deploy CSE tool	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0207701F: <i>Full Combat Mission 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	55.539	29.826	14.861	-	14.861	15.183	7.303	11.612	11.815	Continuing	Continuing
655012: <i>Full Combat Mission Training</i>	22.344	16.122	5.804	-	5.804	2.578	2.661	2.758	2.889	Continuing	Continuing
655354: <i>F-16 Block 40/50 MTC</i>	33.195	13.704	9.057	-	9.057	12.605	4.642	8.854	8.926	Continuing	Continuing

A. Mission Description and Budget Item Justification

Full Combat Mission Training (FCMT) supports Air Force Distributed Mission Operations (DMO) and Live-Virtual-Constructive (LVC) integration. DMO is an operational readiness initiative enabling the USAF to exercise and train at the operational and strategic levels of war while facilitating unit-level training. Networked LVC components form the integrated DMO battlespace by linking geographically distributed high fidelity combat and combat support training devices, including Command and Control (C2) and Intelligence, Surveillance, and Reconnaissance (ISR) systems. RDT&E for Project 5012, FCMT, efforts are focused on development, demonstration, and transitioning of critical functions associated with the DMO/LVC network and linked simulators. Project 5354, F-16 Block 40/50 Mission Training Centers (MTC), efforts are focused on development and demonstration of the F-16 Block 40/50 MTC.

This program is funded in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting Engineering and Manufacturing Development tasks aimed at meeting validated requirements prior to full-rate production.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	57.393	39.826	24.442	-	24.442
Current President's Budget	55.539	29.826	14.861	-	14.861
Total Adjustments	-1.854	-10.000	-9.581	-	-9.581
• Congressional General Reductions	-	-	-	-	-
• Congressional Directed Reductions	-	-10.000	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	-	-	-	-	-
• Congressional Directed Transfers	-	-	-	-	-
• Reprogrammings	-	-	-	-	-
• SBIR/STTR Transfer	-1.561	-	-	-	-
• Other Adjustments	-0.293	-	-9.581	-	-9.581

Change Summary Explanation

FY11: Cong General Reductions -\$0.293 are reflected in Other Adjustment Row.

FY12: Congressional Directed reduction of \$10M

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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 5: <i>Development & Demonstration (SDD)</i>	PE 0207701F: <i>Full Combat Mission Training</i>

FY13: Program is reduced due to higher DoD 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 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0207701F: <i>Full Combat Mission Training</i>				PROJECT 655012: <i>Full Combat Mission Training</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
655012: <i>Full Combat Mission Training</i>	22.344	16.122	5.804	-	5.804	2.578	2.661	2.758	2.889	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The program has been funded to latest cost estimate.

A. Mission Description and Budget Item Justification

Full Combat Mission Training (FCMT) supports Air Force Distributed Mission Operations (DMO) and Live-Virtual-Constructive (LVC) integration. DMO is an operational readiness initiative enabling the USAF to exercise and train at the operational and strategic levels of war while facilitating unit-level training. FY13 FCMT funding provides research in areas benefiting the AF DMO/LVC environment as a whole. Provides research and development to facilitate integration of fielded and newly acquired, Air Force owned training devices into DMO/LVC networks. Enhances the quality of training for the systems added to the network. Enables aircrews to network with LVC components to form the integrated DMO battlespace. Links geographically distributed, high-fidelity combat and combat support training devices including Command and Control (C2) and Intelligence, Surveillance, and Reconnaissance (ISR) systems. Develops, demonstrates and inserts multi-level security capability. This capability allows the warfighters at home station to exercise and train at the operational and strategic levels of war as well as conduct networked unit-level training.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Cross Domain Solutions (CDS)	4.426	4.631	2.590	-	2.590
Description: Development, demonstration and insertion of multi-level security capability.					
FY 2011 Accomplishments: Continue CDS for F-15E and B-2					
FY 2012 Plans: Cross Domain Solution as required for operational systems on the DMO Network including B-2 and F-35. Development, demonstration and insertion of multi-level security solutions.					
FY 2013 Base Plans: Develop Core Mission Enclave (CME) multilevel security approach to include, but not limited to, F-35 and B-2.					
FY 2013 OCO 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 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0207701F: <i>Full Combat Mission Training</i>		PROJECT 655012: <i>Full Combat Mission Training</i>	
B. Accomplishments/Planned Programs (\$ in Millions)					
N/A					
Title: Develop DMO Capabilities					
Description: Continue development, demonstration, studies and insertion of DMO/LVC related technologies and proficiency based continuation training strategies.					
FY 2011 Accomplishments: Continue network re-architecture initiative					
FY 2012 Plans: Enhance visual fidelity of F-22 simulators to support DMO capability. Develop network architecture initiatives for technology refresh and cost reductions; side by side feasibility testing of DMO and Global Information Grid (GIG) network.					
FY 2013 Base Plans: Enhance visual fidelity of F-22 and B-2 simulators to support DMO capability. Develop network architecture initiatives for technology refresh and cost reductions; side by side feasibility testing of DMO and Global Information Grid (GIG) network.					
FY 2013 OCO Plans: N/A					
Title: Validation of warfighter seasoning					
Description: Studies to assess and validate warfighter seasoning required in continuation training and accreditation of portions of this process.					
FY 2011 Accomplishments: Complete F-15E and F-16 multirole process and results. Complete Joint Tactical Air Controller (JTAC) Close Air Support (CAS) Minimum Essential Competencies (MEC) refresher; Refine development of MEC process for schoolhouse tactical training using A-10 and F-22 mission areas and schoolhouses as initial domains; Refine development of methods to link schoolhouse initial competency sets and MEC ops definitions and data; Validate close air support distributed mission training using competency-based methods in live and virtual environments.					
FY 2012 Plans: Evaluate training impact of Live, Virtual, and Constructive (LVC) integration with 4th generation systems; Complete evaluation of different mixes of live and virtual training in support of initial and refresher mission					
	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
	11.691	8.343	3.040	-	3.040
	2.546	1.022	-	-	-

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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 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0207701F: <i>Full Combat Mission Training</i>		PROJECT 655012: <i>Full Combat Mission Training</i>	
B. Accomplishments/Planned Programs (\$ in Millions)					
<p>proficiency; Validate methodology for quantifying knowledge and skill proficiency for air to air and air to ground mission areas; Develop methods to integrate competency-based data into existing USAF sortie and experience tracking systems; Demonstrate proficiency tracking tools in two identified mission areas; Demonstrate integration of schoolhouse initial competency set data with recurring MEC requirements data for comprehensive LVC training development and management.</p> <p>FY 2013 Base Plans: N/A</p> <p>FY 2013 OCO Plans: N/A</p>					
<p>Title: Develop objective performance enhancement</p> <p>Description: Studies to develop objective performance enhancement and measurement tools, for use in the DMO/LVC environment.</p> <p>FY 2011 Accomplishments: Validate air-to-air and air-to-ground performance measures and visualization tools; Complete field evaluations of persistent readiness assessment in F-15C, F-16, and F-22 live and virtual contexts; Demonstrate integrated Close Air Support common metrics for ground controllers and air platforms; Validate metrics and visualization tools for remotely piloted aircraft readiness assessment; Complete validation of authoring tools to rapidly develop metrics for ops unit assessments and certification.</p> <p>FY 2012 Plans: Complete integrated data summaries of LVC performance measures for 4th gen systems; Design and validate performance based tools for mission planning and after action review; Develop common metrics and data specifications to permit measures collected in live and virtual contexts to be shared, integrated, and displayed in a common debriefing technology; Demonstrate LVC performance measurement across mission areas and platforms; Demonstrate integration of Remotely Piloted Aircraft (RPA), Air to Air (A/A), and Air to Ground (A/G) measures and metrics for at least two common LVC scenarios.</p> <p>FY 2013 Base Plans: N/A</p> <p>FY 2013 OCO Plans:</p>					
	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
	1.022	1.022	-	-	-

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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 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0207701F: <i>Full Combat Mission Training</i>		PROJECT 655012: <i>Full Combat Mission Training</i>	
B. Accomplishments/Planned Programs (\$ in Millions)					
N/A					
Title: Identify training and rehearsal gaps					
Description: Studies to identify training and rehearsal gaps in DMO/LVC architecture based on current weapons system and operational Tactics, Training, Procedures (TTPs).					
FY 2011 Accomplishments: Complete initial USAF and Australian (RAAF) coalition mission training evaluation; Conduct field evaluation of integrated performance measurement and sortie tracking methods for ops readiness certification; Conduct additional studies of alternate mixes of live and virtual training with F-15E and F-16 ops squadrons; Complete second skill decay study evaluating impacts of different mixes of live and virtual training on combat skill retention and decay; Complete initial evaluation of Nellis LVC operational assessment. Integrate data into next spiral of Nellis LVC operational assessment; Demonstrate common aircraft, range, and virtual environment performance measurement and tracking in Nellis LVC ops assessment.					
FY 2012 Plans: Refine LVC architecture and instrumentation to permit training effectiveness evaluations of 4th and 5th gen systems interoperating in LVC; Complete initial training effectiveness evaluation of Remotely Piloted Aircraft (RPA) competency-based training with Combat Air Force units; Complete training effectiveness evaluations of JTAC training and rehearsal integrated with Air Support Operations and with RPA virtual and constructive environments; Complete field evaluation of deployable tactical trainers as part of United States Air Forces Europe (USAFE) LVC Construct; Complete assessment of the integration of JTAC training within the context of coalition mission training research and ops support with the British Royal Air force (RAF).					
FY 2013 Base Plans: N/A					
FY 2013 OCO Plans: N/A					
Title: Other Network Studies					
Description: Research and development to provide for the integration of fielded and newly introduced, Air Force high-fidelity flight and mission trainers.					
FY 2011 Accomplishments:					
	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
	1.022	1.022	-	-	-
	-	-	-	-	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0207701F: <i>Full Combat Mission Training</i>	PROJECT 655012: <i>Full Combat Mission Training</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 study and demonstration of the DMO network conversion to the GIG FY 2012 Plans: N/A FY 2013 Base Plans: N/A FY 2013 OCO Plans: N/A					
Title: Program Office Support Description: Program Office Support FY 2011 Accomplishments: Program Office Support FY 2012 Plans: Program Office Support. FY 2013 Base Plans: Program Office Support. FY 2013 OCO Plans: N/A	1.637	0.082	0.174	-	0.174
Accomplishments/Planned Programs Subtotals	22.344	16.122	5.804	-	5.804

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 0207701F, Full Combat Mission...: <i>Full Combat Mission Training,</i>	172.735	184.289	215.773	0.000	215.773	267.903	273.661	261.828	265.987	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0207701F: <i>Full Combat Mission Training</i>	PROJECT 655012: <i>Full Combat Mission Training</i>

D. Acquisition Strategy

Each platform joining the Distributed Mission Operations (DMO)/Live-Virtual-Constructive (LVC) environment selects its own acquisition strategy based on using Command needs, Business Case Analysis (BCA) and the magnitude of the training system changes required to provide DMO capability. The initial systems in the DMO/LVC environment; F-15C, AWACS, F-16 Block 40/50 and F-15E, all required new training systems. In addition, the Operations and Integration capability had to be created. The Training Simulation Service (TSS) acquisition strategy was used to meet a portion of these requirements. In the TSS approach, the contractor owns and provides the simulator equipment, maintains simulator concurrency with weapon systems, and has incentives to keep the equipment up to date with simulator and network technologies. The FY07 National Defense Authorization Act (NDAA) specifically limited the Air Force's ability to acquire military flight simulators with service contracts. As a result, training capability currently provided on the F-16 Mission Training Center (MTC) is being replaced under a separate program with training provided with procured flight simulators. (Acquisition of the F-16 Block 40/50 MTCs is detailed under the Project 655354 in this document.) The FY08 NDAA language allows continued use of the service contract approach on systems where it was already in use. Currently fielded and projected Air Force-owned Flight and Mission Training Systems without DMO/LVC capability will be modified using Full Combat Mission Training (FCMT) funds to ensure compatibility with the DMO-LVC environment. Additional DMO capable trainers will be acquired for those systems where current quantities are inadequate to meet training requirements using FCMT funds.

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 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0207701F: Full Combat Mission Training	PROJECT 655012: Full Combat Mission Training

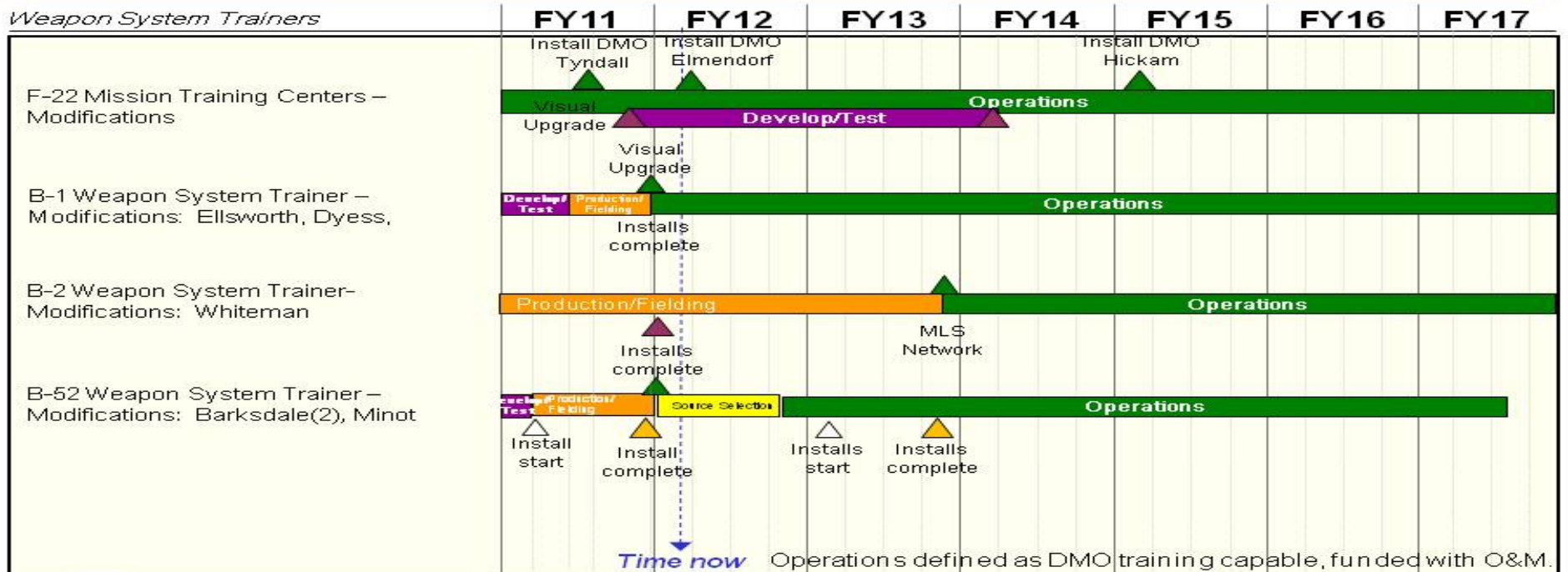


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CAF DMO Schedule

AF Owned Systems I

Weapon System Trainers



- Concept activities
- Production / fielding
- Operations / sustainment
- Source Selection
- Design / development
- △ ◇ Key events

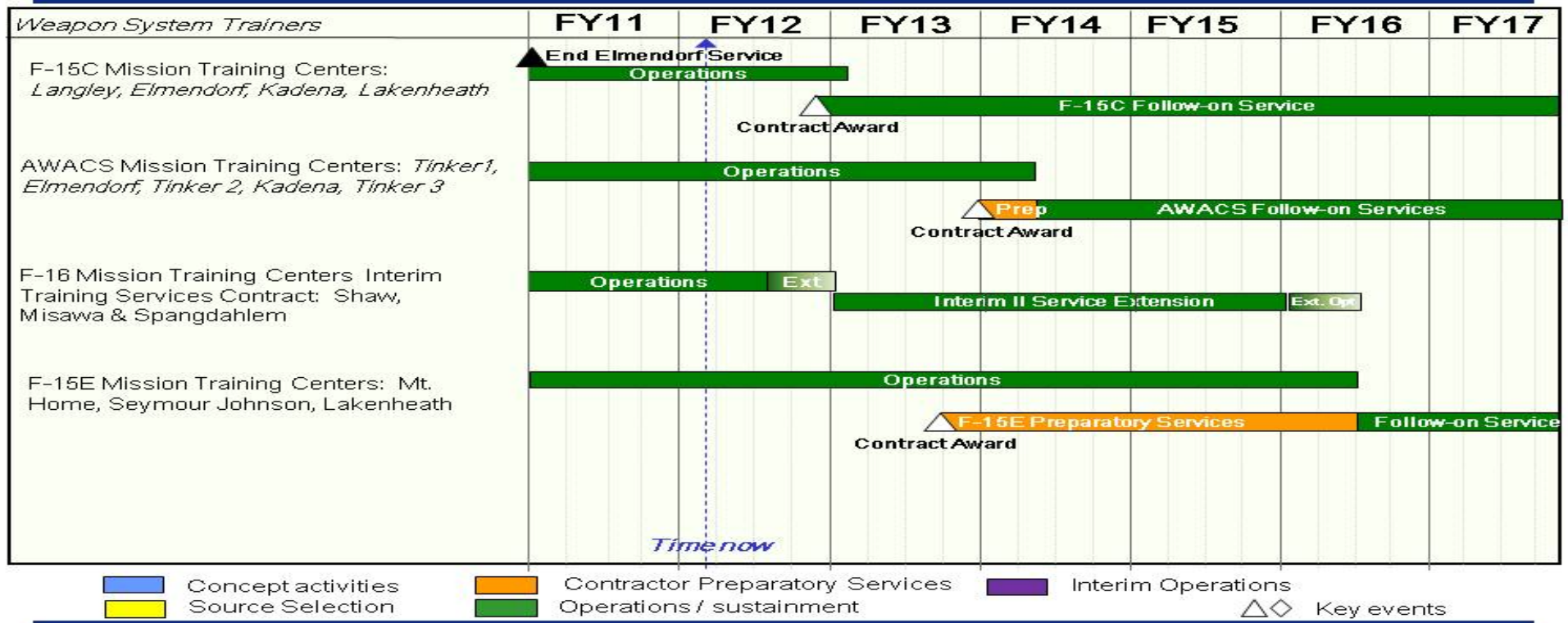
Integrity - Service - Excellence

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 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0207701F: Full Combat Mission Training	PROJECT 655012: Full Combat Mission Training



U.S. AIR FORCE

CAF DMO Schedule Training Service Contracts



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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0207701F: <i>Full Combat Mission Training</i>	PROJECT 655012: <i>Full Combat Mission Training</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
F-22 DMO Development Complete	4	2011	1	2014
F-22 Install: Tyndall	3	2011	3	2011
F-22 Install Elmendorf	2	2012	2	2012
F-22 Visual Upgrade complete	1	2013	1	2013
F-22 Install Hickam	4	2014	1	2015
B-1 Mod kits installed	2	2011	4	2011
B-2 Mod kits installed	1	2012	1	2012
B-2 Operations	4	2013	1	2017
F-15C MTC Recompete Contract Award (O&M)	3	2012	4	2012
B-52 Mod kits installed	1	2011	4	2013
F-15E MTC Recompete Contract Award (O&M)	3	2013	3	2013
AWACS MTC Recompete Contract Award (O&M)	4	2013	4	2013
Operations & Integration Recompete Contract Award (RDT&E &O&M)	4	2013	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0207701F: <i>Full Combat Mission Training</i>	PROJECT 655354: <i>F-16 Block 40/50 MTC</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
655354: <i>F-16 Block 40/50 MTC</i>	33.195	13.704	9.057	-	9.057	12.605	4.642	8.854	8.926	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

F-16 Block 40/50 Mission Training Center (MTC) supports the development, acquisition, fielding and sustainment of high fidelity, Distributed Mission Operations (DMO) capable flight simulators for F-16 Block 40 and 50 weapon systems. Each MTC includes multiple high fidelity Simulator Cockpits, Instructor Operator Stations, a Threat Server and Brief/Debrief and Mission Observation capability. Each is capable of linking to geographically distributed high-fidelity combat and combat support training devices including Command and Control (C2) and Intelligence, Surveillance, and Reconnaissance (ISR) systems. This capability allows the warfighters at home station to exercise and train at the operational and strategic levels of war as well as conduct networked unit-level training.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: F-16 MTC R&D</p> <p>Description: Research and development of DMO capable flight simulators to replace training capability which has been provided by training simulation service contracts. Research, development and testing of modifications to the F-16 MTC to maintain concurrency with F-16 aircraft</p> <p>FY 2011 Accomplishments: Continue F-16 MTC development, test and fielding</p> <p>FY 2012 Plans: Continue F-16 MTC development, test and fielding</p> <p>FY 2013 Base Plans: Continue F-16 MTC development, test and fielding</p> <p>FY 2013 OCO Plans: NA.</p>	32.695	13.463	8.930	-	8.930
<p>Title: Program Office Support</p> <p>Description: Program Office Support</p> <p>FY 2011 Accomplishments:</p>	0.500	0.241	0.127	-	0.127

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0207701F: <i>Full Combat Mission Training</i>	PROJECT 655354: <i>F-16 Block 40/50 MTC</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 Office Support					
<i>FY 2012 Plans:</i> Program Office Support					
<i>FY 2013 Base Plans:</i> Program Office Support.					
<i>FY 2013 OCO Plans:</i> NA.					
Accomplishments/Planned Programs Subtotals	33.195	13.704	9.057	-	9.057

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
• P-77: BA 5, Other Aircraft, Mod #8669 Full Combat Mission Training	0.432	1.098	1.566	0.000	1.566	1.566	1.818	1.921	1.953	Continuing	Continuing
• P-82: BA 6, Initial Spares/Repair Parts	5.220	3.238	1.400	0.000	1.400	0.271	0.252	0.209	0.213	Continuing	Continuing
• P-97: BA 7, Other Aircraft	53.655	23.255	9.522	0.000	9.522	0.000	0.027	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy
F-16 Block 40/50 MTCs are being developed and fielded under a competitively awarded Federal Acquisition Regulations (FAR) Part 15 Supply contract with RDT&E and APAF funds. The MTCs will be sustained by a Contract Logistic Support (CLS) using Operations and Maintenance funds.

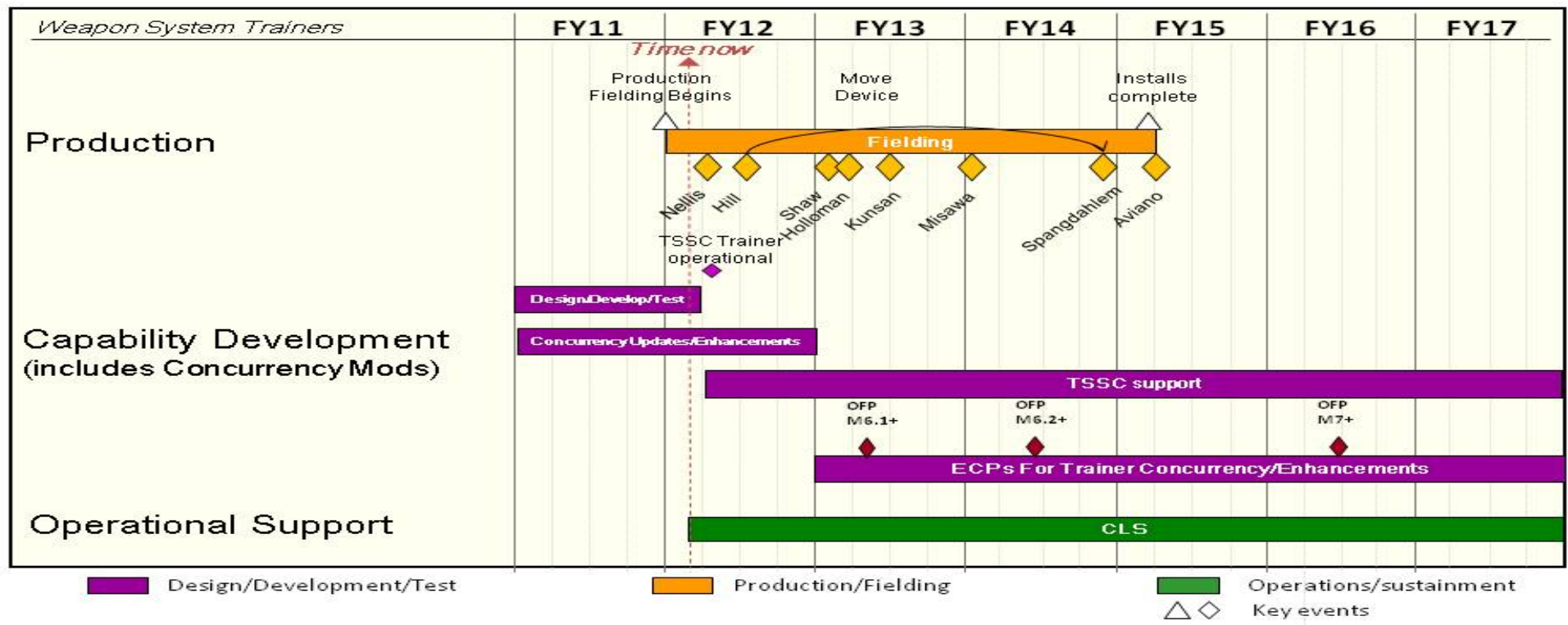
E. Performance Metrics
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

APPROPRIATION/BUDGET ACTIVITY
 3600: Research, Development, Test & Evaluation, Air Force
 BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE
 PE 0207701F: Full Combat Mission Training

PROJECT
 655354: F-16 Block 40/50 MTC

FCMT F-16 Block 40/50 MTC 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0207701F: <i>Full Combat Mission Training</i>	PROJECT 655354: <i>F-16 Block 40/50 MTC</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Design/Develop/Test F-16 MTC, including concurrency mods	1	2011	4	2017
MTC Nellis AFB NV Fielded	2	2012	2	2012
MTC Hill AFB UT Fielded	3	2012	3	2012
MTC Holloman AFB NM Fielded	1	2013	1	2013
MTC Shaw AFB SC Fielded	1	2013	1	2013
MTC Misawa AB JP Fielded	1	2014	1	2014
MTC Kunsan AB ROK Fielded	2	2013	3	2013
MTC Spangdahlem AB GE Fielded	4	2014	4	2014
MTC Aviano AB IT Fielded	2	2015	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0305230F: <i>ISR FOR IRREGULAR WARFARE</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	-	19.949	-	0.018	-	-	Continuing	Continuing
654673: <i>Distributed Mission Training (DMT)</i>	-	-	19.949	-	19.949	-	0.018	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2013, 654673, Distributed Mission Training includes new start efforts.

A. Mission Description and Budget Item Justification

The Air Force uses Aircrew Training Devices (ATD) to provide realistic, cost effective flight training to aircrews. Some of the training in the ATDs cannot be fully conducted in the aircraft because of safety, airspace, equipment, and security restrictions. The MC-12W Mission Training Center (MTC) Program will provide simulation for pilots and mission system operators.

The MC-12W MTC will consist of a cockpit simulator and an aircrew systems simulator, instructor/operator stations, and control equipment work stations. The MTC will be capable of integrating with the Air Force Distributed Mission Operations network that integrates the Air Force's vast array of weapon system simulators. Additionally, the MTC will be able to replicate theater-specific environments and combat situations, overcoming constraints that may limit combat preparation.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0305230F: <i>ISR FOR IRREGULAR WARFARE</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	-	-	19.949	-	19.949
Current President's Budget	-	-	19.949	-	19.949
Total Adjustments	-	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-	-	-

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Simulator Development	-	-	19.949
Description: Planned efforts include development and fielding of the MC-12 Mission Training Center			
FY 2013 Plans: Begin development and fielding of the MTC system to include software and hardware			
Accomplishments/Planned Programs Subtotals	-	-	19.949

D. Other Program Funding Summary (\$ in Millions)			FY 2013	FY 2013	FY 2013						Cost To			
<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>Complete</u>	<u>Total Cost</u>			
• APAF, PE 0305230F, ISR for Irreg...: <i>MC-12W Liberty Project Aircraft</i>	36.094	34.067	17.054	0.000	17.054	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing		
• OPAF, PE 0305230F, ISR for Irreg...: <i>Intelligence Comm Equipment</i>	5.074	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing		
• O&M, PE 0305230F, ISR for Ir...: <i>MC-12W Liberty Project Aircraft Operations</i>	453.811	597.603	119.605	0.000	119.605	32.603	29.914	29.907	29.997	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0305230F: <i>ISR FOR IRREGULAR WARFARE</i>
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E. Acquisition Strategy

The MC-12W Mission Training Center will be developed and maintained through the Simulator Systems Program Office. The procured supplies and services are supported across the full spectrum of system life-cycle management. Due to the rapidly changing threat environment encountered during our prolonged commitment to Overseas Contingency Operations, the acquisition program manager has the authority to redirect funding as necessary to meet current stated and emerging Combatant Commander requirements.

A portion of the MC-12W total aircraft inventory will transferred from the Active Duty force structure to the National Guard Bureau beginning in FY 2014. Final composition of the MC-12W transferred resources has not been determined, to include the MC-2W MTC.

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.

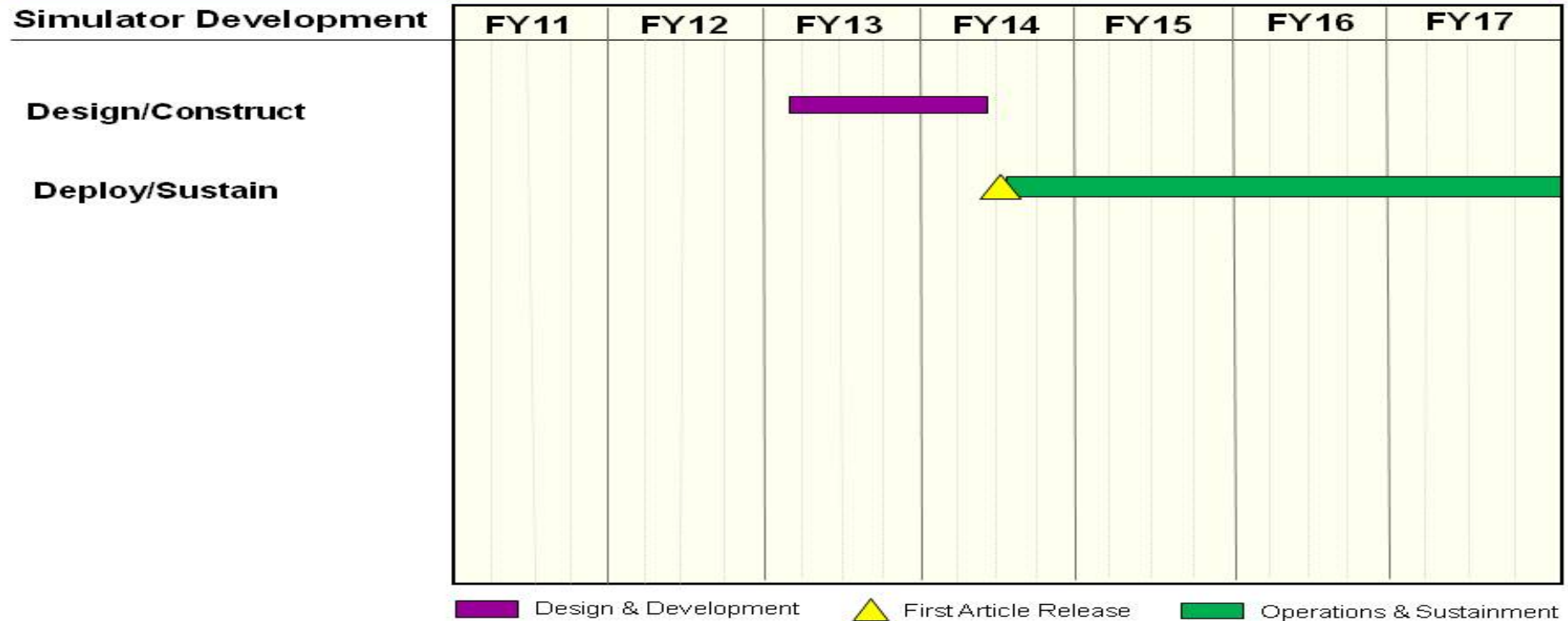
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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0305230F: <i>ISR FOR IRREGULAR WARFARE</i>	PROJECT 654673: <i>Distributed Mission Training (DMT)</i>



U.S. AIR FORCE

MC-12W Simulator Schedule



FY12 Staffer Brief

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0305230F: <i>ISR FOR IRREGULAR WARFARE</i>	PROJECT 654673: <i>Distributed Mission Training (DMT)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Design/Construct	1	2013	2	2014
Deploy/Sustain	3	2014	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401138F: <i>Joint Cargo Aircraft</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	17.849	27.089	-	-	-	-	-	-	-	Continuing	Continuing
655259: C-27J	17.849	27.089	-	-	-	-	-	-	-	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 C-27J is a medium-size airlift aircraft that provides flexible and responsive delivery of time sensitive and mission critical (TS/MC) equipment, supplies, and personnel to austere operating locations during contingency operations abroad, and in support of domestic homeland security and disaster response operations.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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	26.407	27.089	6.472	-	6.472
Current President's Budget	17.849	27.089	-	-	-
Total Adjustments	-8.558	-	-6.472	-	-6.472
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-7.750	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.673	-			
• Other Adjustments	-0.135	-	-6.472	-	-6.472

Change Summary Explanation

Funding in FY11 reflects the C-27J program-specific Congressional rescission contained in the FY12 Defense appropriation.

Funding in FY13 was deleted as a result of the Department's decision to terminate the C-27J program. Due to system requirements, subsequent budget exhibits contain information reflecting C-27J development activities in FY11 and FY12.

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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 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0401138F: <i>Joint Cargo Aircraft</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Title: Training System Development</p> <p>Description: Develop, test, and field first-article C-27J aircrew and maintenance training devices.</p> <p>FY 2011 Accomplishments: Initiate the development of C-27J aircrew and maintenance training devices, including virtual cockpit training devices (VCTs), a loadmaster crew resource management trainer (LMCRMT), and virtual aircraft maintenance training (VAMT) devices.</p> <p>FY 2012 Plans: Complete the development of, and validate/verify the performance of the VCT, LMCRMT, and VAMT devices.</p> <p>FY 2013 Plans: N/A</p>		12.249	20.323	-
<p>Title: Test & Evaluation</p> <p>Description: Conduct follow-on QT&E and OT&E of the C-27J weapon system.</p> <p>FY 2011 Accomplishments: Conduct QT&E of aircraft mission computer software changes. Conduct follow-on test and evaluation of C-27J deficiency corrections and other product improvements identified during initial QT&E and OT&E.</p> <p>FY 2012 Plans: Conduct follow-on test and evaluation of C-27J deficiency corrections and other product improvements identified during initial QT&E and OT&E.</p> <p>FY 2013 Plans: N/A</p>		1.640	0.467	-
<p>Title: Studies, Analysis, & Support</p> <p>Description: Conduct studies, analysis, and evaluation of C-27J deficiencies and emerging operational capability requirements. Maintain aircraft type and airworthiness certifications. Provide for program office support of RDT&E activities.</p> <p>FY 2011 Accomplishments: Develop and evaluate solutions for deficiencies identified during initial testing (e.g., pilot heads-up display, mission planning system interface, takeoff and landing data). Investigate and develop recommendations to correct deficiencies identified in operational use. Complete military type certification.</p> <p>FY 2012 Plans:</p>		3.960	6.299	-

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401138F: <i>Joint Cargo Aircraft</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Investigate and develop recommendations to correct weapon system deficiencies identified during initial testing and operational use. Investigate requirements and develop recommendations to address Federal Aviation Administration (FAA) mandated communication, navigation, identification and air traffic management requirements. Maintain aircraft airworthiness certifications. FY 2013 Plans: N/A			
Accomplishments/Planned Programs Subtotals	17.849	27.089	-

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

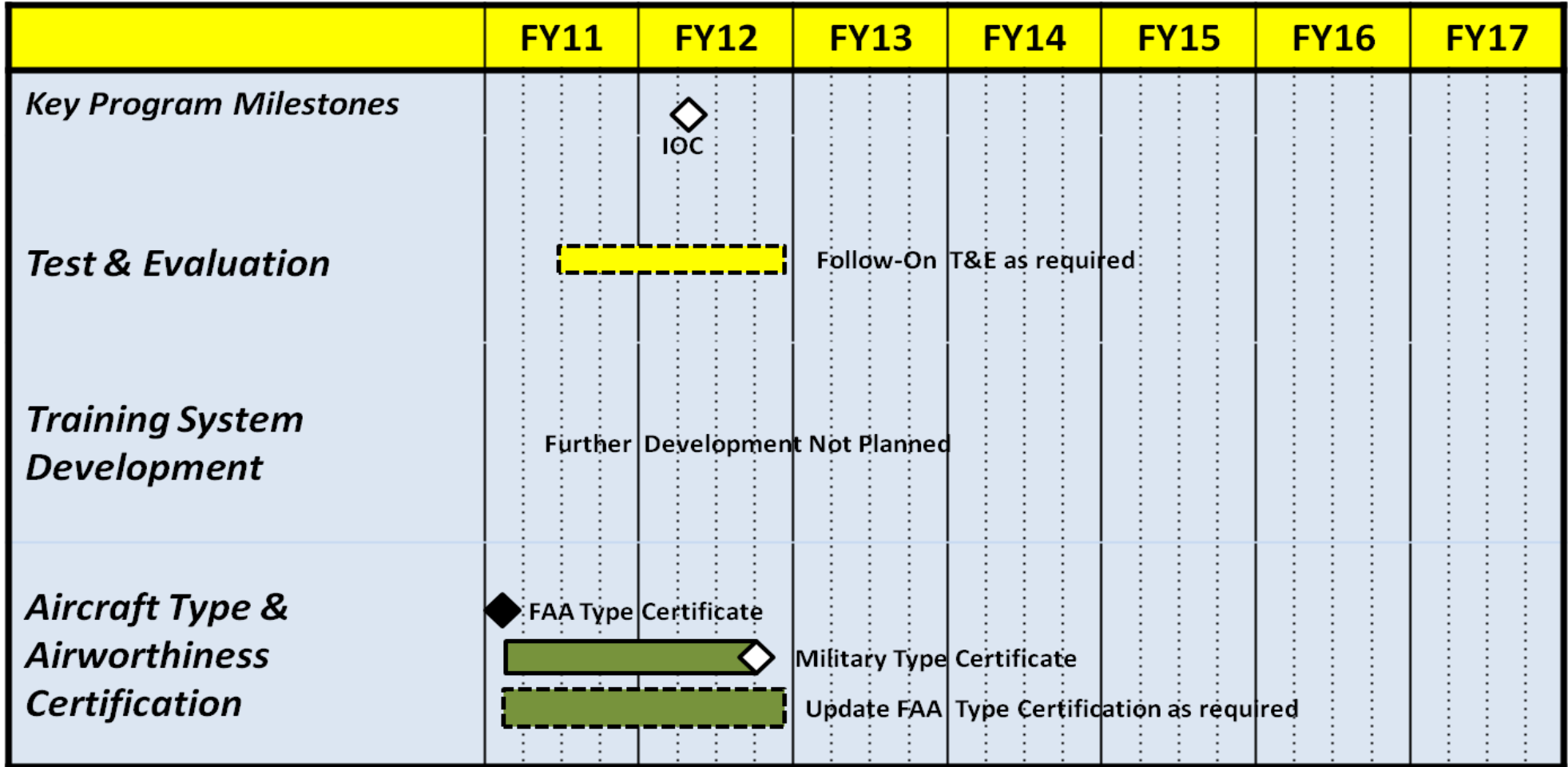
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0401138F, C-27J, APAF: C-27J	349.260	479.896	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	829.156

E. Acquisition Strategy
The Department does not intend to further develop these 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-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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401138F: <i>Joint Cargo Aircraft</i>	PROJECT 655259: <i>C-27J</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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401138F: <i>Joint Cargo Aircraft</i>	PROJECT 655259: <i>C-27J</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Initial Operational Capability (IOC)	2	2012	2	2012
Follow-on Test & Evaluation (T&E)	3	2011	4	2012
FAA Commercial Aircraft Type Certificate	1	2011	1	2011
Air Force Supplemental Military Type Certificate	1	2011	4	2012
Update FAA Type Certification as Required	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401318F: CV-22
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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	17.648	13.223	28.027	-	28.027	25.438	21.223	14.656	14.484	Continuing	Continuing
654103: CV-22	17.648	13.223	28.027	-	28.027	25.438	21.223	14.656	14.484	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 CV-22 is a Special Operations Forces (SOF) variant of the 1st generation V-22 tilt-rotor, multi-mission aircraft. CV-22 RDT&E provides development, integration, testing and enhancement of critical capability to insert, extract, and re-supply special operation forces into politically or militarily denied areas. The CV-22 Block 10 configuration added terrain following radar, additional fuel tanks, additional radios, flare/chaff dispensers, radio frequency/infrared and defensive countermeasures, weapons, situational awareness improvements, and Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM) to the V-22 Block B aircraft. Block 20 development includes, but is not limited to improved communications, situational awareness, software, and other requirements specified in the V-22 Block C/20 Capabilities Production Document. A future capabilities increment is anticipated following Block 20 to enhance self-deployment capabilities such as Distributed Ice Protection and Engine Time-On-Wing. CV-22 RDT&E also provides for a baseline CV-22 flight test aircraft for validation/verification of Block 20 and various software and reliability and maintainability mods through 2017. The V-22 Joint Program Office is developing improved operational safety, suitability, and effectiveness capabilities in block increments. Ongoing planning and associated activities will take place to prevent diminishing manufacturing resources and obsolescence issues, as required. USSOCOM and USAF jointly fund correction of deficiencies and Block 20 development. USSOCOM funds the development, integration and testing of SOF unique mission capability, while USAF funds interoperability, basic air vehicle enhancements, integration of Air Force and Navy maintenance and information systems used with the V-22, support for operational testing, and CV-22 implementation and testing of MV-22 Block B and Block C changes. USSOCOM and USAF jointly fund development projects to meet operational safety, suitability, and effectiveness mission needs. This includes designing, prototyping, integrating, testing and fielding proposed solutions to emerging warfighter issues.

This program is in Budget Activity 5, System Development and Demonstration (SDD), because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401318F: CV-22
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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	18.270	20.723	22.658	-	22.658
Current President's Budget	17.648	13.223	28.027	-	28.027
Total Adjustments	-0.622	-7.500	5.369	-	5.369
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-7.500			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.529	-			
• Other Adjustments	-0.093	-	5.369	-	5.369

Change Summary Explanation

FY11 funding was decreased \$0.093 million by Congressional General Reduction and is reflected in the Other Adjustment Row for FY11.

FY12 funding was decreased \$7.500 million by the Appropriations Conference Committee.

FY13 funding was increased \$5.369 million to fund development activities for Block 20 Long-Range Communications.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: CV-22 Block 20 RDT&E	17.648	13.223	23.027	-	23.027
Description: Develop, test, and evaluate additional capabilities for the CV-22 aircraft. The V-22 Joint Program Office is developing improved operational safety, suitability, and effectiveness.					
FY 2011 Accomplishments: RDT&E activities will continue on Block 20. Block 20 development includes, but is not limited to improved communications, software, and other requirements specified in the V-22 Block C/20 Capabilities Production Document. Complete Line-of-sight communications Critical Design Review (CDR). Continue Increment 1, 2 & 3 efforts.					
FY 2012 Plans: RDT&E activities will continue on Block 20. Block 20 development includes, but is not limited to improved communications, software, and other requirements specified in the V-22 Block C/20 Capabilities Production Document. Complete line-of-sight communications proof of concept testing. Complete long-range					

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401318F: CV-22
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
communications System Requirements Review (SRR) and System Functional Review (SFR). Continue Increment 1, 2 & 3 efforts. <i>FY 2013 Base Plans:</i> RDT&E activities will continue on Block 20. Block 20 development includes, but is not limited to improved communications, software, and other requirements specified in the V-22 Block C/20 Capabilities Production Document. Conduct PDR/CDR for improved Long Range Communications. Develop requirements for Mode 5 IFF alternatives. <i>FY 2013 OCO Plans:</i> N/A					
<i>Title:</i> Enhanced Self-deployment Capabilites <i>Description:</i> Future capabilities increment to enhance self-deployment capabilities such as Distributed Ice Protection and Engine Time-On-Wing. <i>FY 2011 Accomplishments:</i> N/A <i>FY 2012 Plans:</i> N/A <i>FY 2013 Base Plans:</i> Future capabilities increment to enhance self-deployment capabilities such as Distributed Ice Protection and Engine Time-On-Wing. <i>FY 2013 OCO Plans:</i> N/A	-	-	5.000	-	5.000
Accomplishments/Planned Programs Subtotals	17.648	13.223	28.027	-	28.027

D. Other Program Funding Summary (\$ in Millions)			FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• PE1160421BB, Defense-wide, RDT&a...: <i>Special Operations, CV-22 Development</i>	FY 2011	FY 2012	1.800	0.000	1.800	0.900	0.180	0.000	0.000	0.000	518.719

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401318F: CV-22
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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>
• PE1160421BB, Defense-wide, Procurement: <i>Special Operations, CV-22 Modifications</i>	138.350	118.002	137.391	0.000	137.391	97.675	19.579	6.402	6.517	0.000	1,678.412
• PE 040318F, APAF, Procurement: <i>CV-22 Osprey, Procurement</i>	474.473	359.865	309.220	0.000	309.220	230.798	0.000	0.000	0.000	0.000	4,208.043
• PE 040318F, APAF, Modifications: <i>CV-22 Osprey, Modifications</i>	15.497	14.715	23.881	0.000	23.881	41.707	103.070	71.958	72.007	320.984	729.883
• PE 0604262N, USN, RDT&E: <i>V-22A, Development</i>	42.686	84.477	54.436	0.000	54.436	40.316	54.929	51.217	52.292	111.055	9,384.588

E. Acquisition Strategy

The V-22 Joint Program Office (NAVAIRSYSCOM PMA-275) ensures that CV-22 changes are incorporated into the ongoing V-22 production line with minimal impact. The JPO is developing new capabilities for the V-22 in blocks. Block 0 and Block 10 have completed development, and Block 20 is currently underway. NAVAIRSYSCOM awarded a cost plus fixed fee contract with the prime contractor in Dec 2007 for Block 20 development and test. Development activities for the V-22 program are performed by the prime contractor selected on a sole-source basis. Bell-Boeing is a strategic partnership between Bell Helicopter and Boeing Integrated Defense Systems.

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401318F: CV-22	PROJECT 654103: CV-22
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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
Development of 2 Production Representative Test Vehicles	SS/CPAF	Bell Boeing:Amarillo, TX	161.859	-		-		-		-	0.000	161.859	0.000
Block 10 Development	SS/CPAF	Bell Boeing:Amarillo, TX	44.025	-		-		-		-	0.000	44.025	0.000
Block 10 Development Technical Support	Various	Various:Various	11.886	-		-		-		-	0.000	11.886	0.000
Block 20 Development	SS/CPFF	Bell Boeing:Amarillo, TX	49.137	7.763	Mar 2012	14.132	Dec 2012	-		14.132	60.300	131.332	166.918
Enhanced Self-deployment Capability	Various	Various:Various,	-	-		5.000	Mar 2013	-		5.000	0.000	5.000	0.000
Situational Awareness Hazard Avoidance Federated Terminal (SHAFT) Contractual Engineering Task (CET)	C/CPAF	Manufacturing Technology Inc:Fort Walton Beach, FL	5.000	-		-		-		-	0.000	5.000	0.000
Subtotal			271.907	7.763		19.132		-		19.132	60.300	359.102	166.918

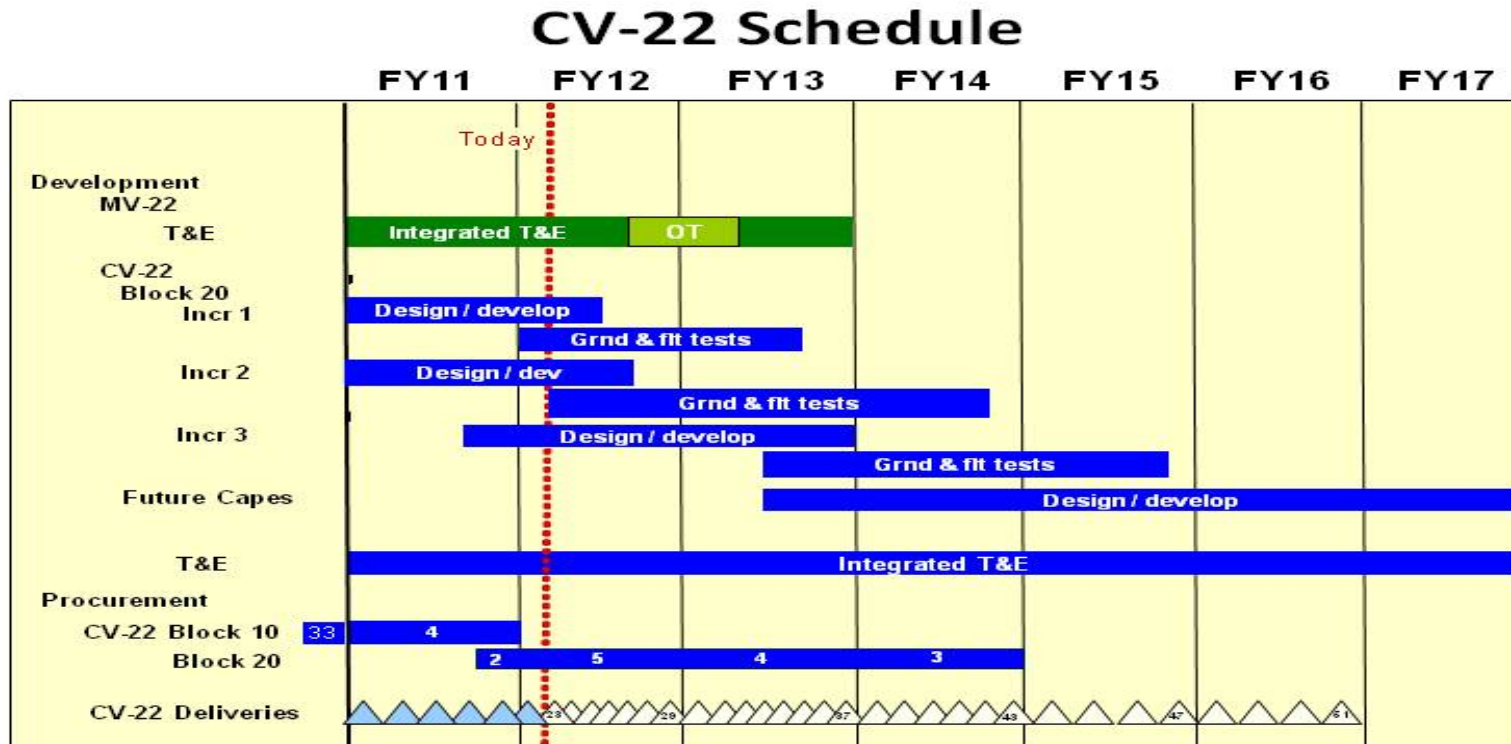
Remarks

The Block 20 Development effort target value of contract differs from the total cost because the target contract value includes some test related funding and USSOCOM MFP-11 funding for Special Operations Forces (SOF) peculiar development efforts.

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
Interim Contractor Support	SS/CPAF	Bell Boeing:Amarillo, TX	26.889	-		-		-		-	0.000	26.889	0.000
Contractor Logistics Support for Test Aircraft	Various	Various:Various,	9.795	1.860	Mar 2012	3.345	Dec 2012	-		3.345	10.700	25.700	0.000
Subtotal			36.684	1.860		3.345		-		3.345	10.700	52.589	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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401318F: CV-22	PROJECT 654103: CV-22



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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401318F: CV-22	PROJECT 654103: CV-22

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Block 20 Increment 1 Development, Testing and Evaluation	1	2011	3	2013
-- Line-of-site Comm development and design reviews	1	2011	2	2012
-- Line-of-site Comm ground and flight tests	1	2012	3	2013
Block 20 Increment 2 Development, Testing and Evaluation	1	2011	3	2014
-- Situational awareness and avionics upgrades design reviews	1	2011	1	2012
-- Situational awareness/avionics upgrades ground & flight tests	1	2012	3	2014
Block 20 Increment 3 Development, Testing and Evaluation	1	2011	3	2015
-- Long range comm upgrades development and design reviews	3	2011	4	2013
-- Long range comm upgrades ground and flight tests	2	2013	3	2015
Future Capabilities 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401845F: <i>SLC3S-A (Senior Leader C3S)</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	7.786	-	1.960	-	1.960	-	-	-	-	Continuing	Continuing
655273: <i>SLC3S-A Communications Program</i>	7.786	-	1.960	-	1.960	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2012, the SLC3S-A Communications Program was terminated.

A. Mission Description and Budget Item Justification

The Air Force Senior Leader Command, Control, and Communications System - Airborne (SLC3S-A) provides executive airborne communications supporting world-wide command and control capabilities to US government Senior Leaders (i.e., the President of the United States (POTUS); Vice President of the United States (VPOTUS); Secretary of Defense (SECDEF); Secretary of State (SECSTATE); Chairman, Joint Chiefs of Staff (CJCS); Unified Combatant Commanders (COCOMs); and their staffs as well as other government senior leaders). The SLC3S-A capabilities include secure and non-secure voice, data, and video connectivity into Defense Information System Network/Global Information Grid, Defense Switched Network, Defense Red Switch Network, Voice Over Secure Internet Protocol Networks, National Security Council's Crisis Management System, and commercial networks up to the Top Secret/Sensitive Compartmented Information security classification level. These capabilities are used daily by the Senior Leaders to carry out their duties and responsibilities. Currently, each Air Force Operational Support Aircraft and Very Important Person Special Airlift Mission (OSA/VIPSAM) aircraft is configured with its own unique communications suite. National Senior Leaders require 100% secure voice, data, and video capability for all activities from general planning and strategy discussions to directing command decisions. The security, reliability, and availability of the AF SLC3S-A services determine America's victories or setbacks on the battlefield. The SLC3S-A Program will standardize the back-end communications architecture, off-board transmission systems, ground support networks, and Roll-on/Roll-off assets. The C-37 Communications Package (CCP) will standardize the airborne local area network, add additional commercial SATCOM capability and increase the Mean Zero Fuel Weight (MZFW) across the fleet of C-37s. CCP activities also include studies and analysis to support execution of these modifications. The CCP program is pre-MDD. The SLC3S-A Transmission System (STS) Program will address the connectivity infrastructure between AF SLC3S-A aircraft internal communications/information system (e.g., C-37 Communications Package) and Executive Airlift Communications Network (EACN) Air-to-Ground Gateway (A2G2). This effort will provide highly reliable, redundant, wideband communications paths off OSA/VIPSAM aircraft and may include an implementation of wideband MILSATCOM and commercial SATCOM capabilities, modification of the ground infrastructure and development of a Black-side Network Operations Center. Activities also include studies and analysis to support both current program planning and execution and future program planning. The STS program is pre-MDD. The CCP program is in budget activity 5, System Development and Demonstration (SDD) with a planned entry at Milestone B.

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401845F: <i>SLC3S-A (Senior Leader C3S)</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	15.826	12.535	1.991	-	1.991
Current President's Budget	7.786	-	1.960	-	1.960
Total Adjustments	-8.040	-12.535	-0.031	-	-0.031
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-12.535			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-8.040	-	-0.031	-	-0.031

Change Summary Explanation

FY11 Congressional General Reduction of 8.040M in Other Adjustment row.

FY12 Congressional Directed Reduction of 12.535M from FY12 Defense Appropriation Act. Reason: RDT&E funding decreased to meet congressional action to terminate SLC3S Communications Program (SCP).

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

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: SLC3S-A Communications Program (SCP)	7.786	-	1.960
Description: Develop and standardize command, control and communications (C3) systems for senior leader aircraft.			
FY 2011 Accomplishments: Continue the development, testing, certification data item development and training of the SCP for Aircraft Variant 1 (C-37) and Aircraft Variant 2 (C-20, C-32, and C-40). Residual funding will be used to cover program office actions necessary to cover government responsibilities for contract closure with the primary developer during program termination.			
FY 2013 Plans: Funds will be utilized to cover program office actions necessary to cover government responsibilities for contract closure with the primary developer during program termination.			
Accomplishments/Planned Programs Subtotals	7.786	-	1.960

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401845F: <i>SLC3S-A (Senior Leader C3S)</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 Mods, PE 0401845F, SLC3S-A ...: <i>SLC3S-A Aircraft</i> <i>Procurement</i>	0.194	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.194
• APAF Spares, PE 0401845F, SLC3S-....: <i>SLC3S-A Aircraft</i> <i>Procurement Initial Spares &</i> <i>Repairs</i>	0.000	1.597	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.597

E. Acquisition Strategy

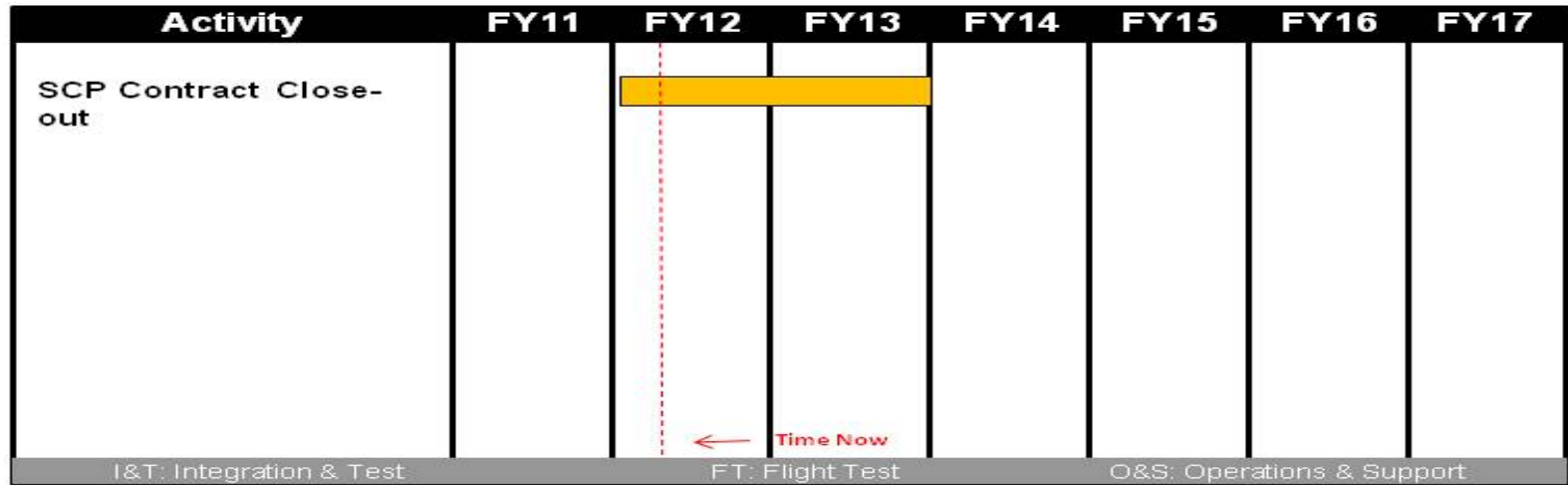
Competitive award of an Indefinite Delivery/Indefinite Quantity (ID/IQ) contract vehicle to a single source. Emphasize off-the-shelf technology and maximize use of non-developmental items (NDIs).

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401845F: <i>SLC3S-A (Senior Leader C3S)</i>	PROJECT 655273: <i>SLC3S-A Communications Program</i>



- Pre-Production
- Design/Development
- Integration/Test
- Production
- 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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0401845F: <i>SLC3S-A (Senior Leader C3S)</i>	PROJECT 655273: <i>SLC3S-A Communications Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Contract close-out	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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0604256F: <i>Threat Simulator 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
Total Program Element	24.805	22.420	22.812	-	22.812	20.081	19.076	20.450	20.523	Continuing	Continuing
662907: <i>Electronic Combat Intel Support</i>	2.204	2.243	2.278	-	2.278	2.309	2.664	3.256	3.102	Continuing	Continuing
663321: <i>Electronic Warfare Ground Test Resources</i>	11.051	12.502	13.260	-	13.260	10.893	10.016	10.618	10.758	Continuing	Continuing
667500: <i>Foreign Materiel Acquisition/Analysis</i>	11.550	7.675	7.274	-	7.274	6.879	6.396	6.576	6.663	Continuing	Continuing

A. Mission Description and Budget Item Justification

This PE provides funding for the elements necessary to support the Air Force Electronic Warfare (EW) Test Process, including Directed Energy (DE). This test process provides a scientific methodology to ensure the effective disciplined and efficient testing of EW and avionics systems. Each capability or facility improvement is pursued in concert with the others to avoid duplicate capabilities while at the same time producing the proper mix of test resources needed to support the AF EW Test Process and testing of EW systems which can be used in any action involving the use of electromagnetic and DE to control the electromagnetic spectrum or to attack the enemy. This PE provides funding for the management and technical oversight of implementation activities, development and improvement of digital EW models, measurement facilities improvements, hardware-in-the-loop test facilities improvements, and installed system test facility improvements. Support includes requirements definition and analysis, project planning, programming and budgeting, technical oversight, and application of T&E facility I&M. Products include studies, analyses, improved M&S of threat sources, improved or new T&E capabilities to support EW testing and related documentation. Additionally, this PE provides funding to support the acquisition and analysis efforts of the Foreign Materiel Program and EW intelligence efforts.

This PE is in Budget Activity 6, Management Support, because it is a Research and Development (R&D) effort for I&M of T&E capabilities at AF Test Centers.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0604256F: <i>Threat Simulator Development</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	21.245	22.420	23.234	-	23.234
Current President's Budget	24.805	22.420	22.812	-	22.812
Total Adjustments	3.560	-	-0.422	-	-0.422
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	4.000	-			
• SBIR/STTR Transfer	-0.332	-			
• Other Adjustments	-0.108	-	-0.422	-	-0.422

Change Summary Explanation

FY11: Reprogramming for 4.000 for Foreign Material Acquisition; -0.108 reduction for Congressional General Reductions in Other Adjustment Row

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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 6: <i>RDT&E Management Support</i>				R-1 ITEM NOMENCLATURE PE 0604256F: <i>Threat Simulator Development</i>				PROJECT 662907: <i>Electronic Combat Intel Support</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
662907: <i>Electronic Combat Intel Support</i>	2.204	2.243	2.278	-	2.278	2.309	2.664	3.256	3.102	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project provides funding to support Foreign Materiel Operational Test and Evaluation (FMOT&E), which ensures the ability of operational commands to test and develop effective Electronic Attack/Electronic Protection (EA/EP) techniques and tactics. Funds are required for: deployment of systems to test facilities; travel of personnel to the test sites to evaluate and validate test results; range and laboratory costs; test consumables; costs for instrumentation of systems; and contracted engineering support for the conduct of tests and subsequent reporting. Funding for this program is required to prevent future aircraft losses due to improper and inaccurate aircrew tactics (e.g., lack of evasive action or proper tactics training to avoid missile attack).

Budget Activity Justification: This program is in Budget Activity 6, RDT&E Management Support, because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

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

	FY 2011	FY 2012	FY 2013
Title: FMOT&E	2.204	2.243	2.278
Description: Supports Foreign Materiel Operational Test and Evaluation (FMOT&E)			
FY 2011 Accomplishments: Continue to conduct foreign materiel operational analysis (FMOA) for fighter and bomber testing; mobility/special operations transport/helicopter testing; classified operational assessments; and extensive evaluations and reporting of system effectiveness.			
FY 2012 Plans: Continue to conduct foreign materiel operational analysis (FMOA) for fighter and bomber testing; mobility/special operations transport/helicopter testing; classified operational assessments; and extensive evaluations and reporting of system effectiveness.			
FY 2013 Plans: Continue to conduct foreign materiel operational analysis (FMOA) for fighter and bomber testing; mobility/special operations transport/helicopter testing; classified operational assessments; and extensive evaluations and reporting of system effectiveness.			
Accomplishments/Planned Programs Subtotals	2.204	2.243	2.278

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0604256F: <i>Threat Simulator Development</i>	PROJECT 662907: <i>Electronic Combat Intel Support</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>
• 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

D. Acquisition Strategy

Not applicable.

E. Performance Metrics

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

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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 6: <i>RDT&E Management Support</i>				R-1 ITEM NOMENCLATURE PE 0604256F: <i>Threat Simulator Development</i>				PROJECT 663321: <i>Electronic Warfare Ground Test Resources</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
663321: <i>Electronic Warfare Ground Test Resources</i>	11.051	12.502	13.260	-	13.260	10.893	10.016	10.618	10.758	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The AF requires a comprehensive set of test facilities to implement the Air Force Electronic Warfare (EW) Test Process in order to test EW systems, including Directed Energy (DE). To manage program risk effectively throughout the weapons system acquisition process, and conduct T&E effectively and efficiently, a broad multi-spectrum, integrated set of T&E capabilities for modeling and simulation through open-air ranges (OAR) are required. The EW Test Process Support task provides for investment management, coordinated technical oversight, and application of EW T&E facilities, including studies, analyses, and related documentation. The National Radar Cross Section (RCS) Test Facility (NRTF) at Holloman AFB, NM, provides timely, accurate, and secure RCS and antenna measurements for tri-service and joint program offices, DoD laboratories, Defense Advanced Research Projects Agency (DARPA) and industry. The NRTF tests fielded and developmental systems and technology to meet Low Observable (a.k.a. stealth) and EW customer requirements. The Guided Weapons Evaluation Facility (GWEF), 412 EWG/OL-HN and the Digital Integrated Air Defense System (DIADS) provide the ability to realistically evaluate hardware components and simulated weapon systems against manned hardware threat representations throughout the acquisition process. GWEF provides simulations of advanced Infrared (IR) & Radio Frequency (RF) semi-active Surface-to-Air Missiles (SAMs), Air-to-Air Missiles (AAMs), RF missile warning, IR and Laser countermeasure functions; integration of actual threat hardware and ground clutter into advanced threat RF and IR missile simulations. DIADS provides algorithm based enemy command and control (C2) capabilities plus early warning radar detection, limited ground control intercept features and also allows man-in-the-loop interaction for the enemy C2 positions. The Advanced Warfare Test and Evaluation Capability (AWTEC) will replace 90's technology with state-of-the-art stimulators to upgrade the Benefield Anechoic Facility (BAF) at Edwards AFB, CA and provides EMI/EMC capabilities at the BAF. Improvement and modernization efforts within this PE are identified for the EW mission area. EW provides planning, improvements, and modernization needed for test capabilities to conduct and support the AF EW test process, including DE. This test process provides a scientific methodology to ensure the effective disciplined and efficient testing of EW and avionics systems.

Budget Activity Justification: This program is in Budget Activity 6, RDT&E Management Support, because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

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

	FY 2011	FY 2012	FY 2013
Title: I&M	9.917	11.298	11.958
Description: Provides for planning and improvement & modernization (I&M) of test capabilities to conduct and support the AF EW test process, including DE.			
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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0604256F: <i>Threat Simulator Development</i>	PROJECT 663321: <i>Electronic Warfare Ground Test Resources</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>AFEWES test capability I&M will continue to advance high-fidelity RF and IR threat simulators to evaluate effectiveness of DoD and Allied EW systems; DIADS architecture upgrades will continue to advance new capabilities to simulate evolving threats; AWTEC will continue to provide state-of-the-art stimulators to replace 90's technology and provides EMI/EMC test capabilities; and the NRTF will continue to enhance efficiency of operations and accuracy for measuring RCS of Low Observable platforms and antennas.</p> <p>FY 2012 Plans: Transition of IR threat simulators to the GWEF to evaluate effectiveness of DoD IR EW systems will proceed per transition plan. Transition of RF threat simulators to the 412 EWG/OL-HN to evaluate effectiveness of DoD EW systems will continue as planned. DIADS architecture upgrades will continue to advance new capabilities to simulate evolving threats; AWTEC will continue to provide state-of-the-art stimulators to replace 90's technology and provides EMI/EMC test capabilities; and the NRTF will continue to enhance efficiency of operations and accuracy for measuring RCS of Low Observable platforms and antennas.</p> <p>FY 2013 Plans: GWEF test capability I&M will continue to advance high-fidelity IR threat simulators to evaluate effectiveness of DoD IR EW systems. Transition of RF threat simulators to the 412 EWG/OL-HN to evaluate effectiveness of DoD RF EW systems will be completed. DIADS architecture upgrades will continue to advance new capabilities to simulate evolving threats; AWTEC will continue to provide state-of-the-art stimulators to replace 90's technology and provides EMI/EMC test capabilities; and the NRTF will continue to enhance efficiency of operations and accuracy for measuring RCS of Low Observable platforms and antennas.</p>				
<p>Title: EC Test Process Support</p> <p>Description: Electronic Combat (EC) Test Process Support. Conduct requirements analyses and other studies in support of Air Force investments in EW test infrastructure.</p> <p>FY 2011 Accomplishments: Continue to provide Systems Engineering / Technical Assistance (SETA) support for Air Force implementation of the EW Test Process, including I&M of the EW test infrastructure.</p> <p>FY 2012 Plans: Continue to provide Systems Engineering / Technical Assistance (SETA) support for Air Force implementation of the EW Test Process, including I&M of the EW test infrastructure.</p> <p>FY 2013 Plans: Continue to provide Systems Engineering / Technical Assistance (SETA) support for Air Force implementation of the EW Test Process, including I&M of the EW test infrastructure.</p>		1.134	1.204	1.302
Accomplishments/Planned Programs Subtotals		11.051	12.502	13.260

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0604256F: <i>Threat Simulator Development</i>	PROJECT 663321: <i>Electronic Warfare Ground Test Resources</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 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>
• RDT&E AF, PE 0604759F, Major...: <i>Test and Evaluation Support</i>	59.469	62.206	42.236	0.000	42.236	43.044	42.899	46.198	47.688	Continuing	Continuing
• RDT&E AF, PE 0605807F, T&...: <i>Test and Evaluation Support</i>	752.328	704.475	722.071	0.000	722.071	701.000	702.979	716.873	725.979	Continuing	Continuing
• RDT&E AF, PE 0605976F, Facil...: <i>Test and Evaluation Support</i>	46.091	44.547	42.597	0.000	42.597	35.046	43.815	26.899	29.067	Continuing	Continuing
• RDT&E AF, PE 0605978F, Facil...: <i>Test and Evaluation Support</i>	27.438	27.953	27.301	0.000	27.301	23.849	28.871	24.282	24.599	Continuing	Continuing

D. Acquisition Strategy

NA

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 6: <i>RDT&E Management Support</i>				R-1 ITEM NOMENCLATURE PE 0604256F: <i>Threat Simulator Development</i>				PROJECT 667500: <i>Foreign Materiel Acquisition/Analysis</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
667500: <i>Foreign Materiel Acquisition/Analysis</i>	11.550	7.675	7.274	-	7.274	6.879	6.396	6.576	6.663	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project's specific purpose is to support USAF Foreign Materiel Program requirements through the acquisition and analysis of foreign materiel. Items considered for these Foreign Materiel Acquisition (FMA) funds are included in the prioritized Air Force FMA Top 20 list established each year. Each Major Command (MAJCOM) prepares and approves a Foreign Materiel - Mission Requirements Statement for each requirement. Annually, the MAJCOM commanders establish a list of their top 20 requirements. The MAJCOMS' requirements lists are integrated and prioritized into a classified Air Force requirement list. Each MAJCOM then approves the FMA Top 20 List and final validation comes from the Air Force Vice Chief of Staff. System analyses are based on and driven by acquisitions. The USAF provides assessments and data for threat systems to all DoD components.

This PE is in Budget Activity 6, Management Support, because it is a Research and Development (R&D) effort for I&M of T&E capabilities at AF Test Centers.

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

	FY 2011	FY 2012	FY 2013
Title: FMP	11.550	7.675	7.274
Description: Supports USAF Foreign Materiel Program (FMP) Requirements through the acquisition and analysis of foreign materiel.			
FY 2011 Accomplishments: Continue to fund acquisition of available Foreign Materiel IAW the prioritized Air Force Foreign Materiel List; analysis of acquired Foreign Materiel; and operations and maintenance of the specialized Foreign Materiel assets.			
FY 2012 Plans: Continue to fund acquisition of available Foreign Materiel IAW the prioritized Air Force Foreign Materiel List; analysis of acquired Foreign Materiel; and operations and maintenance of the specialized Foreign Materiel assets.			
Not applicable.			
FY 2013 Plans: Continue to fund acquisition of available Foreign Materiel IAW the prioritized Air Force Foreign Materiel List; analysis of acquired Foreign Materiel; and operations and maintenance of the specialized Foreign Materiel assets.			

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0604256F: <i>Threat Simulator Development</i>	PROJECT 667500: <i>Foreign Materiel Acquisition/Analysis</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Not applicable.			
Accomplishments/Planned Programs Subtotals	11.550	7.675	7.274

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

D. Acquisition Strategy
Not applicable.

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

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0604759F: <i>Major T&E Investment</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	59.469	62.206	42.236	-	42.236	43.044	42.899	46.198	47.688	Continuing	Continuing
664597: <i>Air Force Test Investments</i>	59.469	62.206	42.236	-	42.236	43.044	42.899	46.198	47.688	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This PE provides planning, improvements, and modernization for test capabilities at three Air Force test organizations: 46 Test Wing (to include 46 Test Group at Holloman AFB NM, and operating locations at Wright-Patterson AFB OH), Arnold Engineering Development Center (AEDC), and Air Force Flight Test Center (AFFTC). The purpose is to help test organizations improve and develop their test infrastructure and capabilities to keep pace with improvements in weapon system technologies.

The improvement and modernization (I&M) requirements are defined through the AF Test Investment Planning & Programming (TIPP) Process. Also, all projects have been reviewed through the Tri-Service Reliance process (to communicate AF efforts to the other Services and avoid unwarranted duplication of effort) and are documented in Reliance Area Capability Summaries (RACS). Further, each project has its own planning, development, equipment acquisition, equipment installation, and checkout phases which often require significant differences in funding from one year to the next. As such, the changes in category funding from year to year do not necessarily indicate program growth, but rather a planned phasing of improvement and modernization efforts. The test capabilities at these locations enable testing through all phases of weapon system acquisition, from system concept exploration through component and full scale integrated weapon system testing to operational testing. These test organizations are a part of the Major Range and Test Facility Base (MRTFB), operated and maintained by the Air Force for DoD test and evaluation. These national test assets are available to others requiring their unique capabilities.

The 46TW, at Eglin AFB, FL, conducts and supports developmental test and evaluation (DT&E) of non-nuclear air armaments; Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance (C4ISR) systems; target acquisition and weapon delivery systems; navigation systems; provides a climatic simulation capability; and determines target/test item spectral signatures. The 46TG at Holloman AFB, NM provides independent test and evaluation of inertial, Global Positioning System and integrated systems used for aircraft navigation and missile guidance systems including vulnerability to electronic interference; provides the liaison function for coordinating and scheduling all US Air Force test operations at White Sands Missile Range; provides subsonic through hypersonic ground testing of aircraft and missiles in a flight-representative environment under highly instrumented conditions; and executes flight test and test support for advanced avionics and weapons development of joint, international and commercial test programs.

AEDC, at Arnold AFB, TN, provides pre-flight and reliability ground environmental test support for DoD aeropropulsion, flight systems, and space and missile programs. The center has 53 test facilities providing: aerodynamic testing of scale model aircraft, missiles, and space systems; testing of large and full-scale satellites, sensors, and space vehicles in a simulated space environment; altitude environmental testing for aircraft, missile, and spacecraft propulsion systems; and testing of large-scale models such as space boosters together with their propulsion systems.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0604759F: <i>Major T&E Investment</i>
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AFFTC, at Edwards AFB, CA, conducts and supports DT&E and Operational Test and Evaluation (OT&E) of aircraft and aircraft systems, aerospace research vehicles, unmanned aerial vehicles, cruise missiles, parachute delivery/recovery/systems, and cargo handling systems.

I&M efforts within this PE are identified in four mission area categories: Airframe/Propulsion/Avionics (APA); Armament/Munitions (A/M); Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance (C4ISR); and Space. These categories describe general types of effort that will be conducted in this PE. APA provides planning, improvements, and modernization needed for test capabilities to conduct and support DT&E and OT&E of aircraft and aircraft systems, aerospace research vehicles, unmanned aerial vehicles, cruise missiles, parachute delivery/recovery systems, cargo handling systems, and turbine engines. APA focuses on evaluation of the vehicle airframe, propulsion system, and avionics systems, as well as overall systems integration testing. It encompasses both ground test facilities and open-air range infrastructure, including instrumentation and data processing. A/M provides planning, improvements and modernization to conduct DT&E of air-to-ground and air-to-air armaments and munitions, which include gun, chaff and flare systems as well as aerial decoy and target systems. The A/M category encompasses the full range of DT&E from digital modeling and simulation, to precision measurement testing, to hardware-in-the-loop and installed systems testing, to open-air range testing. Elements of A/M DT&E include environmental, warhead effectiveness, arena blast/fragmentation, guidance navigation and control, aerodynamics, propulsion, electromagnetic interference and compatibility, mass properties, seeker and signature measurement, survivability, lethality, integration, reliability, net-centric and terminal effects testing. A/M also involves the design and development of systems needed to support A/M DT&E including the design and development sleds, targets, range support systems and various instrumentation and measurement systems. C4ISR provides planning, improvements and modernization to conduct DT&E of systems that support C2 functions which range from air campaign planning at the theater level to wing level C2 operations, to planning individual missions, to putting weapons on target using concepts such as machine to machine targeting. C4ISR includes ground and flight performance testing of airborne C2 networks and tactical data links, air operation centers, mission planning systems, multi-level security systems, radio and communication systems, ISR systems, information assurance systems, and radar systems such as those used by JSTARS and air traffic control systems. C4ISR conducts DT&E on a full range of systems covering the sensor (detection) to the shooter (weapon), including functional and environmental testing of these systems. Space provides planning, improvements, and modernization needed for Space test capabilities to perform developmental and operational testing for space and launch acquisition and sustainment programs. Test capabilities include launch vehicle, satellite, missile, sensor, thermal protection system, signature, hardness, and interface testing. The capabilities are resident at Vandenberg, Kirtland, Arnold, Patrick, Schriever, Peterson, Holloman Air Force Bases and others. Infrastructure includes launch sites, mobile control units, thermal vacuum chambers, sled track, arc heated wind tunnels, ballistic test ranges, signature collection, and the requisite personnel.

Budget Activity Justification: This program is in Budget Activity 6, RDT&E Management Support, because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0604759F: <i>Major T&E Investment</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	61.587	62.206	60.038	-	60.038
Current President's Budget	59.469	62.206	42.236	-	42.236
Total Adjustments	-2.118	-	-17.802	-	-17.802
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.782	-			
• Other Adjustments	-0.336	-	-17.802	-	-17.802
 Change Summary Explanation					
FY11: Cong General Reductions -\$0.336 are reflected in Other Adjustment Row.					
FY13: \$17.8M reduction to fund higher DoD priorities within the T&E portfolio.					

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: I&M	40.107	39.588	26.226
Description: Improvement and modernization of the AF capability to test and evaluate Airframe/Propulsion/Avionics (APA)			
FY 2011 Accomplishments: Continue to support - ARSU upgrades critical AFFTC range infrastructure, including range tracking, communications and control systems, to overcome near-term obsolescence; ATSU provides upgrades to AFFTC TSPI systems; ARPSU provides upgrades to AFFTC mission control rooms to support increasingly complex test missions and telemetry processing and data analysis requirements; JAIL T&E updates for instrumented airborne platforms; TSIS improvements to telemetry acquisition systems; VKF Plant Modernization upgrades to supersonic and hypersonic wind tunnels; Tunnel 4T Modernization upgrades to flex nozzle actuators & control systems; Tunnels A/B/C Modernization to provide superior wind tunnel operations; Advanced Large Military Engine Capability upgrades C1/C2 test cells for testing of advanced high speed air-breathing engines; UHARS development of a high-accuracy inertial-based TSPI truth source to validate inertial and GPS based positioning systems; Advanced Small Military (High-Speed) Engine Capability provides upgrades to T3 test facility systems to support high Mach small engine propulsion test requirements; and T&E Board of Directors coordinates Tri-Service investment and Joint T&E Reliance efforts.			
FY 2012 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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0604759F: <i>Major T&E Investment</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Continue to support - ARSU upgrades critical AFFTC range infrastructure, including range tracking, communications and control systems, to overcome near-term obsolescence; JAll T&E updates for instrumented airborne platforms; TSIS improvements to telemetry acquisition systems; VKF Plant Modernization upgrades to supersonic and hypersonic wind tunnels; Tunnel 4T Modernization upgrades to flex nozzle actuators & control systems; Tunnels A/B/C Modernization to provide superior wind tunnel operations; Advanced Large Military Engine Capability upgrades C1/C2 test cells for testing of advanced high speed air-breathing engines; UHARS development of a high-accuracy inertial-based TSPI truth source to validate inertial and GPS based positioning systems; Advanced Small Military (High-Speed) Engine Capability provides upgrades to T3 test facility systems to support high Mach small engine propulsion test requirements; and T&E Board of Directors coordinates Tri-Service investment and Joint T&E Reliance efforts.</p> <p>FY 2013 Plans: Continue to support - ARSU upgrades critical AFFTC range infrastructure, including range tracking, communications and control systems, to overcome near-term obsolescence; JAll T&E updates for instrumented airborne platforms; TSIS improvements to telemetry acquisition systems; Tunnel 4T Modernization upgrades to flex nozzle actuators & control systems; Tunnels A/B/C Modernization to provide superior wind tunnel operations; Advanced Large Military Engine Capability upgrades C1/C2 test cells for testing of advanced high speed air-breathing engines; UHARS development of a high-accuracy inertial-based TSPI truth source to validate inertial and GPS based positioning systems; Advanced Small Military (High-Speed) Engine Capability provides upgrades to T3 test facility systems to support high Mach small engine propulsion test requirements; and T&E Board of Directors coordinates Tri-Service investment and Joint T&E Reliance efforts.</p>			
<p>Title: I&M (1)</p> <p>Description: Improvement and modernization of the AF capability to test and evaluate Armament/Munitions (A/M)</p> <p>FY 2011 Accomplishments: Continue to support - OWISS development of capability necessary to test in an overwater environment; AMTI development of new HITL capabilities for testing advanced seeker/sensor guidance technologies; ARTM for acquiring and upgrading critical TM equipment; OGT development of capabilities to test munitions in an all-up-round configuration and environment; ACDS upgrades of existing command destruct systems; GRTTCC integration of range data systems; Joint Gulf Range Area Network Development (JGRAND) advanced mobile fiber optic and microwave communications capabilities improvements.</p> <p>FY 2012 Plans: Continue to support - AMTI development of new HITL capabilities for testing advanced seeker/sensor guidance technologies; ARTM for acquiring and upgrading critical TM equipment; ACDS upgrades of existing command destruct systems; GRTTCC integration of range data systems; JGRAND advanced mobile fiber optic and microwave communications capabilities improvements; Combined High Speed/High Resolution EO/IR Imaging provides tracking capability for small, high speed A/M,</p>	16.087	21.018	15.510

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0604759F: <i>Major T&E Investment</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
missiles & airborne platform testing. Next Generation Munitions Test Environment (NGMTE) upgrades aging munitions test capabilities to support advent of larger, smarter weapons systems requiring more precise data. <i>FY 2013 Plans:</i> Continue to support - AMTI development of new HITL capabilities for testing advanced seeker/sensor guidance technologies; GRITCC integration of range data systems; Combined High Speed/High Resolution EO/IR Imaging provides tracking capability for small, high speed A/M, missiles & airborne platform testing; JGRAND advanced mobile fiber optic and microwave communications capabilities improvements. NGMTE upgrades aging munitions test capabilities to support advent of larger, smarter weapons systems requiring more precise data.			
<i>Title:</i> I&M (2) <i>Description:</i> Improvement and modernization of the AF capability to test and evaluate C4ISR <i>FY 2011 Accomplishments:</i> Continue to support - C4ISR Modeling & Simulation to provide the capability to combine synthetic and real-world data to analyze a C4I system's response to operational loads; C2TOC development of a Joint Air Operations Center level test capability to support C2 weapons systems. <i>FY 2012 Plans:</i> Continue to support C2TOC development of a Joint Air Operations Center level test capability to support C2 weapons systems. <i>FY 2013 Plans:</i> Continue to support C2TOC development of a Joint Air Operations Center level test capability to support C2 weapons systems.	3.275	1.600	0.500
Accomplishments/Planned Programs Subtotals	59.469	62.206	42.236

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>
• RDT&E AF, PE 0604256F, Threa...: <i>Test and Evaluation Support</i>	24.805	22.420	22.812	0.000	22.812	20.081	19.076	20.450	20.523	Continuing	Continuing
• RDT&E AF, PE 0605807F, Test ...: <i>Test and Evaluation Support</i>	752.328	704.475	722.071	0.000	722.071	701.000	702.979	716.873	725.979	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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0604759F: <i>Major T&E Investment</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>
• RDT&E AF, PE 0605976F, Facil...: <i>Test and Evaluation Support</i>	46.091	44.547	42.597	0.000	42.597	35.046	43.815	26.899	29.067	Continuing	Continuing
• RDT&E AF, PE 0605978F, Facil...: <i>Test and Evaluation Support</i>	27.438	27.953	27.301	0.000	27.301	23.849	28.871	24.282	24.599	Continuing	Continuing

E. Acquisition Strategy

This program element uses several different contracting strategies to provide the most cost effective T&E investment solutions. The main acquisition strategy is to use full and open competition wherever possible to improve and modernize existing test 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-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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605101F: <i>RAND Project Air Force</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	31.616	27.579	25.579	-	25.579	26.259	26.962	27.213	27.772	Continuing	Continuing
661110: <i>Project Air Force</i>	31.616	27.579	25.579	-	25.579	26.259	26.962	27.213	27.772	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) This program provides for continuing analytical research across a broad spectrum of aerospace issues and concerns. The Project AIR FORCE (PAF) research agenda is focused primarily on mid to long-term problems; in addition, PAF provides quick response assistance for senior Air Force officials on high priority, near term issues. Within these areas, PAF addresses difficult and complex, far-reaching and inter-related questions linked to future strategies, approaches and policies, in order to enhance Air Force senior leadership's deliberations and decisionmaking on major issues. The Air Force Steering Group, chaired by the Vice Chief of Staff, reviews, monitors, and approves PAF annual research efforts. Each project is initiated, processed, and approved IAW PAF Sponsoring Agreement which requires General Officer (or SES equivalent) sponsorship and involvement on a continuing basis. (U) PAF is organized in four primary research program areas: strategy and doctrine; force modernization employment; manpower, personnel and training; and resource management. Integrative research projects are also conducted at the division level with direct support provided through the most applicable program. Research programs address organizational crosscutting issues as defined by specific research themes approved by the Air Force Steering Group. These research themes encompass a wide spectrum of topics including external challenges to national security; terrorism and homeland defense; joint and coalition operations; integrated roadmap for ISR capabilities; enhancing, tailoring and reducing infrastructure to meet new force requirements; potential changes to the Active/Reserve/National Guard/Civilian/Contractor manpower mix; and improved weapon system costing.

(U) The research program will continue to build upon research foundations, examining the evolving security environment, emerging threats, national and military strategy, transformation approaches including investment strategies to provide capabilities within changing Defense budgets, operational concepts to meet evolving and increasingly joint missions, exploiting advanced technologies, increasing the effectiveness and efficiency of combat support, and developing the total force (Active/ Reserve/National Guard/Civilian/Contractor). These efforts will continue to inform and support the senior Air Force leadership regarding personnel management and training; improving logistical efficiencies and force sustainment; ongoing conflicts and joint operations; force structure capabilities, limitations, and operational concepts; and making force structure tradeoffs within resource constraints to meet future national security and Air Force needs. (U) Looking ahead, future research will build upon earlier work to continue to help the Air Force to rapidly and appropriately adapt to the changing world environment and emerging threats; continue to modernize and employ its force structure to provide capabilities within changing DoD budgets; assess lessons learned from recent and ongoing conflicts; develop and utilize its total force; and enhance the support of our aerospace forces, ranging from sustainment of the force structure to agile combat support. (U) PAF research spans functional and organizational boundaries and is managed in a manner to facilitate independence and freedom from organizational bias thereby providing perspectives and insights to senior Air Force leaders free from parochial influences not necessarily in the best interest of the Air Force at large. (U) Benefits of independent non-Department of Defense analysis of complex present day and emerging issues are shared beyond the immediacy of the Air Force. PAF study results are given wide dissemination within the DOD on a routine basis and are deposited with the Defense Technical Information Center available to a broad range of qualified government and commercial-sector individuals and activities. (U) This program is in budget activity 6- Management and Support, because it funds RAND Project AIR FORCE (PAF), the only Air Force Federally Funded Research and Development Center for studies and analyses.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605101F: <i>RAND Project Air Force</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	26.752	27.579	29.579	-	29.579
Current President's Budget	31.616	27.579	25.579	-	25.579
Total Adjustments	4.864	-	-4.000	-	-4.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	5.000	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.136	-	-4.000	-	-4.000

Change Summary Explanation

FY11: Adjustments (Cong General Reductions -\$0.136, Cong Directed Reductions \$0.0, Cong Adds \$0.0, Cong Directed Transfers \$0.0) are reflected in Other Adjustment Row.

FY13: Decrease aligns funds with AF priorities for studies

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: Strategy & Doctrine</p> <p>Description: Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--strategy and doctrine.</p> <p>FY 2011 Accomplishments: Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--strategy and doctrine.</p> <p>FY 2012 Plans: Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--strategy and doctrine.</p> <p>FY 2013 Plans: Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--strategy and doctrine.</p>	7.793	6.798	6.305
<p>Title: Force Development</p> <p>Description: Provides analytical research across a broad spectrum of aerospace issues and concerns--force development employment.</p>	6.848	5.974	5.540

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605101F: <i>RAND Project Air Force</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p><i>FY 2011 Accomplishments:</i> Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--force development employment.</p> <p><i>FY 2012 Plans:</i> Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--force development employment.</p> <p><i>FY 2013 Plans:</i> Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--force development employment.</p>			
<p><i>Title:</i> Manpower, Personnel & Training</p> <p><i>Description:</i> Provides analytical research across a broad spectrum of aerospace issues and concerns--manpower, personnel and training.</p> <p><i>FY 2011 Accomplishments:</i> Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--manpower, personnel and training.</p> <p><i>FY 2012 Plans:</i> Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--manpower, personnel and training.</p> <p><i>FY 2013 Plans:</i> Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--manpower, personnel and training</p>	6.848	5.974	5.540
<p><i>Title:</i> Resource Management</p> <p><i>Description:</i> Provides analytical research across a broad spectrum of aerospace issues and concerns--resource management.</p> <p><i>FY 2011 Accomplishments:</i> Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--resource management.</p> <p><i>FY 2012 Plans:</i> Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--resource management.</p> <p><i>FY 2013 Plans:</i></p>	8.268	7.212	6.689

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--resource management. Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--resource management.			
Title: Intergrative Research/Direct Support	1.859	1.621	1.505
Description: Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--intergrative research/direct support.			
FY 2011 Accomplishments: Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--intergrative research/direct support			
FY 2012 Plans: Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--intergrative research/direct support			
FY 2013 Plans: Provides for continuing analytical research across a broad spectrum of aerospace issues and concerns--intergrative research/direct support.			
Accomplishments/Planned Programs Subtotals	31.616	27.579	25.579

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> Continuing	<u>Total Cost</u> Continuing
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		

E. Acquisition Strategy
A comprehensive review of RAND/Project AIR FORCE was completed in Sep 00 and led to a 5-year (FY01-FY05) Cost Plus / Fixed Fee contract, awarded on 01 Oct 00. A subsequent comprehensive review was conducted in FY05. A follow-on (FY06-FY10) Cost Plus / Fixed Fee contract was awarded in Oct 05. Option 2 of this contract was awarded in Sep 2010.

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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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605502F: <i>Small Business Innovative 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
Total Program Element	317.183	-	-	-	-	-	-	-	-	Continuing	Continuing
663005: <i>Small Business Innovation Research</i>	317.183	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Mission Description not provided.

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	-	-	-	-	-
Current President's Budget	317.183	-	-	-	-
Total Adjustments	317.183	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	317.183	-			
• Other Adjustments	-	-			

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

	FY 2011	FY 2012	FY 2013
Title: Small Business Innovation Research	317.183	-	-
Description: Small Business Innovation Research			
FY 2011 Accomplishments: Small Business Innovation Research			
Accomplishments/Planned Programs Subtotals	317.183	-	-

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605502F: <i>Small Business Innovative Research</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

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.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605712F: <i>Initial Operational Test & Evaluation</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	20.278	17.754	16.197	-	16.197	14.790	13.391	13.086	13.259	Continuing	Continuing
660191: <i>Initial Operational Test & Eval</i>	20.278	17.754	16.197	-	16.197	14.790	13.391	13.086	13.259	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This PE funds Congressionally mandated Initial Operational Test and Evaluation (IOT&E) to support major weapon system acquisition decisions beyond Low-Rate Initial Production (LRIP), Milestone C, full rate production, fielding, and declaration of Initial Operational Capability (IOC). For major systems designated for use in combat, the law requires IOT&E be completed under realistic field conditions before proceeding beyond LRIP. IOT&E will be planned to completely and unambiguously answer all critical operational issues (COI) as thoroughly as possible. IOT&E is conducted to determine the operational effectiveness and suitability and resolve overall mission capability of systems undergoing research and development (R&D) efforts. It is an evaluation of a system's performance when the complete system is tested and evaluated against operational criteria by personnel with the same qualifications as those who will operate, maintain and support the system when deployed. In general, IOT&E is performed on new systems in development, major modifications, and other systems as directed. This PE funds the OT participation in Integrated Test and Evaluation (IT&E), the Air Force participation in Multiservice Operational Test and Evaluation (MOT&E), and Follow-on Operational Test and Evaluation (FOT&E) when it is the continuation of IOT&E activities past the full rate production decision. FOT&E answers specific questions about unresolved COIs and test issues, or completes areas not finished during the IOT&E. This PE also funds related operational test and evaluation (OT&E) activities such as Operational Utility Evaluations (OUE), Early Operational Assessments (EOA), Operational Assessments (OA), and independent IOT&E which support major milestones and decision points prior to Milestone C, full rate production, fielding, or declaration of IOC. IOT&E programs are identified in several system categories: Air; Space; Weapons; Command, Control, Communications, Computers, and Intelligence (C4I); and Combat Support. Air Force Operational Test and Evaluation Center (AFOTEC) obtains general support services from contracts awarded after employing full and open competition contracting strategies. This is a level of effort program element.

Budget Activity Justification: This program is in Budget Activity 6, RDT&E Management Support because this budget activity includes research, development, test and evaluation efforts.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605712F: <i>Initial Operational Test & Evaluation</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	20.665	17.767	16.167	-	16.167
Current President's Budget	20.278	17.754	16.197	-	16.197
Total Adjustments	-0.387	-0.013	0.030	-	0.030
• Congressional General Reductions	-	-0.013			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.269	-			
• Other Adjustments	-0.118	-	0.030	-	0.030

Change Summary Explanation

FY11: Congressional General Reductions -\$0.118 shown in Other Adjustments Row

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: OT&E	13.430	12.352	4.687
Description: Plan, execute, and report IOT&E activities for Air Systems:			
FY 2011 Accomplishments:			
- ALR-69A Radar Warning Receiver: Plan for IOT&E			
- AWACS Block 40/45: Plan for IOT&E			
- B-52 CObat NEtwork Communications Technology: Plan for OA			
- C-130 Avionics Modernization Program: Conduct IOT&E			
- E-3 Diminishing Manufacturing Sources Replacement of Avionics Global Operations and Navigation: Plan for OA			
- E-XX National Airborne Operations Center: Plan for OA			
- F-15 Mark XIIA Mode 5: Conduct OA			
- F-15E Radar Modernization Program: Plan for IOT&E			
- F-22A FOT&E 3.1: Conduct FOT&E			
- HC/MC-130 Recapitalization: Plan for IOT&E			
- KC-46A Replacement Tanker: Early Influence			
- Large Aircraft Infrared Countermeasures Phase II: Conduct IOT&E			
- Miniature Air Launched Decoy: Conduct IOT&E			
- Miniature Air Launched Decoy-Jammer: Conduct OA			

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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605712F: <i>Initial Operational Test & Evaluation</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> - Modular Aircrew Helmet: Conduct IOT&E - QF-16: Plan for EOA <p><i>FY 2012 Plans:</i></p> <ul style="list-style-type: none"> - Advanced Pilot Training System: Plan for EOA - ALR-69A Radar Warning Receiver: Conduct IOT&E - AWACS Block 40/45: Conduct IOT&E - B-52 CObat NEtwork Communications Technology: Conduct OA - E-3 Diminishing Manufacturing Sources Replacement of Avionics Global Operations and Navigation: Plan for OA - F-15 Mark XIIA Mode 5: Conduct IOT&E - F-15E Radar Modernization Program: Conduct IOT&E - F-22A FOT&E 3.1: Complete FOT&E - F-22A Increment 3.2A: Plan for FOT&E - F-22A Increment 3.2B: Early Influence - HC/MC-130 Recapitalization: Conduct IOT&E - KC-46A Replacement Tanker: Plan for OA 1 - Large Aircraft Infrared Countermeasures Phase II: Publish Final Report - Miniature Air Launched Decoy: Conduct IOT&E - Miniature Air Launched Decoy-Jammer: Conduct IOT&E - MQ-9 Hunter-Killer: Conduct OA - QF-16: Conduct OA <p><i>FY 2013 Plans:</i></p> <ul style="list-style-type: none"> - Advanced Pilot Training System: Conduct EOA - B-52 CObat NEtwork Communications Technology: Conduct IOT&E - E-3 Diminishing Manufacturing Sources Replacement of Avionics Global Operations and Navigation: Conduct OA1 - F-15E Radar Modernization Program: Complete IOT&E - F-22A Increment 3.2A: Plan for FOT&E - F-22A Increment 3.2B: Early Influence - KC-46A Replacement Tanker: Conduct OA 1 - Miniature Air Launched Decoy-Jammer: Complete IOT&E - MQ-9 Hunter-Killer: Plan for FOT&E - QF-16: Conduct IOT&E <p><i>Title:</i> OT&E (1)</p>	1.740	0.849	1.924

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605712F: <i>Initial Operational Test & Evaluation</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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<p>Description: Plan, execute, and report IOT&E activities for Space Systems:</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> - Advanced EHF Satellite Communications: Plan for OUE - Enhanced Polar System: Early Influence - Global Positioning System Block III: Early Influence - Military GPS User Equipment: Early Influence - GPS Next Generation Control Segment: Early Influence - GPS Selective Availability / Anti-Spoofing Module: Conduct MOT&E - Joint Space Operations Center Mission System: Plan for EOA - Space Based Infrared System: Plan for OUE - Spaced Based Space Surveillance: Conduct IOT&E - Space Based Space Surveillance Follow-on: Early Influence - Space Fence: Plan for EOA <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Advanced EHF Satellite Communications: Conduct OUE - Enhanced Polar System: Plan for EOA - Global Positioning System Block III: Plan for EOA - Military GPS User Equipment: Plan for EOA - GPS Next Generation Control Segment: Early Influence - Joint Space Operations Center Mission System: Conduct OUE - Space Based Infrared System: Conduct OUE 1 - Space Based Space Surveillance Follow-on: Early Influence - Space Fence: Conduct EOA <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Advanced EHF Satellite Communications: Conduct MOT&E - Enhanced Polar System: Conduct EOA - Global Positioning System Block III: Conduct EOA - Military GPS User Equipment: Conduct EOA - GPS Next Generation Control Segment: Early Influence - Joint Space Operations Center Mission System: Conduct OA - Space Based Infrared System: Plan for OUE 2 			
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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 6: <i>RDT&E Management Support</i>		R-1 ITEM NOMENCLATURE PE 0605712F: <i>Initial Operational Test & Evaluation</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
- Space Based Space Surveillance Follow-on: Early Influence - Space Fence: Conduct OA				
Title: OT&E (2) Description: Plan, execute, and report IOT&E activities for Weapon Systems: FY 2011 Accomplishments: - AIM-9X Block II: Conduct OA - Joint Air-to-Surface Standoff Missile Extended Range: Conduct IOT&E - Small Diameter Bomb Increment II: Plan for OA FY 2012 Plans: - AIM-9X Block II: Conduct MOT&E - B-61 Life Extension Program: Early Influence - Joint Air-to-Surface Standoff Missile Extended Range: Conduct IOT&E - Long Range Stand Off Weapon: Early Influence - Small Diameter Bomb Increment II: Conduct OA FY 2013 Plans: - AIM-9X Block II: Complete MOT&E - AIM-120C Electronic Protection Improvement Program (AIM-120C EPIP): Conduct MOT&E - B-61 Life Extension Program: Early Influence - Hard Target Void Sensing Fuze: Conduct OA - Joint Air-to-Surface Standoff Missile Extended Range: Publish Final Report - Long Range Stand Off Weapon: Early Influence - Small Diameter Bomb Increment II: Complete OA		1.372	1.950	5.526
Title: OT&E (3) Description: Plan, execute, and report IOT&E activities for Command, Control, Communications, Computer, and Intelligence (C4I) Programs FY 2011 Accomplishments: - Three Dimensional Expeditionary Long Range Radar: Plan for EOA - Air Operations Center as a Weapon System: Plan for OA - B-1 Fully Integrated Data Link: Conduct IOT&E		2.432	2.572	3.913

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605712F: <i>Initial Operational Test & Evaluation</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> - B-2 Extremely High Frequency Satellite Communications and Computer Upgrade Program (B-2 EHF SATCOM): Conduct IOT&E - Battle Control System – Fixed: Plan for IOT&E - Common Link Integration Processor: Conduct IOT&E - Expeditionary Combat Support System: Plan for OA - Family of Advanced Beyond Line Of Sight Terminals: Plan for OA - Global Hawk Spirals 4 Multiple Platform Radar Technology Insertion Program: Plan for IOT&E - Integrated Broadcast Service: Plan for MOT&E - Joint Precision Approach & Landing System: Early Influence - Key Management Infrastructure: Conduct IOT&E - MQ-9 Airborne Signals Intelligence Payload 2C: Conduct OA <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Three Dimensional Expeditionary Long Range Radar: Plan for EOA - Air Force Integrated Personnel and Pay System: Early Influence - Air Operations Center as a Weapon System: Plan for EOA - B-1 Fully Integrated Data Link: Publish Final Report - Battle Control System – Fixed: Conduct IOT&E - Command and Control Air Operation Suite: Plan for OA - Command and Control Information Services: Plan for OA - Expeditionary Combat Support System: Conduct OA - Family of Advanced Beyond Line Of Sight Terminals: Plan for OA - Global Hawk Spiral 4 Multiple Platform Radar Technology Insertion Program: Plan for IOT&E - Integrated Broadcast Service: Plan for MOT&E - Joint Precision Approach & Landing System: Early Influence - MQ-9 Airborne Signals Intelligence Payload 2C: Plan for IOT&E <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Three Dimensional Expeditionary Long Range Radar: Conduct EOA - Air Force Integrated Personnel and Pay System: Plan for EOA - Air Operations Center as a Weapon System: Conduct EOA - Command and Control Air Operation Suite: Conduct OA - Command and Control Information Services: Conduct OA - Expeditionary Combat Support System: Conduct IOT&E - Family of Advanced Beyond Line Of Sight Terminals: Conduct OA 			

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605712F: <i>Initial Operational Test & Evaluation</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> - Global Hawk Spiral 4 Multiple Platform Radar Technology Insertion Program: Plan for IOT&E - Integrated Broadcast Service: Conduct MOT&E - Joint Precision Approach & Landing System: Early Influence - MQ-9 Airborne Signals Intelligence Payload 2C: Conduct IOT&E 			
<p>Title: OT&E (4)</p> <p>Description: Plan, execute, and report IOT&E activities for Combat Support Programs</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> - Joint Counter Radio-Controlled Improvised Explosive Device EW: Plan for OA - Joint Mission Planning System: Conduct IOT&E <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Joint Counter Radio-Controlled Improvised Explosive Device EW: Conduct MOT&E - Joint Mission Planning System: Publish Final Report <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Integrated Aircrew Ensemble: Conduct OA - Joint Counter Radio-Controlled Improvised Explosive Device EW: Conduct MOT&E 	1.304	0.031	0.147
Accomplishments/Planned Programs Subtotals	20.278	17.754	16.197

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>
• O&M AF PE 0207426, AFOTEC O&...: AFOTEC O&M	35.810	35.968	34.274	0.000	34.274	34.466	34.334	34.675	35.601	0.000	0.000

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.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605807F: <i>Test and Evaluation 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	752.328	704.475	722.071	-	722.071	701.000	702.979	716.873	725.979	Continuing	Continuing
6606TG: <i>46 Test Group</i>	32.095	31.129	31.442	-	31.442	31.592	32.024	32.509	33.195	Continuing	Continuing
6606TS: <i>Test and Evaluation Support</i>	720.233	673.346	690.629	-	690.629	669.408	670.955	684.364	692.784	Continuing	Continuing

A. Mission Description and Budget Item Justification

Test facilities, capabilities and resources operated through this program include wind tunnels, rocket and jet engine test cells, armament test ranges, hardware-in-the-loop test facilities, climatic test facilities, avionics test facilities, aircraft testbeds, dry lakebed landing sites, instrumented test ranges, civilian payroll, and contractor services. It also provides resources for maintaining and modifying as required Air Force Materiel Command (AFMC) assigned test and test support coded aircraft. No acquisition contracts are funded from this program; test support contracts for services and supplies and equipment are predominantly awarded on the basis of full and open competition.

This program is in Budget Activity 6, RDT&E Management Support, because this budget activity includes research, development, test, and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	759.868	654.475	578.997	-	578.997
Current President's Budget	752.328	704.475	722.071	-	722.071
Total Adjustments	-7.540	50.000	143.074	-	143.074
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	50.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-7.540	-	143.074	-	143.074

Change Summary Explanation

FY11: The following decreases: Cong General Reductions of -\$3.8M, FFRDC of -\$2.0K, and \$-3.7M civ pay are reflected in the Other Adjustment Row.

FY12: \$50M Congressional add for restoral of civilian pay as a result of an FY12PB action.

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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 6: <i>RDT&E Management Support</i>	PE 0605807F: <i>Test and Evaluation Support</i>

FY13: \$93.1M increase for civilian pay pricing and restoral of 346 positions and \$46.8M adjustment to align funding between PEs within the T&E Portfolio for proper execution. \$3.6M increase for fuel pricing, \$700K non-pay inflation, and \$2.0M for a munitions testing requirement. Decrease of \$3.1M to reverse civilian pay raises built into the FY13 civilian pay pricing.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605807F: <i>Test and Evaluation Support</i>	PROJECT 6606TG: <i>46 Test Group</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
6606TG: <i>46 Test Group</i>	32.095	31.129	31.442	-	31.442	31.592	32.024	32.509	33.195	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Project infrastructure support is provided for the unique capabilities of the 46th Test Group (TG) facilities: Central Inertial Guidance Test Facility (CIGTF/746th Test Squadron), the Holloman High Speed Test Track (HHSTT/846th Test Squadron) and the National Radar Cross Section (RCS) Test Facility (NRTF/781st Test Squadron), the 586th Flight Test Squadron Detachment 1 (Det 1), 46 TG Operating Location (46 TG OL-AA) at Kirtland AFB, and 46 TG Operation Location (46 TG OL-AC) at Wright-Patterson AFB. CIGTF provides independent test and evaluation of inertial, Global Positioning System, and integrated systems used for aircraft navigation and missile guidance systems, including vulnerability to electronic interference. HHSTT capabilities include full-scale testing in flight environments, realistic live-fire simulations, test item and target fragment recovery, and precision trajectory analysis and high speed photography. NRTF provides radar cross section (RCS) monostatic and bistatic amplitude and phase measurements, antenna pattern measurements, glint and near field measurements for low observable targets. Det 1 provides the liaison function for coordinating and scheduling all US Air Force test and training operations at White Sands Missile Range (WSMR). OL-AA provides test support for the Air Force Research Lab (AFRL) Directed Energy Division. The 586th Flight Test Squadron executes flight test and test support for advanced avionics and weapons development of joint, international and commercial test programs. The 46 TG OL-AC includes the Landing Gear Test Facility (LGTF) with capabilities such as variable and fixed inertia dynamometers, compression/tension load applicators, 4 drop towers, a burst pit and a dynamic load simulator. The 46th TG support services contracts are awarded on the basis of full and open competition.

This program is in Budget Activity 6, RDT&E Management Support, because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

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

	FY 2011	FY 2012	FY 2013
Title: 46th Test Group	32.095	31.129	31.442
Description: Provide infrastructure at the 46th Test Group (TG) to support testing of DoD, other Government Agencies, foreign military sales, and commercial weapon systems.			
FY 2011 Accomplishments: Total consists of utilities, contractor services, and civilian pay.			
FY 2012 Plans: Total consists of utilities, contractor services, and civilian pay.			
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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605807F: <i>Test and Evaluation Support</i>	PROJECT 6606TG: <i>46 Test Group</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Total consists of utilities, contractor services, and civilian pay.			
Accomplishments/Planned Programs Subtotals	32.095	31.129	31.442

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 0604256F, Threat Simulator De...: <i>Threat Simulator Development</i>	24.805	22.420	22.812	0.000	22.812	20.081	19.076	20.450	20.523	Continuing	Continuing
• PE 0604759F, Major Test and Eval...: <i>Major T&E Investment</i>	59.469	62.206	42.236	0.000	42.236	43.044	42.899	46.198	47.688	Continuing	Continuing
• PE 0605976F, Facility Restoratio...: <i>Facility Restoration and Modernization</i>	46.091	44.547	42.597	0.000	42.597	35.046	43.815	26.899	29.067	Continuing	Continuing
• PE 0605978F, Facility Sustainmen...: <i>Facility Sustainment</i>	27.438	27.953	27.301	0.000	27.301	23.849	28.871	24.282	24.599	Continuing	Continuing

D. Acquisition Strategy

Not applicable

E. Performance Metrics

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

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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 6: <i>RDT&E Management Support</i>				R-1 ITEM NOMENCLATURE PE 0605807F: <i>Test and Evaluation Support</i>				PROJECT 6606TS: <i>Test and Evaluation Support</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
6606TS: <i>Test and Evaluation Support</i>	720.233	673.346	690.629	-	690.629	669.408	670.955	684.364	692.784	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project provides resources to operate the Air Force test activities which are included in the Department of Defense (DoD) Major Range and Test Facility Base (MRTFB). Test facilities/capabilities operated through this program include wind tunnels, rocket and jet engine test cells, hypersonic and subsonic testing, modeling and simulation, technology, limited space environmental simulation chambers, armament test ranges, hardware-in-the-loop test facilities, climatic test facilities, avionics test facilities, aircraft testbeds, dry lakebed landing sites, instrumented test ranges, and test aircraft maintenance, as well as USAF Test Pilot School. Test and Evaluation (T&E) Support funds institutional test infrastructure activities including: Command and supervisory staffs; supply stocks; maintenance, repair, and replacement of worn or obsolete test equipment and facilities; test infrastructure for data collection, transmission, reduction, and analysis; civilian salaries; temporary duty travel; range operations and material support contract costs for hardware and software engineering and maintenance; and minor improvement and modernization projects. It also funds institutional test aircraft depot level maintenance such as: Programmed Depot Maintenance (PDM), the calendar-based cyclic scheduling of aircraft into depots for update/inspection; modifications and any other depot level repairs required by the aircraft System Program Directors (SPD); engine overhauls; depot-provided area assistance; and assorted ground support equipment overhauls. Three major Air Force test centers are supported by this project: (1) Arnold Engineering and Development Center (AEDC), located at Arnold Air Force Base (AFB), TN, whose institutional test infrastructure supports operations of the largest complex of ground test facilities in the world (includes transonic, supersonic, and hypersonic wind tunnels; rocket motor and turbine engine test cells; space environmental test chambers, hyperballistic ranges; and other specialized facilities). Included are operations at the National Full-Scale Aerodynamic Complex (NFAC) located at NASA's AMES Research Center, California as well as operations at Tunnel 9 located at White Oak, Maryland. (2) Air Force Flight Test Center (AFFTC), located at Edwards AFB, CA, whose institutional test infrastructure supports weapons system development and operational test and evaluation for aircraft, aircraft subsystems and aircraft weapon systems, aerospace research vehicles, unmanned miniature vehicles, cruise missiles, parachute delivery/recovery systems, cargo handling systems, communications, information operations, and Electronic Warfare (EW) systems for DoD and allied forces. The AFFTC mission includes the USAF Test Pilot School. (3) Air Armament Center (AAC) 46th Test Wing (TW) located at Eglin AFB, FL, is a joint test and training complex of 724 square miles of land area, and approximately 123,000 square miles of water area. AAC 46TW provides the institutional test infrastructure required to conduct developmental and operational test and evaluation of non-nuclear air armaments (including aircraft guns, ammunition, and air-to-surface and air-to-air guided munitions); Command, Control, Communications, Computers and Intelligence/Surveillance/Reconnaissance (C4ISR) systems; target acquisition and weapon delivery systems; multi-service climatic simulation capability; and special operations aircraft systems. AAC 46TW provides a scientific test process that supports the development, production, sustainment, and enhancement of munitions systems that support tri-service digital weapons development. T&E support services contracts are awarded on the basis of full and open competition.

This program is in Budget Activity 6, RDT&E Management Support, because this budget activity includes research, development, test and evaluation efforts, and funds to sustain and/or modernize the installations or operations required for general research, development, and test and evaluation.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605807F: <i>Test and Evaluation Support</i>	PROJECT 6606TS: <i>Test and Evaluation Support</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Title: AEDC</p> <p>Description: Provide infrastructure to support testing of DoD, other Government Agencies, FMS and commercial weapon systems at Arnold Engineering and Development Center (AEDC).</p> <p>FY 2011 Accomplishments: Total consists of utilities, contractor services, and civilian pay.</p> <p>FY 2012 Plans: Total consists of utilities, contractor services, and civilian pay. Decrease in FY 2012 due to manpower reduction.</p> <p>FY 2013 Plans: Total consists of utilities, contractor services, and civilian pay. Adjustment is a result of aligning funds between PEs within the T&E portfolio for proper execution.</p>		155.309	152.049	162.292
<p>Title: AFFTC</p> <p>Description: Continue to provide institutional test infrastructure support at the Air Force Flight Test Center (AFFTC) and continue to operate the USAF Test Pilot School.</p> <p>FY 2011 Accomplishments: Total consists of utilities, contractor services, civilian pay, and aircraft flying costs.</p> <p>FY 2012 Plans: Total consists of utilities, contractor services, civilian pay, and aircraft flying costs. Decrease in FY12 due to manpower reduction.</p> <p>FY 2013 Plans: Total consists of utilities, contractor services, flight test operations and support and civilian pay. Adjustment is a result of aligning funds within the T&E portfolio for proper execution.</p>		379.640	357.138	332.001
<p>Title: 46th Test Wing</p> <p>Description: Continue institutional test infrastructure support at 46th Test Wing (TW) for non-nuclear air armaments.</p> <p>FY 2011 Accomplishments: Total consists of utilities, contractor services, civilian pay, and aircraft flying costs.</p> <p>FY 2012 Plans:</p>		185.284	164.159	196.336

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605807F: <i>Test and Evaluation Support</i>	PROJECT 6606TS: <i>Test and Evaluation Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Total consists of utilities, contractor services, civilian pay, and aircraft flying costs. Decrease in FY 2012 due to manpower reduction. FY 2013 Plans: Total consists of utilities, contractor services, flight test operations and support, and civilian pay. Adjustment is a result of aligning funds within the T&E portfolio for proper execution.			
Accomplishments/Planned Programs Subtotals	720.233	673.346	690.629

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 0604256F, Threat Simulator De...: <i>Threat Simulator Development</i>	24.805	22.420	22.812	0.000	22.812	20.081	19.076	20.450	20.523	Continuing	Continuing
• PE 0604759F, Major Test and Eval...: <i>Major T&E Investment</i>	59.469	62.206	42.236	0.000	42.236	43.044	42.899	46.198	47.688	Continuing	Continuing
• PE 0605976F, Facility Restoratio...: <i>Facility Restoration and Modernization</i>	46.091	44.547	42.597	0.000	42.597	35.046	43.815	26.899	29.067	Continuing	Continuing
• PE 0605978F, Facility Sustainmen...: <i>Facility Sustainment</i>	27.438	27.953	27.301	0.000	27.301	23.849	28.871	24.282	24.599	Continuing	Continuing

D. Acquisition Strategy

Not applicable.

E. Performance Metrics

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

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605860F: <i>Rocket Systems Launch Program (RSLP)</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	23.431	157.799	16.200	-	16.200	16.459	16.800	17.164	17.390	Continuing	Continuing
661023: <i>Rocket System Launch Program (RSLP)</i>	23.431	157.799	16.200	-	16.200	16.459	16.800	17.164	17.390	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Rocket Systems Launch Program (RSLP) provides responsive space and Research, Development, Test and Evaluation (RDT&E) launch vehicle support to DoD and other government agencies using commercial launch systems and excess ballistic missile assets. The RSLP mission was established by the Secretary of Defense in 1972. It provides mission planning, payload integration, vehicle acquisition, processing, and launch operations, booster storage and disposition, aging surveillance, maintenance and logistics support for selected DoD responsive space and RDT&E launches. Costs directly attributable to a specific launch or program (e.g. reliability of flight testing, maintenance of launch vehicle processing infrastructure) are paid by the user (Air Force, Navy, Army, Missile Defense Agency (MDA), Defense Advanced Research Project Agency (DARPA), National Reconnaissance Office (NRO), etc.). RSLP maintains exclusive control of deactivated Minuteman and Peacekeeper assets used in testing to include refurbishment, transportation and handling, storage, and launch services. RSLP also funds general research and development efforts for launch to enhance the reliability of the Minotaur fleet vehicles (e.g., Minotaur IV third stage gas generator diffuser modification).

This program is in Budget Activity 06 - RDT&E Management Support, since RSLP provides research and development effort and/or operations support for general research and development use.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	23.551	158.096	16.170	-	16.170
Current President's Budget	23.431	157.799	16.200	-	16.200
Total Adjustments	-0.120	-0.297	0.030	-	0.030
• Congressional General Reductions	-	-0.297			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.120	-	0.030	-	0.030

Change Summary Explanation

FY11:

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605860F: <i>Rocket Systems Launch Program (RSLP)</i>
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-\$0.120M for Congressional General Reductions (CGRs).

FY12:
-\$0.297M for CGRs.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: STORAGE/REFURBISHMENT/DEMIL</p> <p>Description: Storage, refurbishment, inventory control, and demil of deactivated Minuteman, Peacekeeper and other missile flight test assets</p> <p>FY 2011 Accomplishments: Continued storage, refurbishment, inventory control, and demil of deactivated Minuteman, Peacekeeper and other missile flight test assets and performed research and development support operations as required; Continued program office support and related support activities such as, but not limited to mission support, special studies, SETA, FFRDC, etc. Initiated new inventory control/demil procedures.</p> <p>FY 2012 Plans: Continue storage, refurbishment, inventory control, and demil of deactivated Minuteman, Peacekeeper and other missile flight test assets and perform research and development support operations as required; Continue program office support and related support activities such as, but not limited to mission support, special studies, SETA, FFRDC, etc. Continue demil efforts; Complete new inventory control procedures (Air Force Comprehensive Assessment of Nuclear Sustainment (AFCANS)).</p> <p>FY 2013 Base Plans: Continue storage, refurbishment, inventory control, and demil of deactivated Minuteman, Peacekeeper and other missile flight test assets and perform research and development support operations as required; Continue program office support and related support activities such as, but not limited to mission support, special studies, SETA, FFRDC, etc.</p> <p>FY 2013 OCO Plans: N/A</p>	17.885	17.990	11.423	-	11.423
<p>Title: AGING SURVEILLANCE</p> <p>Description: Perform aging surveillance-related activities on stored motors</p> <p>FY 2011 Accomplishments:</p>	5.180	5.546	4.777	-	4.777

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605860F: <i>Rocket Systems Launch Program (RSLP)</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Continued performing aging surveillance-related activities on stored motors; Continued performing analyses/ studies to identify and evaluate potential safety-related issues affecting stored motors; Continued program office support and related support activities such as, but not limited to mission support, special studies, SETA, FFRDC, etc FY 2012 Plans: Continue performing aging surveillance-related activities on stored motors; Continue performing analyses/ studies to identify and evaluate potential safety-related issues affecting stored motors; Continue program office support and related support activities such as, but not limited to mission support, special studies, SETA, FFRDC, etc FY 2013 Base Plans: Continue performing aging surveillance-related activities on stored motors; Continue performing analyses/ studies to identify and evaluate potential safety-related issues affecting stored motors; Continue program office support and related support activities such as, but not limited to mission support, special studies, SETA, FFRDC, etc FY 2013 OCO Plans: N/A					
Title: MINOTAUR LAUNCH SUPPORT Description: Perform Minotaur launch support activities FY 2011 Accomplishments: Performed Minotaur launch support activities FY 2012 Plans: N/A FY 2013 Base Plans: N/A FY 2013 OCO Plans: N/A	0.366	-	-	-	-
Title: OTHER LAUNCH SUPPORT SERVICES	-	134.263	-	-	-

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605860F: <i>Rocket Systems Launch Program (RSLP)</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Description: Perform non-Minotaur Launch services activities FY 2011 Accomplishments: N/A FY 2012 Plans: Provide vehicle acquisition, processing, launch services FFRDC and SETA support, mission assurance, and launch operations to launch NOAA's Deep Space Climate Observatory (DSCOVR) mission. FY 2013 Base Plans: N/A FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	23.431	157.799	16.200	-	16.200

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>
• 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
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.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605864F: <i>Space Test 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	44.468	47.409	10.051	-	10.051	-	-	-	-	Continuing	Continuing
662617: <i>Free-Flyer Spacecraft Missions</i>	44.468	47.409	10.051	-	10.051	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Space Test Program (STP) conducts space test missions for the purpose of accelerating DoD space technology transformation while lowering developmental risk. The program flies an optimally selected number of DoD sponsored experiments consistent with priority, opportunity, and funding. STP missions are the most cost-effective way to flight test new space system technologies, concepts and designs, providing an inexpensive way to:

- Support the space acquisition block development approach
- Demonstrate and develop responsive research and development (R&D) space capabilities
- Provide early operational capabilities to quickly react to new developments
- Perform operational risk reduction through direct flight test of prototype components
- Improve operational design by characterizing the space environment, event, or sensor physics proposed for an operational system/system upgrade
- Develop, test, and acquire advanced payload support hardware for small and medium expendable launch vehicles (LV) and unmanned spaceflight vehicles

The Deputy Secretary of Defense Space Test Program Management & Funding Policy, issued in Jul 2002, reaffirmed STP as the primary provider of spaceflight for the DoD space research community. The Jul 2002 policy statement also reaffirms STP's role as the single manager for all DoD payloads on the Space Shuttle and the International Space Station. In FY11, STP provided launch services to 24 SERB-approved experiments including seven long-duration experiments on the ISS. FY11 also saw the launch of an additional 13 experiments on the Shuttle or other man-rated systems with additional integration to the ISS. It also provided operations support for free-flyer experiments and long-duration external experiments on the ISS. The DoD Space Experiments Review Board (SERB) approved and prioritized 63 experiments in 2011 as candidates for launch services.

Beginning in FY13, new STP efforts are terminated. FY13 efforts support program closeout and termination. STP-2 integration and mission will be continued in FY13-FY15 via existing funding in PE 0603401F Advanced Spacecraft Technology, RDT&E AF. STP-2 is a dedicated research and development launch mission that also supports the commercial new entrant launch strategy.

STP is in Budget Activity 6, RDT&E Management Support, because it supports RDT&E satellite launches.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605864F: <i>Space Test 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	47.623	47.926	49.569	-	49.569
Current President's Budget	44.468	47.409	10.051	-	10.051
Total Adjustments	-3.155	-0.517	-39.518	-	-39.518
• Congressional General Reductions	-	-0.517			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.545	-			
• Other Adjustments	-0.610	-	-39.518	-	-39.518

Change Summary Explanation

FY11:

-\$2.545M for SBIR.

-\$0.610M for Congressional General Reductions (CGRs).

FY12:

-\$0.517M for CGRs.

FY13:

Program net decrease -\$39.518M (-\$39.569M for termination of Space Test Program; +\$0.051M inflationary factor adjustment to remaining \$10.000M)

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: PROGRAM SUPPORT	1.484	1.257	0.283
Description: Provide program support for piggyback/secondary, Small Launch Vehicle, Medium Launch Vehicle, NASA Shuttle, the ISS, manned and ISS resupply, and commercial spaceflight missions			
FY 2011 Accomplishments: Provided program support for piggyback/secondary, Small Launch Vehicle, Medium Launch Vehicle, NASA Shuttle, the ISS, manned and ISS resupply, and commercial spaceflight missions			
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 6: <i>RDT&E Management Support</i>		R-1 ITEM NOMENCLATURE PE 0605864F: <i>Space Test Program</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Provide program support for piggyback/secondary, Small Launch Vehicle, Medium Launch Vehicle, the ISS, ISS resupply, and commercial spaceflight missions, and begin program termination management, mission manifest changes/updates, documentation and records storage, and other closeout activities as required to terminate program FY 2013 Plans: Provide program support for closeout of spaceflight missions, and complete program termination management, documentation and records storage, and other activities as required to terminate program				
Title: PAYLOAD INTEGRATION Description: Initiate, develop, and continue integration of payloads onto piggyback/secondary, Small Launch Vehicle, Medium Launch Vehicle, NASA Shuttle, the ISS, manned and ISS resupply, and commercial spaceflight missions to include acquisition of associated spacecraft and integration hardware FY 2011 Accomplishments: Initiated, developed, and continued integration of payloads onto piggyback/secondary, Small Launch Vehicle, Medium Launch Vehicle, NASA Shuttle and man-rated LVs, the ISS, ISS resupply and commercial spaceflight missions to include acquisition of associated spacecraft and integration hardware FY 2012 Plans: Complete remaining payload integration efforts onto piggyback/secondary, Small Launch Vehicle, Medium Launch Vehicle, the ISS, ISS resupply and commercial spaceflight missions to include acquisition of associated spacecraft and integration hardware		21.597	9.297	-
Title: LAUNCH VEHICLE AND LAUNCH SERVICES Description: Initiate and continue purchase of launch vehicles and launch vehicle support for piggyback/secondary, Small Launch Vehicle, Medium Launch Vehicle, NASA Shuttle, the ISS, manned and ISS resupply, and commercial spaceflight missions FY 2011 Accomplishments: Initiated and continued purchase and integration of launch vehicles and launch vehicle support for piggyback/secondary, Small Launch Vehicle, Medium Launch Vehicle, NASA Shuttle, the ISS, manned and ISS resupply, and commercial spaceflight missions FY 2012 Plans: Continue purchase and integration of launch vehicles and launch vehicle support for piggyback/secondary, Small Launch Vehicle, Medium Launch Vehicle, ISS, and ISS resupply, and commercial spaceflight missions for maximum flyout of existing, approved payloads to support program termination FY 2013 Plans:		14.585	29.785	1.737

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605864F: <i>Space Test Program</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Complete return-flight support for final Houston-based missions			
Title: ON ORBIT SATELLITE OPERATIONS	5.302	7.070	8.031
Description: Initiate, develop, and continue first-year operations and operations planning for STP-sponsored missions.			
FY 2011 Accomplishments: Initiated, developed, and continued first-year operations and operations planning for STP-sponsored missions.			
FY 2012 Plans: Develop and continue first-year operations and operations planning for STP-sponsored missions.			
FY 2013 Plans: Complete first-year operations and/or operations support for final STP-sponsored missions in support of program termination			
Title: LAUNCH STUDIES	1.500	-	-
Description: Conduct studies to explore future launch opportunities, risk reduction activities, and mission planning			
FY 2011 Accomplishments: Funded studies for new small launch vehicle mission			
Accomplishments/Planned Programs Subtotals	44.468	47.409	10.051

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>
• Related Procurement:: 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
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.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605976F: <i>Facility Restoration and Modernization - T&E</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	46.091	44.547	42.597	-	42.597	35.046	43.815	26.899	29.067	Continuing	Continuing
6606MC: <i>Facility Restoration and Modernization - T&E</i>	46.091	44.547	42.597	-	42.597	35.046	43.815	26.899	29.067	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Restoration includes repair and replacement work to restore damaged facilities due to accident or failure attributable to inadequate sustainment, excessive age, or other causes. Modernization includes alteration of facilities to implement a new, higher standard (including regulatory changes), to accommodate new functions, or to replace building components that typically last more than 50 years (such as foundations and structural components). Other tasks associated with facilities operations (such as custodial services, grass cutting, and the provision of central utilities) are not included. These restoration/modernization funds support the following Air Force test facilities: 46th Test Group (TG) at Holloman AFB, NM, the 46th Test Wing (TW) at Eglin AFB, FL, the Arnold Engineering and Development Center (AEDC) at Arnold AFB, TN and the Air Force Flight Test Center (AFFTC) at Edwards AFB.

Budget Activity Justification: This program element is in Budget Activity 6, RDT&E Management Support, because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	46.327	44.547	45.723	-	45.723
Current President's Budget	46.091	44.547	42.597	-	42.597
Total Adjustments	-0.236	-	-3.126	-	-3.126
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.236	-	-3.126	-	-3.126

Change Summary Explanation

FY11: Cong General Reductions -\$0.236 are reflected in BY1 Other Adjustment Row.

FY13: \$3.1M reduction to fund higher DoD priorities within the T&E portfolio.

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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 6: <i>RDT&E Management Support</i>		R-1 ITEM NOMENCLATURE PE 0605976F: <i>Facility Restoration and Modernization - T&E</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Title: Facility restoration and modernization at the 46 TG</p> <p>Description: Facility restoration and modernization at the 46 TG.</p> <p>FY 2011 Accomplishments: The 46 TG requirements include, but are not limited to the following categories: road repair, HVAC repairs and replacements, roof repairs and replacements, test track repairs, minor construction and infrastructure repairs to include underground power lines.</p> <p>FY 2012 Plans: The 46 TG requirements include, but are not limited to the following categories: road repair, HVAC repairs and replacements, roof repairs and replacements, test track repairs, minor construction and infrastructure repairs to include underground power lines.</p> <p>FY 2013 Plans: The 46 TG requirements include, but are not limited to the following categories: road repair, HVAC repairs and replacements, roof repairs and replacements, test track repairs, minor construction and infrastructure repairs to include underground power lines.</p>		0.462	0.802	0.825
<p>Title: Facility restoration and modernization at the 46 TW</p> <p>Description: Facility restoration and modernization at the 46 TW.</p> <p>FY 2011 Accomplishments: The 46TW requirements sustain the integrity of the test facility structure and to enhance accessibility to the test ranges. Examples of these requirements include, but are not limited to the following test structures or categories; replace several munitions storage magazines, install emergency back-up power for Radar/Optical tracking testing, replace air make-up unit, pave range access roads to accommodate external customer testing, replace roofs on mission critical buildings, install lightning protection to buildings within munitions storage areas, install fire suppression systems test facilities, environmental clean-up and disposal and corrosion control of critical structures. Minor construction projects, such as replacement of windows, doors, HVAC units, fiber optics, and storm mitigation which will all preserve the 46TW sites and infrastructure.</p> <p>FY 2012 Plans: The 46 TW requirements include, but are not limited to, the following categories: range roads, fiber-optic communications grid, roofing, windows, doors, fire protection, erosion control, lightening protection, environmental clean-up, corrosion control, HVAC, minor construction/reconstruction of Range test sites and facilities; evaluation and implementation of storm mitigation efforts to protect critical test sites; fiber optic cable installation and interconnectivity to enhance communications, data transfer, and instrumentation across the range and test facilities.</p> <p>FY 2013 Plans:</p>		2.359	2.316	2.383

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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 6: <i>RDT&E Management Support</i>		R-1 ITEM NOMENCLATURE PE 0605976F: <i>Facility Restoration and Modernization - T&E</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
The 46 TW requirements include, but are not limited to, the following categories: range roads, fiber-optic communications grid, roofing, windows, doors, fire protection, erosion control, lightening protection, environmental clean-up, corrosion control, HVAC, minor construction/reconstruction of Range test sites and facilities; evaluation and implementation of storm mitigation efforts to protect critical test sites; fiber optic cable installation and interconnectivity to enhance communications, data transfer, and instrumentation across the range and test facilities.				
<p>Title: Facility restoration and modernization at AEDC</p> <p>Description: Facility restoration and modernization at AEDC.</p> <p>FY 2011 Accomplishments: AEDC projects continue revitalizing of the Engine Test Facilities, Propulsion Wind Tunnels, Von Karman Test Facilities, and Space and Missile chambers located at Arnold AFB, TN, the National Full-Scale Aerodynamic Complex (NFAC) located at NASA Ames Research Center, CA, and Tunnel 9 located at White Oak, Maryland. Projects to restore and modernize the supporting plant facilities and to perform project specific planning and design. Also includes large-scale projects that directly support engine development, the Joint Strike Fighter program, hypersonic programs, the Missile Defense Agency, and spacecraft test and evaluation.</p> <p>FY 2012 Plans: AEDC projects continue revitalizing of the Engine Test Facilities, Propulsion Wind Tunnels, Von Karman Test Facilities, and Space and Missile chambers located at Arnold AFB, TN, the National Full-Scale Aerodynamic Complex (NFAC) located at NASA Ames Research Center, CA, and Tunnel 9 located at White Oak, Maryland. Projects to restore and modernize the supporting plant facilities and to perform project specific planning and design. Also includes large-scale projects that directly support engine development, the Joint Strike Fighter program, hypersonic programs, the Missile Defense Agency, and spacecraft test and evaluation.</p> <p>FY 2013 Plans: AEDC projects continue revitalizing of the Engine Test Facilities, Propulsion Wind Tunnels, Von Karman Test Facilities, and Space and Missile chambers located at Arnold AFB, TN, the National Full-Scale Aerodynamic Complex (NFAC) located at NASA Ames Research Center, CA, and Tunnel 9 located at White Oak, Maryland. Projects to restore and modernize the supporting plant facilities and to perform project specific planning and design. Also includes large-scale projects that directly support engine development, the Joint Strike Fighter program, hypersonic programs, the Missile Defense Agency, and spacecraft test and evaluation.</p>		39.653	37.063	34.900
<p>Title: Facility restoration and modernization at AFFTC</p> <p>Description: Facility restoration and modernization at AFFTC.</p>		3.617	4.366	4.489

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605976F: <i>Facility Restoration and Modernization - T&E</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p><i>FY 2011 Accomplishments:</i> AFFTC will continue projects for Electronic Warfare, Range, and other T&E facilities including, but not limited to, roofing, heating & air conditioning, windows, doors, and floors, work area rezoning, transformers and power systems, fire suppression systems, seismic upgrades, and RAM replacement.</p> <p><i>FY 2012 Plans:</i> AFFTC will continue projects for Electronic Warfare, Range, and other T&E facilities including, but not limited to, roofing, heating & air conditioning, windows, doors, and floors, work area rezoning, transformers and power systems, fire suppression systems, seismic upgrades, and RAM replacement.</p> <p><i>FY 2013 Plans:</i> AFFTC will continue projects for Electronic Warfare, Range, and other T&E facilities including, but not limited to, roofing, heating & air conditioning, windows, doors, and floors, work area rezoning, transformers and power systems, fire suppression systems, seismic upgrades, and RAM replacement.</p>			
Accomplishments/Planned Programs Subtotals	46.091	44.547	42.597

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>
• RDT&E AF, PE 0604256F, Threa...: <i>Test and Evaluation Support</i>	24.805	22.420	22.812	0.000	22.812	20.081	19.076	20.450	20.523	Continuing	Continuing
• RDT&E AF, PE 0604759F, Major...: <i>Test and Evaluation Support</i>	59.469	62.206	42.236	0.000	42.236	43.044	42.899	46.198	47.688	Continuing	Continuing
• RDT&E AF, PE 0605807F, Test ...: <i>Test and Evaluation Support</i>	752.328	704.475	722.071	0.000	722.071	701.000	702.979	716.873	725.979	Continuing	Continuing
• RDT&E AF, PE 0605978F, Facil...: <i>Test and Evaluation Support</i>	27.438	27.953	27.301	0.000	27.301	23.849	28.871	24.282	24.599	Continuing	Continuing

E. Acquisition Strategy
N/A

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605976F: <i>Facility Restoration and Modernization - T&E</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.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605978F: <i>Facility Sustainment - T&E 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	27.438	27.953	27.301	-	27.301	23.849	28.871	24.282	24.599	Continuing	Continuing
6606MR: <i>Facility Sustainment - T&E Support</i>	27.438	27.953	27.301	-	27.301	23.849	28.871	24.282	24.599	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Provides resources for sustainment activities required for an inventory of Air Force Material Command (AFMC) T&E facilities. Facility sustainment includes regularly scheduled adjustments and inspections, preventative maintenance tasks, and emergency response and service calls for minor repairs. It also includes major repairs of replacement of facility components that are expected to occur periodically throughout the life cycle of facilities. This work includes roof replacement, refinishing of wall surfaces, repairing and replacement of heating and cooling systems, replacing tile and carpeting, and similar work. Other tasks associated with facilities operations (such as custodial services, grass cutting, and landscaping, waste disposal, and the provision of central utilities) are not included. These sustainment funds support the following Air Force facilities: 46th Test Group (TG) at Holloman AFB, NM, the 46th Test Wing (TW) at Eglin AFB, FL, the Arnold Engineering and Development Center (AEDC) at Arnold AFB, TN, and the Air Force Flight Test Center (AFFTC) at Edwards AFB.

Budget Activity Justification: This program element in Budget Activity 6, RDT&E Management Support, because it funds the sustainment of the institutional test infrastructure at the Air force test activities which are included in the Department of Defense (DoD) Major Range and Test Facility Base (MRTFB).

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	27.579	27.953	28.049	-	28.049
Current President's Budget	27.438	27.953	27.301	-	27.301
Total Adjustments	-0.141	-	-0.748	-	-0.748
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.141	-	-0.748	-	-0.748

Change Summary Explanation

FY11: Cong General Reductions -\$0.141 are reflected in Other Adjustment 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 6: <i>RDT&E Management Support</i>		R-1 ITEM NOMENCLATURE PE 0605978F: <i>Facility Sustainment - T&E Support</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Title: Facility sustainment at the 46 TG.</p> <p>Description: Facility sustainment at the 46 TG.</p> <p>FY 2011 Accomplishments: Sustainment of the test unique infrastructure located at the 46th TG located at Holloman AFB, NM.</p> <p>FY 2012 Plans: Sustainment of the test unique infrastructure located at the 46th TG located at Holloman AFB, NM.</p> <p>FY 2013 Plans: Sustainment of the test unique infrastructure located at the 46th TG located at Holloman AFB, NM.</p>		0.302	0.313	0.310
<p>Title: Facility sustainment at the 46 TW.</p> <p>Description: Facility sustainment at the 46 TW.</p> <p>FY 2011 Accomplishments: Continue sustainment of test unique infrastructure at the 46th TW located at Eglin AFB, FL.</p> <p>FY 2012 Plans: Continue sustainment of test unique infrastructure at the 46th TW located at Eglin AFB, FL.</p> <p>FY 2013 Plans: Continue sustainment of test unique infrastructure at the 46th TW located at Eglin AFB, FL.</p>		0.368	0.372	0.366
<p>Title: Facility sustainment at the AEDC.</p> <p>Description: Facility sustainment at the AEDC.</p> <p>FY 2011 Accomplishments: Continue sustainment of test unique infrastructure at the AEDC located at Arnold AFB, TN and the National Full-scale Aerodynamic Complex (NFAC) located at NASA's Ames Research Center, CA.</p> <p>FY 2012 Plans: Continue sustainment of test unique infrastructure at the AEDC located at Arnold AFB, TN and the National Full-scale Aerodynamic Complex (NFAC) located at NASA's Ames Research Center, CA.</p> <p>FY 2013 Plans:</p>		25.711	26.220	25.557

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605978F: <i>Facility Sustainment - T&E Support</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Continue sustainment of test unique infrastructure at the AEDC located at Arnold AFB, TN and the National Full-scale Aerodynamic Complex (NFAC) located at NASA's Ames Research Center, CA.			
Title: Facility sustainment at the AFFTC.	1.057	1.048	1.068
Description: Facility sustainment at the AFFTC.			
FY 2011 Accomplishments: Continue sustainment of test unique infrastructure in AFFTC Electronic Warfare, Range, and other T&E facilities located at Edwards AFB, CA.			
FY 2012 Plans: Continue sustainment of test unique infrastructure in AFFTC Electronic Warfare, Range, and other T&E facilities located at Edwards AFB, CA.			
FY 2013 Plans: Continue sustainment of test unique infrastructure in AFFTC Electronic Warfare, Range, and other T&E facilities located at Edwards AFB, CA.			
Accomplishments/Planned Programs Subtotals	27.438	27.953	27.301

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>
• RDT&E AF: PE 0604256F, Thre...: <i>Test and Evaluation Support</i>	24.805	22.420	22.812	0.000	22.812	20.081	19.076	20.450	20.523	Continuing	Continuing
• RDT&E AF: PE 0604759F, Major...: <i>Test and Evaluation Support</i>	59.469	62.206	42.236	0.000	42.236	43.044	42.899	46.198	47.688	Continuing	Continuing
• RDT&E AF: PE 0605807F, Test ...: <i>Test and Evaluation Support</i>	752.328	704.475	722.071	0.000	722.071	701.000	702.979	716.873	725.979	Continuing	Continuing
• RDT&E AF: PE 0605976F, Facil...: <i>Test and Evaluation Support</i>	46.091	44.547	42.597	0.000	42.597	35.046	43.815	26.899	29.067	Continuing	Continuing

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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 6: <i>RDT&E Management Support</i>	PE 0605978F: <i>Facility Sustainment - T&E Support</i>

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.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0606323F: <i>Multi-Service Systems Engineering</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	18.258	13.953	13.964	-	13.964	13.935	-	-	-	Continuing	Continuing
668101: <i>MSSE and JIAMD Capability Initiative</i>	18.258	13.953	13.964	-	13.964	13.935	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Multi-Service System Engineering Team (MSSET) serves as a joint acquisition effort to build the framework for future work towards achieving near-term Joint Track Management Capability (JTMC) and long-term Joint Integrated Air and Missile Defense (JIAMD) capabilities.

The MSSET will perform systems engineering activities in collaboration with the Missile Defense Agency (MDA), Services, Joint Staff, and OSD. The MSSET will review Service Program of Record (PoRs) and MDA systems based upon operationally validated JIAMD requirements and Prioritized Capabilities List (PCL) needs. It will then recommend engineering changes (e.g., Interface Control Documents (ICDs), common standards, and/or specifications) that can provide incremental improvements in Joint war fighting capability, as described in the Joint Requirements Oversight Council (JROC)-validated Joint IAMD operational requirements, information exchange requirements, as well as other war fighter-approved requirements. The MSSET scope will encompass the collaborative efforts to provide the war fighter the ability to effectively and efficiently utilize all available resources to counter the complete air, cruise missile, and ballistic missile threats. Activities also include studies and analysis to support both current program planning and execution, as well as future program planning.

The objective of the MSSET is to recommend incremental improvements in fielded capabilities within the construct of Service and MDA PoRs. The following list includes several, priority Family of Systems (FOS) engineering tasks. These tasks go beyond the expected scope of engineering efforts conducted by an individual Service and MDA in their POR for IAMD:

- Conduct the engineering activity to develop coordinated Joint IAMD Department of Defense (DoD) Architecture Framework (DODAF) products (e.g., System Views) while maintaining and deriving common standards.
- Develop, recommend, and document as necessary overarching JIAMD technical/performance requirements.
- Perform Joint IAMD FOS engineering and related analyses, and develop recommendations for incrementally implementing Joint IAMD capabilities.
- Develop Joint IAMD FOS engineering and Capability Validation Plans and strategies.
- Recommend updates to the Joint Staff IAMD Operational Views as necessary.
- Ensure that Joint engineering tasks are conducted in a logical sequence and in a timely manner to provide the Services and MDA the most benefit and adequate time to consider engineering recommendations derived by the MSSET.
- JPEO act in the role of Secretariat for the AMD Integration Standing-Committee to Missile Defense Executive Board (MDEB).

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0606323F: <i>Multi-Service Systems Engineering</i>
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This program is in Budget Activity 6, RDT&E Management Support, because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	18.901	13.953	13.938	-	13.938
Current President's Budget	18.258	13.953	13.964	-	13.964
Total Adjustments	-0.643	-	0.026	-	0.026
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.547	-			
• Other Adjustments	-0.096	-	0.026	-	0.026

Change Summary Explanation

FY11: Other Adjustments includes -\$0.096 Congressional General Reductions

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Title: JTMC System Engineering</p> <p>Description: Engineering Activity (Multi-Service Systems Engineering)</p> <p>FY 2011 Accomplishments: Finalized system architecture for JTMC demo, process engineering change documents with programs of record, acquire final Tactical Component Network licensing.</p> <p>FY 2012 Plans: N/A</p> <p>FY 2013 Plans: N/A</p>	1.200	-	-
<p>Title: JTMC Demo</p> <p>Description: Joint Track Manager Capability Demonstration</p> <p>FY 2011 Accomplishments:</p>	9.500	-	-

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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 6: <i>RDT&E Management Support</i>		R-1 ITEM NOMENCLATURE PE 0606323F: <i>Multi-Service Systems Engineering</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Conducted bridge demonstration between Navy's Cooperative Engagement Capability (CEC) and Army Integrated Air Missile Defense Integrated Fire Control Network (AIAMD IFCN) programs of record and develop test plans in support of demonstration.</p> <p>FY 2012 Plans: N/A</p> <p>FY 2013 Plans: N/A</p>				
<p>Title: Joint Operational Requirements</p> <p>Description: Joint Operational Requirements</p> <p>FY 2011 Accomplishments: Supported JROC-approved SIAP/JTM Capability Development Document (CDD) requirements to JIAMD community.</p> <p>FY 2012 Plans: N/A</p> <p>FY 2013 Plans: N/A</p>		1.801	-	-
<p>Title: Tactical Control Network (TCN)</p> <p>Description: TCN License Payment</p> <p>FY 2011 Accomplishments: Completed final payment on TCN software license.</p> <p>FY 2012 Plans: N/A</p> <p>FY 2013 Plans: N/A</p>		5.757	-	-
<p>Title: Requirements Development</p> <p>Description: MSSE Requirements Development</p> <p>FY 2011 Accomplishments:</p>		-	1.000	1.000

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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 6: <i>RDT&E Management Support</i>		R-1 ITEM NOMENCLATURE PE 0606323F: <i>Multi-Service Systems Engineering</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
N/A				
FY 2012 Plans: Develop, recommend, and document as necessary overarching JIAMD technical/performance requirements.				
FY 2013 Plans: Will develop, recommend, and document as necessary overarching JIAMD technical/performance requirements.				
Title: Architecture Development Description: MSSE Architecture Development		-	5.000	5.164
FY 2011 Accomplishments: N/A				
FY 2012 Plans: Conduct the engineering activity to develop coordinated Joint IAMD architecture products (e.g., System Views) while maintaining and deriving common standards. Recommend updates to the Joint Staff IAMD Operational Views as necessary.				
FY 2013 Plans: Will conduct the engineering activity to develop coordinated Joint IAMD architecture products (e.g., System Views) while maintaining and deriving common standards. Recommend updates to the Joint Staff IAMD Operational Views as necessary.				
Title: Engineering Description: MSSE Systems Engineering		-	7.953	7.800
FY 2011 Accomplishments: N/A				
FY 2012 Plans: Perform Joint IAMD FOS engineering and related analyses, and develop recommendations for incrementally implementing Joint IAMD capabilities. Develop Joint IAMD FOS engineering and Capability Validation Plans and strategies.				
FY 2013 Plans: Will perform Joint IAMD FOS engineering and related analyses, and develop recommendations for incrementally implementing Joint IAMD capabilities. Will develop Joint IAMD FOS engineering and Capability Validation Plans and strategies.				
Accomplishments/Planned Programs Subtotals		18.258	13.953	13.964

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0606323F: <i>Multi-Service Systems Engineering</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

The Multi-Service System Engineering will fund service PoRs by Military Interdepartmental Purchase Request that achieve incremental capability enhancements in accordance with the JIAMD Joint Enterprise Architecture Plan (JEAP). This is accomplished in a collaborative fashion with the Services, MDA, the JPEO IAMD, Joint Staff, and Office of Secretary of Defense. All contracts are awarded full and open.

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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0606392F: <i>Acquisition Civilian Workforce</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	-	187.096	203.766	-	203.766	207.143	210.559	215.384	221.362	Continuing	Continuing
664280: <i>SMC Civilian Pay</i>	-	187.096	203.766	-	203.766	207.143	210.559	215.384	221.362	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

FY12-17 funds from PE 0305173F, Space Test Center/Range Consolidation SMC Civilian Pay effort were transferred to this program element in order to isolate the acquisition civilian workforce civilian pay at Space and Missile Systems Center into its own project. In the FY12 PB submission, the Air Force forecast this funding would move within Project 0305173F to a new project. However, subsequent to the FY12 PB submission, the Air Force established the current Program Element, 0606392F, for more accurate tracking of the funds.

Funds requested for civilian pay within project 0305173F in FY12 PB totalled \$194.596M. Due to a Congressional Directed Reduction of \$7.5M, the final FY12 amount transferred to this new project for execution in FY12 was \$187.096M.

A. Mission Description and Budget Item Justification

The Space and Missile Systems Center (SMC) equips US and allied forces with operational space and missile systems, launch systems, and command and control infrastructure in support of global military and national security operations. SMC operates with over 6,300 people and an annual budget exceeding \$8B providing joint warfighters navigation, communication, weather, warning, force application, and space control capabilities. Through FY11, SMC acquisition workforce civilian personnel costs were funded in O&M and Section 852 accounts. Beginning in FY12--as an AF pilot initiative--SMC acquisition workforce civilian personnel funding was transferred to RDT&E, AF, and managed within PE 0305173F. The FY13 program includes funding for approximately 1,800 SMC personnel including all existing acquisition workforce civilian personnel, continued contractor to civilian conversions and Acquisition Improvement Program hiring. The funding does not include the costs for the base operating support civilian personnel supporting the Los Angeles AFB air base group. Funding SMC civilian payroll from the RDT&E appropriation provides program managers the flexibility to hire additional civilian personnel with program dollars versus additional contractors in concert with Acquisition Workforce Improvement Initiatives. Funds were requested for this effort in FY2012 under PE 0305173F.

This program is in Budget Activity 6, RDT&E Management Support because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0606392F: <i>Acquisition Civilian Workforce</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	-	-	-	-	-
Current President's Budget	-	187.096	203.766	-	203.766
Total Adjustments	-	187.096	203.766	-	203.766
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	187.096	203.766	-	203.766

Change Summary Explanation

FY12 Other Adjustment: +\$187.096M transferred from PE 0305173F.

FY13 Other Adjustment: +\$216.451M transferred from PE 0305173F; -\$12.685M due to Department reform agenda to maintain, with limited exceptions, civilian staffing at FY10 levels.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: SMC Acquisition Workforce	-	187.096	203.766
Description: Provide professional government civilian acquisition workforce in support of all Space and Missile Systems Center programs.			
FY 2012 Plans: Provide professional government civilian acquisition workforce in support of all Space and Missile Systems Center programs.			
FY 2013 Plans: Provide professional government civilian acquisition workforce in support of all Space and Missile Systems Center programs.			
Accomplishments/Planned Programs Subtotals	-	187.096	203.766

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
• 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-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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0606392F: <i>Acquisition Civilian Workforce</i>
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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.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0702806F: <i>ACQUISITION AND COMMAND 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	24.074	31.962	42.430	-	42.430	38.811	35.707	36.723	31.886	Continuing	Continuing
66ACSI: <i>Acquisition and Command Support</i>	24.074	31.962	37.512	-	37.512	33.814	30.589	31.461	31.886	Continuing	Continuing
66ACSI: <i>ACSI</i>	-	-	4.918	-	4.918	4.997	5.118	5.262	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

The program funds efforts to meet the Defense Acquisition Workforce Improvement Act (DAWIA) (Public Law 101-510, Title XII), as well as Congressional and SECDEF mandates to provide acquisition and engineering process research and cost estimating, systems integration modeling and architectural analysis, information technology infrastructure development, and technical workforce. Funding also provides the framework for Air Force business and acquisition transformation in developing capabilities-based architectures, re-engineering and enabling technologies, integrating robust systems engineering into early acquisition processes, and developing and managing a larger, more relevant technical workforce with the expertise to uniformly implement OSD and Air Force engineering guidance and policies. Leveraging the Defense Acquisition Performance Assessment, restores stability in Air Force acquisition systems by integrating major processes to reverse trends toward unpredictable program cost, schedule, and performance to facilitate quick response to urgent operational needs from across the entire spectrum of potential conflicts. Efforts include:

- Increasing technical and analytical support through training development; independent cost estimating and assessment to help analyze cost/risk growth and create defensible risk analyses for cost, schedule, and technical risks; information technology infrastructure development; and economic, statistical, and engineering analyses of acquisition programs
- Initiating performance measures for capability-based planning constructs, aligning relevant science and technology areas with operational requirements to include systems integration modeling and architecture analysis
- Increasing activities to recruit, develop, and manage the technical workforce, enhancing business and engineering processes to develop leaders to manage the acquisition and engineering transformation and interface with the academic community
- Transforming acquisition review processes to re-establish clean lines of responsibility, authority, and accountability at appropriate levels
- Exploring methods to operate a materiel solution development process that is responsive to COCOM capability needs, aligned with the OSD Joint Task Assignment Process
- Develop and implement a services-oriented acquisition business systems environment to deliver capabilities for the acquisition professional that support acquisition transformation. This effort consists of three components (1) establishing a foundational integrated environment, (2) leveraging the existing technologies and data to standardize access and use, and (3) investing in specific capabilities that enhance process transformation and are interoperable within the overall environment.
- The foundational integrated environment supports the portfolio of acquisition business systems hardware and software, and implements standards for data management and service-oriented design methodology to facilitate efficiency and interoperability by:
 - Exposing core business services currently existing in multiple tools and subsequently retiring duplicative capabilities
 - Reducing training on multiple acquisitions systems by providing all core functionality through a single common interface
 - Consolidating infrastructure to reduce hosting and infrastructure sustainment costs.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0702806F: <i>ACQUISITION AND COMMAND SUPPORT</i>
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- Existing technologies and data are leveraged to standardize on proven capabilities, and to make existing data stores more accessible and useful across the acquisition domain roles.
 - Focused investments in specific capabilities address critical gaps supporting the efficient operation of the Acquisition Domain, in areas such as:
 - Conducting program management and oversight
 - Conducting program resources management
 - Planning and executing on-time acquisition milestone readiness
 - Preparing Purchase Requisitions and Contract Orders
 - Managing contract writing
 - Adopting commercial enterprise concept of Product Lifecycle Management for the production of traceable requirements
 - Planning and execution of technology development and transition
 - Standardizing risk management
 - Managing access to scientific and technical information
 - Increasing industrial base decision-support information.
- These integrated capabilities will provide OSD and AF acquisition leadership insights needed to effectively manage a complex portfolio of acquisition programs through more timely and reliable access to authoritative acquisition data.

This program is in Budget Activity 6, RDT&E Management Support because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	24.968	31.966	28.384	-	28.384
Current President's Budget	24.074	31.962	42.430	-	42.430
Total Adjustments	-0.894	-0.004	14.046	-	14.046
• Congressional General Reductions	-	-0.004			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.699	-			
• Other Adjustments	-0.195	-	14.046	-	14.046

Change Summary Explanation

FY11: Other Adjustments includes -0.195 Congressional General Reductions

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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 6: <i>RDT&E Management Support</i>	PE 0702806F: <i>ACQUISITION AND COMMAND SUPPORT</i>

FY13: Increase to improve Acquisition IT systems, to include Electronic Acquisition Services Environment (New Start), and technical workforce development and training.

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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 6: <i>RDT&E Management Support</i>				R-1 ITEM NOMENCLATURE PE 0702806F: <i>ACQUISITION AND COMMAND SUPPORT</i>				PROJECT 66ACS1: <i>Acquisition and Command Support</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
66ACS1: <i>Acquisition and Command Support</i>	24.074	31.962	37.512	-	37.512	33.814	30.589	31.461	31.886	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The program funds efforts to meet the Defense Acquisition Workforce Improvement Act (DAWIA) (Public Law 101-510, Title XII), as well as Congressional and SECDEF mandates to provide acquisition and engineering process research and cost estimating, systems integration modeling and architectural analysis, information technology infrastructure development, and technical workforce. Funding also provides the framework for Air Force business and acquisition transformation in developing capabilities-based architectures, re-engineering and enabling technologies, integrating robust systems engineering into early acquisition processes, and developing and managing a larger, more relevant technical workforce with the expertise to uniformly implement OSD and Air Force engineering guidance and policies. Leveraging the Defense Acquisition Performance Assessment, restores stability in Air Force acquisition systems by integrating major processes to reverse trends toward unpredictable program cost, schedule, and performance to facilitate quick response to urgent operational needs from across the entire spectrum of potential conflicts. Efforts include:

- Increasing technical and analytical support through training development; independent cost estimating and assessment to help analyze cost/risk growth and create defensible risk analyses for cost, schedule, and technical risks; information technology infrastructure development; and economic, statistical, and engineering analyses of acquisition programs
- Initiating performance measures for capability-based planning constructs, aligning relevant science and technology areas with operational requirements to include systems integration modeling and architecture analysis
- Increasing activities to recruit, develop, and manage the technical workforce, enhancing business and engineering processes to develop leaders to manage the acquisition and engineering transformation and interface with the academic community
- Transforming acquisition review processes to re-establish clean lines of responsibility, authority, and accountability at appropriate levels
- Exploring methods to operate a materiel solution development process that is responsive to COCOM capability needs, aligned with the OSD Joint Task Assignment Process
- Develop and implement a services-oriented acquisition business systems environment to deliver capabilities for the acquisition professional that support acquisition transformation. This effort consists of three components (1) establishing a foundational integrated environment, (2) leveraging the existing technologies and data to standardize access and use, and (3) investing in specific capabilities that enhance process transformation and are interoperable within the overall environment.
- The foundational integrated environment supports the portfolio of acquisition business systems hardware and software, and implements standards for data management and service-oriented design methodology to facilitate efficiency and interoperability by:
 - Exposing core business services currently existing in multiple tools and subsequently retiring duplicative capabilities
 - Reducing training on multiple acquisitions systems by providing all core functionality through a single common interface
 - Consolidating infrastructure to reduce hosting and infrastructure sustainment costs.
- Existing technologies and data are leveraged to standardize on proven capabilities, and to make existing data stores more accessible and useful across the acquisition domain roles.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0702806F: <i>ACQUISITION AND COMMAND SUPPORT</i>	PROJECT 66ACS1: <i>Acquisition and Command Support</i>
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- Focused investments in specific capabilities address critical gaps supporting the efficient operation of the Acquisition Domain, in areas such as:

- Conducting program management and oversight
- Conducting program resources management
- Planning and executing on-time acquisition milestone readiness
- Preparing Purchase Requisitions and Contract Orders
- Managing contract writing
- Adopting commercial enterprise concept of Product Lifecycle Management for the production of traceable requirements
- Planning and execution of technology development and transition
- Standardizing risk management
- Managing access to scientific and technical information
- Increasing industrial base decision-support information.

These integrated capabilities will provide OSD and AF acquisition leadership insights needed to effectively manage a complex portfolio of acquisition programs through more timely and reliable access to authoritative acquisition data.

This program is in Budget Activity 6, RDT&E Management Support because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Acquisition Mandates</p> <p>Description: Supporting Congressional and SECDEF mandates. Program funding provides the framework for Air Force business and acquisition.</p> <p>FY 2011 Accomplishments: Continue acquisition/engineering process research/cost estimating.</p> <p>FY 2012 Plans: Continue acquisition/engineering process research/cost estimating</p> <p>N/A</p> <p>FY 2013 Plans: Continue acquisition/engineering process research/cost estimating</p> <p>N/A</p>	4.819	5.300	0.600
<p>Title: Performance Measurements</p>	2.960	5.869	6.100

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0702806F: <i>ACQUISITION AND COMMAND SUPPORT</i>	PROJECT 66ACS1: <i>Acquisition and Command Support</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>Description: Initiating performance measures for capability-based planning constructs</p> <p>FY 2011 Accomplishments: Continue performance measures for capability-based planning constructs, aligning relevant science and technology areas with operational requirements to include systems integration modeling and architecture analysis.</p> <p>FY 2012 Plans: Continue performance measures for capability-based planning constructs, aligning relevant science and technology areas with operational requirements to include systems integration modeling and architecture analysis.</p> <p>N/A</p> <p>FY 2013 Plans: Continue performance measures for capability-based planning constructs, aligning relevant science and technology areas with operational requirements to include systems integration modeling and architecture analysis.</p> <p>N/A</p>				
<p>Title: Technical and Analytical Support</p> <p>Description: Increasing technical and analytical support through information technology infrastructure development; economic, statistical, and engineering analyses of acquisition programs.</p> <p>FY 2011 Accomplishments: Continue development of information technology (IT) development.</p> <p>FY 2012 Plans: Continue development of information technology (IT) development.</p> <p>N/A</p> <p>FY 2013 Plans: Continue development of information technology (IT) development.</p> <p>N/A</p>		13.501	11.894	19.200
<p>Title: Recruiting and Development</p>		2.794	8.899	11.612

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0702806F: <i>ACQUISITION AND COMMAND SUPPORT</i>	PROJECT 66ACS1: <i>Acquisition and Command Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>Description: Increasing activities to recruit, develop, and manage the technical workforce</p> <p>FY 2011 Accomplishments: Continue activities to recruit, develop, and manage the technical workforce, enhancing business and engineering processes to develop leaders to manage the acquisition and engineering transformation and interface with the academic community.</p> <p>FY 2012 Plans: Continue activities to recruit, develop, and manage the technical workforce, enhancing business and engineering processes to develop leaders to manage the acquisition and engineering transformation and interface with the academic community.</p> <p>N/A</p> <p>FY 2013 Plans: Continue activities to recruit, develop, and manage the technical workforce, enhancing business and engineering processes to develop leaders to manage the acquisition and engineering transformation and interface with the academic community.</p> <p>N/A</p>			
Accomplishments/Planned Programs Subtotals	24.074	31.962	37.512

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>
• 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

D. Acquisition Strategy
N/A

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

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0702806F: <i>ACQUISITION AND COMMAND SUPPORT</i>	PROJECT 66ACSI: <i>ACSI</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
66ACSI: <i>ACSI</i>	-	-	4.918	-	4.918	4.997	5.118	5.262	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The program funds efforts to meet the Defense Acquisition Workforce Improvement Act (DAWIA) (Public Law 101-510, Title XII), as well as Congressional and SECDEF mandates to provide acquisition and engineering process research and cost estimating, systems integration modeling and architectural analysis, information technology infrastructure development, and technical workforce. Funding also provides the framework for Air Force business and acquisition transformation in developing capabilities-based architectures, re-engineering and enabling technologies, integrating robust systems engineering into early acquisition processes, and developing and managing a larger, more relevant technical workforce with the expertise to uniformly implement OSD and Air Force engineering guidance and policies. Leveraging the Defense Acquisition Performance Assessment, restores stability in Air Force acquisition systems by integrating major processes to reverse trends toward unpredictable program cost, schedule, and performance to facilitate quick response to urgent operational needs from across the entire spectrum of potential conflicts. Efforts include:

- Increasing technical and analytical support through training development; independent cost estimating and assessment to help analyze cost/risk growth and create defensible risk analyses for cost, schedule, and technical risks; information technology infrastructure development; and economic, statistical, and engineering analyses of acquisition programs
- Initiating performance measures for capability-based planning constructs, aligning relevant science and technology areas with operational requirements to include systems integration modeling and architecture analysis
- Increasing activities to recruit, develop, and manage the technical workforce, enhancing business and engineering processes to develop leaders to manage the acquisition and engineering transformation and interface with the academic community
- Transforming acquisition review processes to re-establish clean lines of responsibility, authority, and accountability at appropriate levels
- Exploring methods to operate a materiel solution development process that is responsive to COCOM capability needs, aligned with the OSD Joint Task Assignment Process
- Develop and implement a services-oriented acquisition business systems environment to deliver capabilities for the acquisition professional that support acquisition transformation. This effort consists of three components (1) establishing a foundational integrated environment, (2) leveraging the existing technologies and data to standardize access and use, and (3) investing in specific capabilities that enhance process transformation and are interoperable within the overall environment.
- The foundational integrated environment supports the portfolio of acquisition business systems hardware and software, and implements standards for data management and service-oriented design methodology to facilitate efficiency and interoperability by:
 - Exposing core business services currently existing in multiple tools and subsequently retiring duplicative capabilities
 - Reducing training on multiple acquisitions systems by providing all core functionality through a single common interface
 - Consolidating infrastructure to reduce hosting and infrastructure sustainment costs.
- Existing technologies and data are leveraged to standardize on proven capabilities, and to make existing data stores more accessible and useful across the acquisition domain roles.
- Focused investments in specific capabilities address critical gaps supporting the efficient operation of the Acquisition Domain, in areas such as:

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0702806F: <i>ACQUISITION AND COMMAND SUPPORT</i>	PROJECT 66ACSI: <i>ACSI</i>
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- Conducting program management and oversight
 - Conducting program resources management
 - Planning and executing on-time acquisition milestone readiness
 - Preparing Purchase Requisitions and Contract Orders
 - Managing contract writing
 - Adopting commercial enterprise concept of Product Lifecycle Management for the production of traceable requirements
 - Planning and execution of technology development and transition
 - Standardizing risk management
 - Managing access to scientific and technical information
 - Increasing industrial base decision-support information.
- These integrated capabilities will provide OSD and AF acquisition leadership insights needed to effectively manage a complex portfolio of acquisition programs through more timely and reliable access to authoritative acquisition data.

This program is in Budget Activity 6, RDT&E Management Support because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Acquisition Mandates	-	-	4.918
Description: Support Congressional and SECDEF mandates. Program funding provides the framework for Air Force business and acquisition.			
FY 2013 Plans: Continue acquisition/engineering process research/cost estimating.			
Accomplishments/Planned Programs Subtotals	-	-	4.918

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	Continuing

D. Acquisition Strategy
N/A

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0702806F: <i>ACQUISITION AND COMMAND SUPPORT</i>	PROJECT 66ACSI: <i>ACSI</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-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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0804731F: <i>GENERAL SKILL 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	1.491	1.510	1.294	-	1.294	1.006	1.028	1.063	1.443	Continuing	Continuing
665297: <i>Technical Training Information Systems</i>	1.491	1.510	1.294	-	1.294	1.006	1.028	1.063	1.443	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The DoD Cyber Crime Center (DC3) is a service organization that provides on demand state-of-the-art electronic forensic services and cyber investigative and operational support to the Department of Defense (DoD). DC3 also provides leadership as a DoD center of excellence in processing and analyzing digital evidence. It provides professional special investigative services for the protection of DoD people, investigations, operations, material and critical infrastructures worldwide. The DC3's objective is to support and address the proliferation of cyber crimes within or directed at the DoD. Within DC3, the DoD Cyber Crime Institute (DCCI) develops the foundation for accepted standards and practices based on valid research, science, and law with innovative ideas and methods. It serves as a resource for sound research to produce unique tools and procedures for the DoD law enforcement, counter terrorism, counterintelligence, force protection, information assurance, information operations and war fighting communities. It strives to develop national electronic forensics standards, cyber investigative tools and techniques, effective plans, policies and procedures and implement a knowledge management system. It provides the DoD community with analytical services and produces relevant intelligence reports, criminal intelligence reports and cyber investigation trend analyses. It focuses on new issues facing the DoD critical infrastructure protection efforts and those facing the cyber investigative discipline. DC3 must continue to expand its capabilities and continue to develop effective plans, policies, and procedures for addressing cybercrime and electronic forensic needs in DoD both now and in the future. The primary goal is to ensure the DoD has the ability to successfully perform its mission of electronic media processing and analysis in the future. Without funding, critical projects will be terminated. The DoD's ability to process digital evidence in a future environment of increasing case loads that have a large amount of data that is also hidden by sophisticated techniques will be greatly degraded.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	1.544	1.510	1.292	-	1.292
Current President's Budget	1.491	1.510	1.294	-	1.294
Total Adjustments	-0.053	-	0.002	-	0.002
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.045	-			
• Other Adjustments	-0.008	-	0.002	-	0.002

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0804731F: <i>GENERAL SKILL TRAINING</i>
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Change Summary Explanation

FY11: adjustment for Cong General Reductions -0.008 is shown in Other Adjustments Row.

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

	FY 2011	FY 2012	FY 2013
Title: Cyber Crime Description: Develop plans/policies/procedures for cybercrime issues FY 2011 Accomplishments: Continue conducting electronic forensics and cyber investigations (Digital evidence processing, special investigation services, etc). FY 2012 Plans: Continue conducting electronic forensics and cyber investigations (Digital evidence processing, special investigation services, etc). FY 2013 Plans: Continue conducting electronic forensics and cyber investigations (Digital evidence processing, special investigation services, etc).	1.491	1.510	1.294
Accomplishments/Planned Programs Subtotals	1.491	1.510	1.294

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	0.000	Continuing	Continuing

E. Acquisition Strategy

Not applicable

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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0909980F: <i>JUDGMENT FUND REIMBURSEMENT</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	0.371	-	-	-	-	-	-	-	-	Continuing	Continuing
660000: <i>Industrial Preparedness</i>	0.371	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Judgment Fund Reimbursement

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	-	-	-	-	-
Current President's Budget	0.371	-	-	-	-
Total Adjustments	0.371	-	-	-	-
• Congressional General Reductions	-	-	-	-	-
• Congressional Directed Reductions	-	-	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	-	-	-	-	-
• Congressional Directed Transfers	-	-	-	-	-
• Reprogrammings	0.371	-	-	-	-
• SBIR/STTR Transfer	-	-	-	-	-
• Other Adjustments	-	-	-	-	-

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

	FY 2011	FY 2012	FY 2013
Title: Judgement Fund Reimbursement	0.371	-	-
Description: Judgement fund reimbursement			
FY 2011 Accomplishments: Judgement fund reimbursement			
Accomplishments/Planned Programs Subtotals	0.371	-	-

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0909980F: <i>JUDGMENT FUND REIMBURSEMENT</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

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.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0909999F: <i>Financing for Cancelled Account Adjustments</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	1.468	-	-	-	-	-	-	-	-	Continuing	Continuing
664277: <i>Financing for Canceled Account Adj</i>	1.468	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Funds upward adjustments for cancelled year claims.

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	-	-	-	-	-
Current President's Budget	1.468	-	-	-	-
Total Adjustments	1.468	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.468	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-			

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Cancelled Year Funds Claims	1.468	-	-
Description: Cancelled Year Funds Claims			
FY 2011 Accomplishments: Cancelled year funds claims.			
Accomplishments/Planned Programs Subtotals	1.468	-	-

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0909999F: <i>Financing for Cancelled Account Adjustments</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

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.

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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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 1001004F: <i>International 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	3.636	3.798	3.851	-	3.851	3.902	3.981	4.105	4.160	Continuing	Continuing
664645: <i>International Cooperative Research & Development</i>	3.636	3.798	3.851	-	3.851	3.902	3.981	4.105	4.160	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 this program is to establish, sustain, and expand mutually beneficial international partnerships through the implementation of international cooperative research, development, test, evaluation, and acquisition agreements thereby supporting the core competencies of the USAF and DoD and meeting mission requirements. These International Agreements (IAs) will significantly improve U.S. and allied conventional defense capabilities by leveraging our Allies' best defense technologies, eliminating costly duplication of research and development (R&D) efforts, accelerating the availability of defense systems, and promoting U.S. and allied interoperability or commonality.

The USAF is party to multiple bilateral and multilateral IAs to solve common US and allied military scientific and technological problems, develop materiel solutions, harmonize coalition requirements and build interoperability with our coalition partners. This program element funds the USAF to identify, develop, process, negotiate, implement, and manage IAs in compliance with statutory provisions, legal authorities, fiscal constraints, technology transfer controls, intellectual property rights, third party transfer provisions, equitability criteria, industrial base factors, and political-military interests. Included in this budget are international technology assessment teams; air, space, and cyber international armaments cooperation (IAC); specialized working groups; Air Senior National Representative activities; IAC program and project reviews; overseas R&D liaison offices; bilateral and multilateral staff talks; USAF displays at International Trade Shows to promote cooperation and interoperability activities; Engineering and Scientist Exchange Program (ESEP); and Administrative and Professional Exchange Program (APEP).

This program is in Budget Activity 6, Management and Support, because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation. These funds are not to be used for civilian salaries or the construction of permanent facilities.

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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	3.764	3.798	3.844	-	3.844
Current President's Budget	3.636	3.798	3.851	-	3.851
Total Adjustments	-0.128	-	0.007	-	0.007
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.109	-			
• Other Adjustments	-0.019	-	0.007	-	0.007

Change Summary Explanation

FY11: Adjustments (Cong General Reductions -\$0.019) shown in Other Adjustments Row.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: Engineer and Scientist Exchange Program/Administrative and Professional Exchange Program (ESEP/APEP)</p> <p>Description: Funds the USAF execution and management oversight of ESEP and APEP agreements. Funds eight to ten field level military and civilian personnel from AFMC Facilities, Product Centers, Test Centers, Logistic Centers, and the Academy for tours at selected European and Asian government laboratories or other installations.</p> <p>FY 2011 Accomplishments: Continuation of execution and management oversight of ESEP and APEP agreements. Funds eight to ten field level military and civilian personnel from AFMC Facilities, Product Centers, Test Centers, Logistic Centers, and the Academy for tours at selected European and Asian government laboratories or other installations.</p> <p>FY 2012 Plans: Continuation of execution and management oversight of ESEP and APEP agreements. Funds eight to ten field level military and civilian personnel from AFMC Facilities, Product Centers, Test Centers, Logistic Centers, and the Academy for tours at selected European and Asian government laboratories or other installations.</p> <p>FY 2013 Base Plans:</p>	0.300	0.300	0.300	-	0.300

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Continuation of execution and management oversight of ESEP and APEP agreements. Funds eight to ten field level military and civilian personnel from AFMC Facilities, Product Centers, Test Centers, Logistic Centers, and the Academy for tours at selected European and Asian government laboratories or other installations. FY 2013 OCO Plans: N/A					
Title: International Research and Development Activities Description: Funds management support and oversight of International Affairs Armaments Cooperation Division (SAF/IAPQ) objectives and goals. Funds USAF participation in NATO forums to promote harmonization and interoperability between the U.S. and NATO through IAs. Funds USAF support and participation in OSD bi-lateral IAC forums. Funds technical assessments and discussions that support USAF and DoD objectives and goals. Funds USAF efforts to enhance existing relationships, technology development activities and interoperability issues with: Australia, Canada, Denmark, France, Germany, Israel, Italy, Japan, NATO, Netherlands, Norway, South Korea, Singapore, Spain, Sweden, and UK. Funds USAF efforts to strengthen/build IAC relationships with: Brazil, Poland, Chile, Czech Republic, India, South Africa and Turkey. Funds USAF overseas R&D liaison office. FY 2011 Accomplishments: Continuation of management support and oversight of International Affairs Armaments Cooperation Division (SAF/IAPQ) objectives and goals. Funds USAF participation in NATO forums to promote harmonization and interoperability between the U.S. and NATO through IAs. Funds USAF support and participation in OSD bi-lateral IAC forums. Funds technical assessments and discussions that support USAF and DoD objectives and goals. Funds USAF efforts to enhance existing relationships, technology development activities and interoperability issues with: Australia, Canada, Denmark, France, Germany, Israel, Italy, Japan, NATO, Netherlands, Norway, South Korea, Singapore, Spain, Sweden, and UK. Funds USAF efforts to strengthen/build IAC relationships with: Brazil, Poland, Chile, Czech Republic, India, South Africa and Turkey. Funds USAF overseas R&D liaison office. FY 2012 Plans: Continuation of management support and oversight of International Affairs Armaments Cooperation Division (SAF/IAPQ) objectives and goals. Funds USAF participation in NATO forums to promote harmonization and interoperability between the U.S. and NATO through IAs. Funds USAF support and participation in OSD bi-lateral IAC forums. Funds technical assessments and discussions that support USAF and DoD objectives	2.186	2.251	1.911	-	1.911

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>and goals. Funds USAF efforts to enhance existing relationships, technology development activities and interoperability issues with: Australia, Canada, Denmark, France, Germany, Israel, Italy, Japan, NATO, Netherlands, Norway, South Korea, Singapore, Spain, Sweden, and UK. Funds USAF efforts to strengthen/build IAC relationships with: Brazil, Poland, Chile, Czech Republic, India, South Africa and Turkey. Funds USAF overseas R&D liaison office.</p> <p>FY 2013 Base Plans: Continuation of management support and oversight of International Affairs Armaments Cooperation Division (SAF/IAPQ) objectives and goals. Funds USAF participation in NATO forums to promote harmonization and interoperability between the U.S. and NATO through IAs. Funds USAF support and participation in OSD bi-lateral IAC forums. Funds technical assessments and discussions that support USAF and DoD objectives and goals. Funds USAF efforts to enhance existing relationships, technology development activities and interoperability issues with: Australia, Canada, Denmark, France, Germany, Israel, Italy, Japan, NATO, Netherlands, Norway, South Korea, Singapore, Spain, Sweden, and UK. Funds USAF efforts to strengthen/build IAC relationships with: Brazil, Poland, Chile, Czech Republic, India, South Africa and Turkey. Funds USAF overseas R&D liaison office.</p> <p>FY 2013 OCO Plans: N/A</p>					
<p>Title: Armaments Cooperation</p> <p>Description: Funds the USAF's ability to identify, develop, process, negotiate, implement, and manage the increasing number bilateral and multilateral IAs that meet the mission, objectives, and goals of the USAF and DoD. Work will continue on IAs developed, but not signed, during FY10 in the areas of: materials and composites, human effectiveness, robotics, nanotechnology, coalition information sharing, biometrics, virtual munitions design, hypersonics, alternative energy, IED defeat, WMD defeat, distributed mission operations, lasers, unmanned air systems, C4ISR sustainment, development, capabilities, interoperability and system level programs.</p> <p>FY 2011 Accomplishments: Continuation of funding for the USAF's ability to identify, develop, process, negotiate, implement, and manage the increasing number bilateral and multilateral IAs that meet the mission, objectives, and goals of the USAF and DoD. Work will continue on IAs developed, but not signed, during FY10 in the areas of: materials and composites, human effectiveness, robotics, nanotechnology, coalition information sharing, biometrics, virtual</p>	0.750	0.800	0.750	-	0.750

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
munitions design, hypersonics, alternative energy, IED defeat, WMD defeat, distributed mission operations, lasers, unmanned air systems, C4ISR sustainment, development, capabilities, interoperability and system level programs. FY 2012 Plans: Continuation of funding for the USAF's ability to identify, develop, process, negotiate, implement, and manage the increasing number bilateral and multilateral IAs that meet the mission, objectives, and goals of the USAF and DoD. Work will continue on IAs developed, but not signed, during FY10 in the areas of: materials and composites, human effectiveness, robotics, nanotechnology, coalition information sharing, biometrics, virtual munitions design, hypersonics, alternative energy, IED defeat, WMD defeat, distributed mission operations, lasers, unmanned air systems, C4ISR sustainment, development, capabilities, interoperability and system level programs. FY 2013 Base Plans: Continuation of funding for the USAF's ability to develop and negotiate the increasing number proposals for ICRD&A bi-lateral and multi-lateral Agreements with key allies. Work will continue on agreements developed, but not signed, during FY10 in the areas of: materials and composites, human effectiveness, robotics, nanotechnology, coalition information sharing, biometrics, virtual munitions design, hypersonics, alternative energy, IED defeat, WMD defeat, distributed mission operations, lasers, unmanned air systems, reconnaissance and surveillance, command and control, capabilities, interoperability and system level programs. FY 2013 OCO Plans: N/A					
Title: Air Force Material Command (AFMC) Description: Funds AFMC's ability to support IAC R&D efforts within the Air Force Research Laboratories (AFRL) and other organizations within AFMC. Funds technical assessments and discussions that support the development of IAs. FY 2011 Accomplishments: Continuation of funds AFMC's ability to support IAC R&D efforts within the Air Force Research Laboratories (AFRL) and other organizations within AFMC. Funds technical assessments and discussions that support the development of IAs. FY 2012 Plans:	0.200	0.200	0.150	-	0.150

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Continuation of funds AFMC's ability to support IAC R&D efforts within the Air Force Research Laboratories (AFRL) and other organizations within AFMC. Funds technical assessments and discussions that support the development of IAs. FY 2013 Base Plans: Continuation of funds AFMC's ability to support IAC R&D efforts within the Air Force Research Laboratories (AFRL) and other organizations within AFMC. Funds technical assessments and discussions that support the development of IAs. FY 2013 OCO Plans: N/A					
Title: International Space Cooperation Description: Funds research and development activities to provide a foundation upon which to develop operational strategies, concepts of operations, tactics techniques and procedures, and technologies and prototype systems with our allies, which in turn provides foundation for long-term, full spectrum operational cooperation. Space cooperation with our allies enables the USAF access to critical geography for distributed ground systems, and remote test ranges for test and evaluation of space capabilities in electronically challenged environments, as well as joint development and acquisition of space systems. FY 2011 Accomplishments: Continuation of funds to support research and development activities to provide a foundation upon which to develop operational strategies, concepts of operations, tactics techniques and procedures, and technologies and prototype systems with our allies, which in turn provides foundation for long-term, full spectrum operational cooperation. Space cooperation with our allies enables the USAF access to critical geography for distributed ground systems, and remote test ranges for test and evaluation of space capabilities in electronically challenged environments, as well as joint development and acquisition of space systems. FY 2012 Plans: Continuation of funds to support research and development activities to provide a foundation upon which to develop operational strategies, concepts of operations, tactics techniques and procedures, and technologies and prototype systems with our allies, which in turn provides foundation for long-term, full spectrum operational cooperation. Space cooperation with our allies enables the USAF access to critical geography for distributed	0.150	0.187	0.190	-	0.190

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
ground systems, and remote test ranges for test and evaluation of space capabilities in electronically challenged environments, as well as joint development and acquisition of space systems. FY 2013 Base Plans: Continuation of funds to support research and development activities to provide a foundation upon which to develop operational strategies, concepts of operations, tactics techniques and procedures, and technologies and prototype systems with our allies, which in turn provides foundation for long-term, full spectrum operational cooperation. Space cooperation with our allies enables the USAF access to critical geography for distributed ground systems, and remote test ranges for test and evaluation of space capabilities in electronically challenged environments, as well as joint development and acquisition of space systems. FY 2013 OCO Plans: N/A					
Title: Cyberspace Cooperation Description: Funds establishing cooperative relationships with allies in cyberspace missions to ensure interoperability, sharing of information on threats, and developing new capabilities to defeat threats to our critical information systems. Supports integration of air, space, and cyberspace capabilities to create global effects. Cyberspace requires significant research and development efforts and responsiveness to avoid technological surprise. FY 2011 Accomplishments: Funds establishing cooperative relationships with allies in cyberspace missions to ensure interoperability, sharing of information on threats, and developing new capabilities to defeat threats to our critical information systems. Supports integration of air, space, and cyberspace capabilities to create global effects. Cyberspace requires significant research and development efforts and responsiveness to avoid technological surprise. FY 2012 Plans: Continuation of funds establishing cooperative relationships with allies in cyberspace missions to ensure interoperability, sharing of information on threats, and developing new capabilities to defeat threats to our critical information systems. Supports integration of air, space, and cyberspace capabilities to create global effects. Cyberspace requires significant research and development efforts and responsiveness to avoid technological surprise. FY 2013 Base Plans:	0.050	0.060	0.550	-	0.550

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Continuation of funds establishing cooperative relationships with allies in cyberspace missions to ensure interoperability, sharing of information on threats, and developing new capabilities to defeat threats to our critical information systems. Supports integration of air, space, and cyberspace capabilities to create global effects. Cyberspace requires significant research and development efforts and responsiveness to avoid technological surprise. <i>FY 2013 OCO Plans:</i> N/A					
Accomplishments/Planned Programs Subtotals	3.636	3.798	3.851	-	3.851

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	0.000	0.000

E. Acquisition Strategy
This program element is the only source of USAF funds to identify, develop, process, negotiate, implement, and manage IA opportunities for international armaments cooperation to (a) deploy and support common or interoperable equipment with our allies; (b) leverage USAF resources with our allies through cost sharing and economies of scale; and (c) exploit the best US and allied technologies for equipping coalition forces and supporting interoperability. We obtain these benefits only after IAC opportunities are identified, explored, assessed, developed and IAs are negotiated and concluded. This PE provides funds to execute up-front IAC responsibilities, realize cooperative opportunities, assess allied technologies and generate sound, cost-effective cooperative programs between the USAF and our international partners. Once these initiatives, programs, and projects are concluded IAs they are transferred to the appropriate technology or systems program office and are then funded by the program office.

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.