

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force										DATE: April 2013		
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)							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	6,371.245	385.013	229.171	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6,985.429
644050: Advanced MILSATCOM	6,371.245	276.675	175.578	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6,823.498
64A030: Evolved AEHF MILSATCOM	0.000	108.338	53.593	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	161.931
MDAP/MAIS Code(s): 261												
[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
^{##} The FY 2014 OCO Request will be submitted at a later date												
Note												
In FY2014, Project 644050, Advanced MILSATCOM, and Project 64A030, Evolved AEHF MILSATCOM, efforts transferred to PE 0605431F, Advanced EHF MILSATCOM (Space), Project 657103, Advanced MILSATCOM, and Project 657104, Evolved AEHF MILSATCOM, in order to transition to Budget Activity 5.												
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 completed on-orbit test and transitioned to operations in March 2012. SV-2 launched on 4 May 2012, successfully completed on-orbit testing in October 2012, and is under operational control as of 7 Nov 2012.												
With SV-1 and SV-2 launched, 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. 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 (as described in Advanced EHF MILSATCOM P-40 Exhibit).												
In addition, the ESP concept includes use of RDT&E funding for a MILSATCOM Space Modernization Initiative (SMI) 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, technology maturation, new components' qualification, subsystem and component prototyping, architecture and system concept studies (to include hosted payloads), and pathfinder efforts to address												

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force				DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE				
3600: Research, Development, Test & Evaluation, Air Force		PE 0603430F: Advanced EHF MILSATCOM (SPACE)				
BA 4: Advanced Component Development & Prototypes (ACD&P)						
MILSATCOM capability gaps identified in the Joint Space Communications Layer (JSCL) Initial Capabilities Document (ICD) and the "Resilient Basis for SATCOM in Joint Operations" study.						
In FY14, due to a change in Budget Activity from 4 to 5, funds transfer to PE 0605431F, Projects 657103 and 657104.						
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 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget		397.446	229.171	153.857	-	153.857
Current President's Budget		385.013	229.171	0.000	-	0.000
Total Adjustments		-12.433	0.000	-153.857	-	-153.857
• Congressional General Reductions		-	0.000			
• Congressional Directed Reductions		-	0.000			
• Congressional Rescissions		0.000	0.000			
• Congressional Adds		-	0.000			
• Congressional Directed Transfers		-	0.000			
• Reprogrammings		-5.769	0.000			
• SBIR/STTR Transfer		-6.664	0.000			
• Other Adjustments		0.000	0.000	-153.857	-	-153.857
Change Summary Explanation						
FY12: Reprogrammings row: -\$5.769M for higher Department priorities						
FY12: Small Business Innovation Research (SBIR) row: -\$6.664M						
FY14: Other Adjustment row: -\$153.857M, due to change in Budget Activity from 4 to 5, funds have been transferred to PE 0605431F, Project 657103 and Project 657104.						

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force									DATE: April 2013			
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			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
644050: Advanced MILSATCOM	6,371.245	276.675	175.578	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6,823.498
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
Note												
In FY2014, Project 644050, Advanced MILSATCOM, efforts transferred to PE 0605431F, Advanced EHF MILSATCOM (Space), Project 657103, Advanced MILSATCOM, in order to transition to Budget Activity 5.												
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 completed on-orbit test and transitioned to operations in March 2012. SV-2 launched on 4 May 2012, successfully completed on-orbit testing in October 2012, and is under operational control as of 7 Nov 2012.												
In FY14, due to a change in Budget Activity from 4 to 5, funds transfer to PE 0605431F, Project 657103.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2012	FY 2013	FY 2014	
Title: AEHF SVs 1-2, MCS									164.328	24.032	0.000	
Description: Develop and acquire AEHF MILSATCOM satellites, mission control segment, and cryptography												
FY 2012 Accomplishments: In FY 2012, completed SV-1 on-orbit test. Completed SV-2 launch readiness, launch, and initiated on-orbit test. Continued program office support and related activities, and conducted studies/analyses, as required.												
FY 2013 Plans:												

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE: April 2013		
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 2012	FY 2013	FY 2014
In FY 2013, continue SV-2 on-orbit test. Continue program office support and related activities, and conduct studies/analyses, as required. FY 2014 Plans: In FY14, funds transfer to PE 0605431F, Project 657103.				
Title: AEHF Interim Contractor Support (ICS) Description: Funds Interim Contractor Support for AEHF satellites, Mission Control Segment (MCS), Cryptography, AEHF Calibration Facility (ACF), and Interim Command and Control (IC2) antenna until Initial Operational Capability declaration FY 2012 Accomplishments: In FY 2012, conducted ICS for SV-1 on-orbit support, MCS sustainment, and AEHF Key Management Architecture (KMA) sustainment. Conducted ICS for the ACF and the IC2 antenna. FY 2013 Plans: In FY 2013, conduct ICS for SV-1 and SV-2 on-orbit support, MCS sustainment, including Increment 7 delivery, and AEHF KMA sustainment. Conduct Multiservice Operational Test and Evaluation. Conduct ICS for the ACF and the IC2 antenna. FY 2014 Plans: In FY14, funds transfer to PE 0605431F, Project 657103.		112.347	136.546	0.000
Title: AEHF Key Management Infrastructure (KMI) transition Description: Transition of the AEHF Key Management Architecture (KMA) from Electronic Key Management System (EKMS) to KMI FY 2012 Accomplishments: Not applicable. FY 2013 Plans: Funds preliminary design for transition of AEHF Crypto KMA from EKMS to KMI. FY 2014 Plans: Not applicable.		0.000	15.000	0.000
Accomplishments/Planned Programs Subtotals		276.675	175.578	0.000

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force									DATE: April 2013		
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				
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• RDT&E: BA05: PE 0605431F: Advanced EHF MILSATCOM (Space)	0.000	0.000	183.372		183.372	136.067	64.600	21.700	0.000	0.000	405.739
• MPAF: BA05: Line Item # ADV555: Advanced EHF	551.458	557.205	379.586		379.586	302.175	594.362	973.711	852.740	3,399.700	7,610.937
• RDT&E: BA04: PE 0603854F: Wideband Global SATCOM RDT&E (Space)	12.077	12.027	0.000		0.000	0.000	0.000	0.000	0.000	0.000	24.719
Remarks											
Wideband Global SATCOM RDT&E (Space) funding is within the Command and Control System - Consolidated (CCS-C) project.											
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.											

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
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					
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Cryptographic Development	MIPR	NSA:Camden, NJ	252.730	0.000		0.000		0.000		-		0.000	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	0.000		-		0.000	0.000	32.022	
AEHF Key Management Infrastructure transition	Various	Not specified.:	0.000	0.000		15.000	May 2013	0.000		-		0.000	0.000	15.000	
Terminals Engineering	C/CPFF	JTEO:San Diego, CA	15.491	0.000		0.000		0.000		-		0.000	0.000	15.491	15.491
MILSATCOM Technology Validation SE&I	SS/CPAF	MIT/LL:Lexington, MA	21.538	0.000		0.000		0.000		-		0.000	0.000	21.538	21.538
AEHF Capabilities Insertion Program	Various	Various:Various,	39.700	0.000		0.000		0.000		-		0.000	0.000	39.700	
Technical Support	SS/CPAF	MITRE:Bedford, MA	0.779	0.000		0.000		0.000		-		0.000	0.000	0.779	0.779
Processing Subsystem Engineering Model	Various	Hughes:El Segundo, CA	67.175	0.000		0.000		0.000		-		0.000	0.000	67.175	67.175
Processing Subsystem Engineering Model (2)	Various	TRW:Redondo Beach, CA	62.083	0.000		0.000		0.000		-		0.000	0.000	62.083	62.083
Technical Projects	Various	Various:Various,	66.659	0.000		0.000		0.000		-		0.000	0.000	66.659	66.659
Pre-Engineering Manufacturing and Development	Various	Lockheed Martin:Sunnyvale, CA	225.011	0.000		0.000		0.000		-		0.000	0.000	225.011	225.011
System Development and Demonstration	Various	Lockheed Martin:Sunnyvale, CA	4,887.647	129.233	Dec 2011	0.000		0.000		-		0.000	0.000	5,016.880	4,979.010
AEHF Interim Contractor Support	SS/CPIF	Lockheed Martin:Sunnyvale, CA	143.997	73.815	Dec 2011	115.000	Dec 2012	0.000		-		0.000	0.000	332.812	
GFP	Various	Various:Various,	35.856	27.165	Dec 2011	10.604	Dec 2012	0.000		-		0.000	0.000	73.625	
Command and Control System - Consolidated	SS/CPAF	Kratos:San Diego, CA	0.000	2.342	Aug 2012	0.000		0.000		-		0.000	0.000	2.342	
Radiation Hardened parts developers	Various	Various:Various	117.480	0.000		0.000		0.000		-		0.000	0.000	117.480	
Subtotal			5,945.859	243.922		151.546		0.000		0.000		0.000	0.000	6,341.327	

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY								R-1 ITEM NOMENCLATURE				PROJECT			
3600: Research, Development, Test & Evaluation, Air Force BA 4: Advanced Component Development & Prototypes (ACD&P)								PE 0603430F: Advanced EHF MILSATCOM (SPACE)				644050: Advanced MILSATCOM			
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks															
FY14 funds transferred to PE 0605431F, Project 657103.															
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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		0.000		0.000		-		0.000	0.000	123.696	123.696
AEHF Systems Engineering & Integration (SE&I)	C/FFP	Linquest:Los Angeles, CA	68.131	9.923	Dec 2011	0.000		0.000		-		0.000	0.000	78.054	
AEHF SE&I	C/TBD	TBD:TBD,	0.000	0.000		5.421	Apr 2013	0.000		-		0.000	0.000	5.421	
Advanced Concepts Directorate technology needs forecasting FFRDC (PMA)	Various	Various:Various,	9.698	0.000		0.000		0.000		-		0.000	0.000	9.698	
Advanced Concepts Directorate technology needs forecasting Program Office Support (PMA)	Various	Various:Various,	13.727	0.000		0.000		0.000		-		0.000	0.000	13.727	
Subtotal			215.252	9.923		5.421		0.000		0.000		0.000	0.000	230.596	
Remarks															
FY14 funds transferred to PE 0605431F, Project 657103.															
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	0.000		-		0.000	0.000	30.219	30.219

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
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>			
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			22.814	4.838		2.567		0.000		0.000		0.000	0.000	30.219	30.219
Remarks FY14 funds transferred to PE 0605431F, Project 657103.															
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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,	118.072	13.494	Dec 2011	6.400	Dec 2012	0.000		-		0.000	0.000	137.966	
AEHF Program Office Support (PMA)	Various	Various:Various,	69.248	4.498	Dec 2011	5.644	Dec 2012	0.000		-		0.000	0.000	79.390	
Business Operating Support Services & Acquisition Mission Support (PMA)	Various	Various:Various,	0.000	0.000		4.000	Dec 2012	0.000		-		0.000	0.000	4.000	4.000
Subtotal			187.320	17.992		16.044		0.000		0.000		0.000	0.000	221.356	
Remarks FY14 funds transferred to PE 0605431F, Project 657103.															
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			6,371.245	276.675		175.578		0.000		0.000		0.000	0.000	6,823.498	
Remarks FY14 funds transferred to PE 0605431F, Project 657103.															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

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

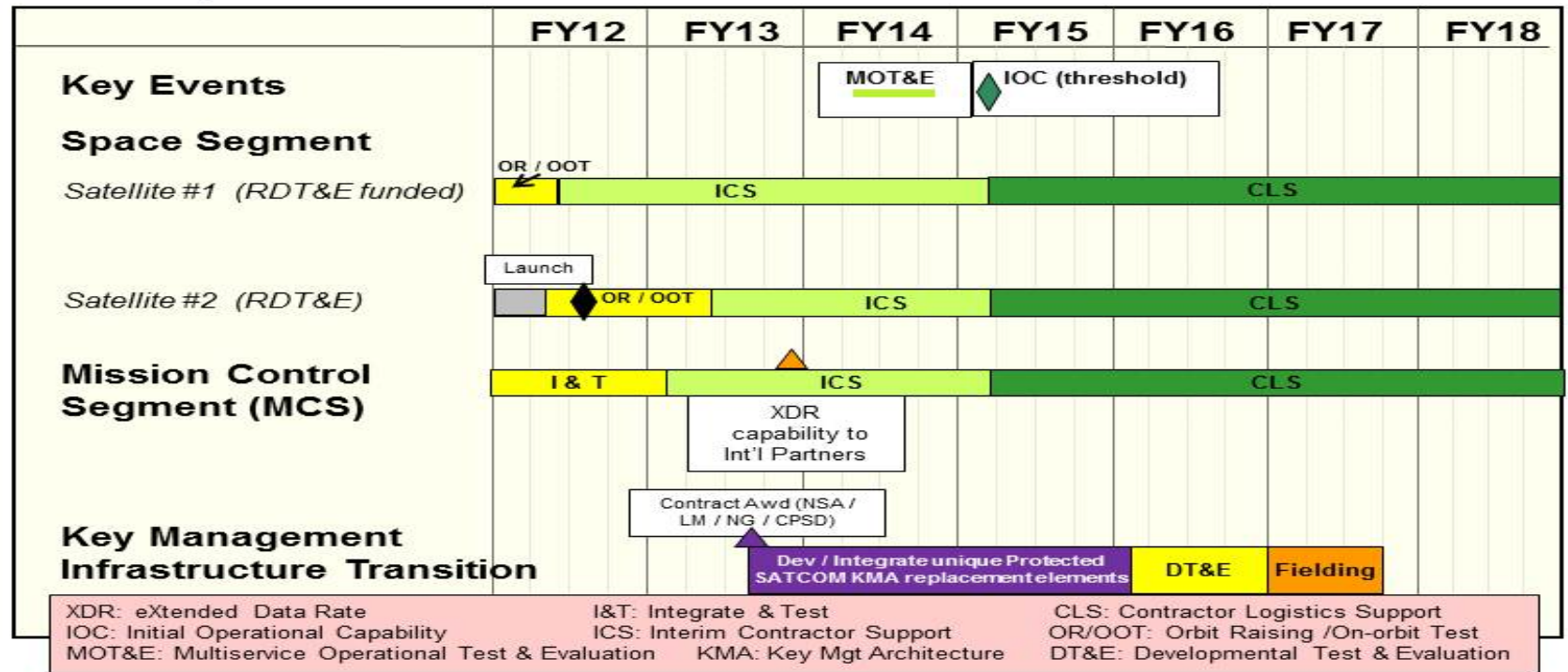
R-1 ITEM NOMENCLATURE

PE 0603430F: Advanced EHF MILSATCOM (SPACE)

PROJECT

644050: Advanced MILSATCOM

These efforts are funded in Project 644050 through FY13.
Beginning FY14 these efforts are funded in Project 657103.



△◇ Key events

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force			DATE: April 2013
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
Launch second AEHF satellite	3	2012	3	2012
First delivery of Ground Segment Software Increment 7 (eXtended Data Rate capability to International Partners)	4	2013	4	2013

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force									DATE: April 2013			
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 64A030: Evolved AEHF MILSATCOM			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
64A030: Evolved AEHF MILSATCOM	0.000	108.338	53.593	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	161.931
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
Note												
In FY2014, Project 64A030, Evolved AEHF MILSATCOM, efforts transferred to PE 0605431F, Advanced EHF MILSATCOM (Space), Project 657104, Evolved AEHF MILSATCOM, in order to transition to Budget Activity 5.												
A. Mission Description and Budget Item Justification												
This project funds a MILSATCOM Space Modernization Initiative (SMI) 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 is a near-term investment plan to invest in more affordable alternatives to evolve current MILSATCOM technologies, concepts, and capabilities 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 architectures. In addition, SMI begins acquisition capabilities supporting concept definitions and demos for protected tactical communications services, anti-jam enhanced theater antennas, and increased military wideband coverage and capacity.												
In FY14, due to a change in Budget Activity from 4 to 5, funds transfer to PE 0605431F, Project 657104.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2012	FY 2013	FY 2014	
Title: AEHF SV-6 Flight Crypto & Future AEHF Parts Obsolescence Mitigation									0.000	19.479	0.000	
Description: AEHF SV-6 flight cryptographic equipment redesign effort and future AEHF parts obsolescence mitigation effort												
FY 2012 Accomplishments: Not applicable.												
FY 2013 Plans: Funds efforts such as SV-6 flight crypto redevelopment and mitigation of identified parts obsolescence that may affect the future stability of the AEHF product line, particularly the payload.												
FY 2014 Plans:												

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE: April 2013		
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 2012	FY 2013	FY 2014
In FY2014, Project 64A030 funds transfer to PE 0605431F, Project 65104.				
Title: AEHF Capabilities Insertion Program (CIP) 1a Description: AEHF capacity improvement: Software development/implementation increases capacity by 10% and operational flexibility to constellation FY 2012 Accomplishments: Conducted AEHF CIP Phase B extension risk reduction for CIP 1a software enhancement. FY 2013 Plans: Release sole source AEHF CIP 1a Request for Proposal 3QFY13, contract award 4QFY13. FY 2014 Plans: In FY2014, Project 64A030 funds transfer to PE 0605431F, Project 657104.		10.000	1.738	0.000
Title: Radiation Hardened parts Description: Qualification and productization of radiation-hardened components FY 2012 Accomplishments: Funded qualification and productization of radiation-hardened components for USAF/DOD space programs. FY 2013 Plans: Not applicable. FY 2014 Plans: Not applicable.		19.750	0.000	0.000
Title: Remotely Piloted Aircraft (RPA) Concept Definition Description: Demonstrate architecture and design concepts to support future RPA communications needs for current assets, to include higher frequency bands, high data rate protected ISR, and other protected communications FY 2012 Accomplishments: Developed space and ground architecture, design concepts and requirements for RPA. Included requirements as a contract option within an ongoing solicitation. FY 2013 Plans:		2.700	0.000	0.000

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE: April 2013	
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 2012	FY 2013
Not applicable.			
FY 2014 Plans: In FY2014, Project 64A030 funds transfer to PE 0605431F, Project 657104.			
Title: Protected MILSATCOM "Design for Affordability" Description: Perform design for affordability studies, demonstrations, and technology risk reduction on critical technology elements for the space payload, terminals and networking segments, and anti-jam enhanced theater antennas to significantly reduce the cost of protected SATCOM. FY 2012 Accomplishments: A Broad Area Announcement (BAA) was released in April 2012. A local competitive evaluation team selected and awarded 17 Phase 1 contracts in September 2012 to various companies that met the BAA requirements. Efforts include architecture and system design to include Space, Ground, Terminal, Information Assurance, performance trades, affordability assessments, waveform development, and demonstrations. FY 2013 Plans: Complete Phase 1 efforts. Four of the 17 contracts awarded late 2012 have Phase 2 options. These options will be awarded to further efforts from FY12 that will increase fidelity of architecture design, demonstrate critical components, and lower the risk on next generation protected MILSATCOM systems. FY 2014 Plans: In FY2014, Project 64A030 funds transfer to PE 0605431F, Project 657104.		56.171	10.363
Title: Hosted Payload Concept Definition Description: Validate affordable business approaches and reduce risk for commercial/hosted payload alternatives such as commercial-based free-flyer satellites, increased military wideband coverage and capacity, and other candidate system designs for hosted payloads on commercial satellites. Conduct risk reduction efforts to provide DoD operating locations for future bandwidth in the V (71-76 GHz) and W (81-86 GHz) range leading towards a commercial or hosted payload demonstration. FY 2012 Accomplishments: Develop overarching architectural design for hosted payload concept and address spectrum filing considerations for new bandwidths. Collaborate with Air Force Research Laboratory (AFRL) on payload development. FY 2013 Plans:		2.000	0.000
			0.000

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE: April 2013		
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 2012	FY 2013	FY 2014
Not applicable.				
FY 2014 Plans: In FY2014, Project 64A030 funds transfer to PE 0605431F, Project 657104.				
Title: MILSATCOM Architecture and support 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. FY 2012 Accomplishments: Funded efforts such as refining the ongoing MILSATCOM architectures, Remote Piloted Aircraft study, and Resilient Basis for SATCOM (RBS) in Joint Operations study products including affordable Information Assurance approaches, supportive terminal payload concepts, and commercial product contributions. Funded program office support and FFRDC support for above efforts. FY 2013 Plans: Funds efforts such as refining the ongoing MILSATCOM architectures including affordable Information Assurance approaches, protected MILSATCOM analysis of alternatives (AoA), and commercial product contributions. Funds the development of the Government Protected MILSATCOM testbed which will provide consistent protected tactical waveform (PTW) interoperability testing across multiple Protected "Design for Affordability" (DFA) BAA contractors. Develop functional and interoperable PTW requirements, construct testbed hardware/software and build modeling and verification test. Funds MIT/LL AEHF Terminal Adaptive Coding Accelerator effort that will build upon previous study results to develop prototype boxes that interface with both the Navy NMT and the Army SMART-T terminals to increase terminal data rates by up to 800%. Funds Program Management to include program office support, FFRDC analyses, SETA, and SE&I to support and execute the MILSATCOM SMI efforts (i.e., CIP 1a capacity improvement and Protected DFA Phases 1 & 2 risk reduction). FY 2014 Plans: In FY2014, Project 64A030 funds transfer to PE 0605431F, Project 657104.		17.717	22.013	0.000
Accomplishments/Planned Programs Subtotals		108.338	53.593	0.000

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force									DATE: April 2013		
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 64A030: Evolved AEHF MILSATCOM			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• RDT&E: BA05: PE 0605431F: Advanced EHF MILSATCOM (Space)	0.000	0.000	89.500		89.500	100.867	120.365	100.087	101.889	Continuing	Continuing
• MPAF: BA05: Line Item # ADV555: Advanced EHF	551.458	557.205	379.586		379.586	302.175	594.362	973.711	852.740	3,399.700	7,610.937
Remarks											
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.											
E. Performance Metrics											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE				PROJECT					
3600: Research, Development, Test & Evaluation, Air Force						PE 0603430F: Advanced EHF MILSATCOM				64A030: Evolved AEHF MILSATCOM					
BA 4: Advanced Component Development & Prototypes (ACD&P)						(SPACE)									
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AEHF SV-6 Flight Crypto and Future Parts Obsolescence Mitigation	Various	Various:Various,	0.000	0.000		19.479	Dec 2012	0.000		-		0.000	0.000	19.479	
AEHF Capabilities Insertion Program (CIP) 1a	SS/ Various	Lockheed Martin:Sunnyvale, CA	0.000	10.000	Sep 2012	1.738	Apr 2013	0.000		-		0.000	0.000	11.738	
Radiation Hardened Parts developers	Various	Various:Various,	0.000	19.750	Feb 2012	0.000		0.000		-		0.000	0.000	19.750	
Remotely Piloted Aircraft Concept Definition	Various	Various:Various,	0.000	2.700	Feb 2012	0.000		0.000		-		0.000	0.000	2.700	
Protected MILSATCOM "Design for Affordability" Phase 1 BAA #1	C/FFP	The Boeing Company:El Segundo, CA	0.000	11.675	Sep 2012	0.000		0.000		-		0.000	0.000	11.675	
Protected MILSATCOM "Design for Affordability" Phase 1 BAA #2	C/FFP	Loral:Palo Alto, CA	0.000	10.125	Sep 2012	0.000		0.000		-		0.000	0.000	10.125	
Protected MILSATCOM "Design for Affordability" Phase 1 BAA #3	C/FFP	Raytheon:Marlborough, MA	0.000	8.733	Sep 2012	0.000		0.000		-		0.000	0.000	8.733	
Protected MILSATCOM "Design for Affordability" Phase 1 BAA #4	C/FFP	L3 COM - West:Salt Lake City, UT	0.000	7.896	Sep 2012	0.000		0.000		-		0.000	0.000	7.896	
Protected MILSATCOM "Design for Affordability" Phase 1 BAA #5	C/FFP	Hughes Network:Germantown, MD	0.000	1.776	Sep 2012	0.000		0.000		-		0.000	0.000	1.776	
Protected MILSATCOM "Design for Affordability" Phase 1 BAA #6	C/FFP	L3 COM - East:Camden, NJ	0.000	1.200	Sep 2012	0.000		0.000		-		0.000	0.000	1.200	
Protected MILSATCOM "Design for Affordability" Phase 1 BAA #7	C/FFP	Northrop-Grumman Aerospace Systems:Redondo Beach, CA	0.000	11.036	Sep 2012	0.000		0.000		-		0.000	0.000	11.036	

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE				PROJECT					
3600: Research, Development, Test & Evaluation, Air Force BA 4: Advanced Component Development & Prototypes (ACD&P)						PE 0603430F: Advanced EHF MILSATCOM (SPACE)				64A030: Evolved AEHF MILSATCOM					
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Protected MILSATCOM "Design for Affordability" Phase 1 BAA #8	C/FFP	Viasat:Germantown, MD	0.000	1.444	Sep 2012	0.000		0.000		-		0.000	0.000	1.444	
Protected MILSATCOM "Design for Affordability" Phase 1 BAA #9-17	C/FFP	Various:Various,	0.000	2.286	Sep 2012	0.000		0.000		-		0.000	0.000	2.286	
Protected MILSATCOM "Design for Affordability" Phase 2 BAA #1	C/FFP	The Boeing Company:El Segundo, CA	0.000	0.000		2.495	Aug 2013	0.000		-		0.000	0.000	2.495	
Protected MILSATCOM "Design for Affordability" Phase 2 BAA #2	C/FFP	Loral:Palo Alto, CA	0.000	0.000		4.150	Aug 2013	0.000		-		0.000	0.000	4.150	
Protected MILSATCOM "Design for Affordability" Phase 2 BAA #3	C/FFP	Raytheon:Marlborough, MA	0.000	0.000		1.933	Aug 2013	0.000		-		0.000	0.000	1.933	
Protected MILSATCOM "Design for Affordability" Phase 2 BAA #4	C/FFP	L3 COM - West:Salt Lake City, UT	0.000	0.000		1.785	Aug 2013	0.000		-		0.000	0.000	1.785	
Hosted Payload Concept Definition	Various	Various:Various,	0.000	2.000	May 2012	0.000		0.000		-		0.000	0.000	2.000	
Subtotal			0.000	90.621		31.580		0.000		0.000		0.000	0.000	122.201	
Remarks															
FY14 funds transferred to PE 0605431F, Project 657104.															
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering & Integration	C/FFP	Linquest:Los Angeles, CA	0.000	1.723	Mar 2012	3.925	Jan 2013	0.000		-		0.000	0.000	5.648	
Subtotal			0.000	1.723		3.925		0.000		0.000		0.000	0.000	5.648	

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force													DATE: April 2013		
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 64A030: Evolved AEHF MILSATCOM			
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks FY14 funds transferred to PE 0605431F, Project 657104.															
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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		0.000		0.000		0.000	0.000	0.000	0.000
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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,	0.000	15.013	Feb 2012	13.872	Dec 2012	0.000		-		0.000	0.000	28.885	
Program Office Support & Other Related Activities (PMA)	Various	Various:Various,	0.000	0.981	Feb 2012	0.328	Dec 2012	0.000		-		0.000	0.000	1.309	
Business Operating Support Services & Acquisition Mission Support (PMA)	Various	Various:Various,	0.000	0.000		3.888	Dec 2012	0.000		-		0.000	0.000	3.888	
Subtotal			0.000	15.994		18.088		0.000		0.000		0.000	0.000	34.082	
Remarks FY14 funds transferred to PE 0605431F, Project 657104.															

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force										DATE: April 2013				
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 64A030: Evolved AEHF MILSATCOM				
	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	0.000	108.338		53.593		0.000		0.000		0.000	0.000	161.931		

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

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

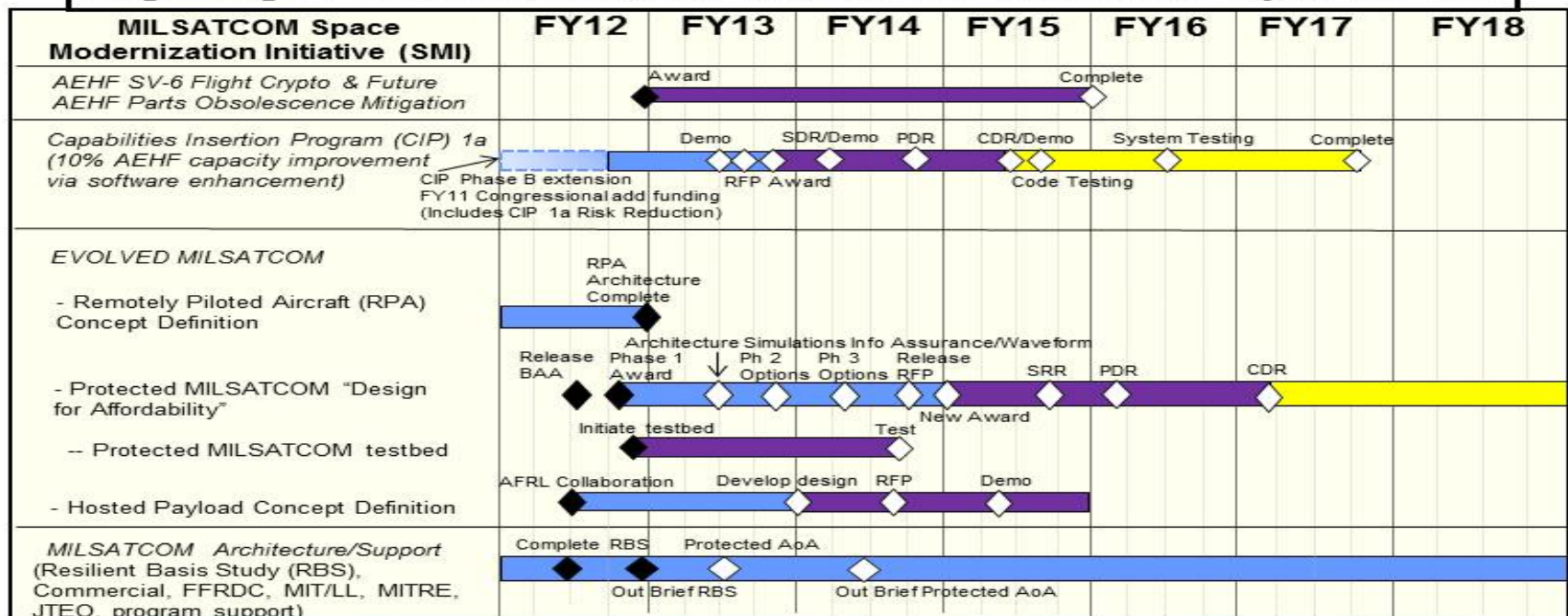
R-1 ITEM NOMENCLATURE

PE 0603430F: Advanced EHF MILSATCOM
(SPACE)

PROJECT

64A030: Evolved AEHF MILSATCOM

These efforts are funded in PE 0603430F, Project 64A030 through FY13. Beginning FY14 these efforts are funded in PE 0605431F, Project 657104.



CDR: Critical Design Review
RFP: Request for Proposal

BAA: Broad Agency Announcement
SDR: System Design Review

PDR: Preliminary Design Review
SRR: System Requirements Review

Concept activities Design / development Integration / test

FY14 PB

△◇ Key events
Funded in BPAC 644050, Advanced MILSATCOM

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force			DATE: April 2013
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
Release Broad Area Announcement (BAA) for Protected MILSATCOM "Design for Affordability"	3	2012	3	2012
Award contracts for Protected MILSATCOM "Design for Affordability"	4	2012	4	2012
Resilient Basis for SATCOM in Joint Operations Study Outbrief	4	2012	4	2012
Initiate Protected MILSATCOM AoA	3	2013	3	2013
Award Phase 2 options on selected Protected MILSATCOM "Design for Affordability" contracts	4	2013	4	2013
Award AEHF Capabilities Insertion Program (CIP) 1a contract	4	2013	4	2013