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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE							
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>					PE 0605431F: <i>Advanced EHF MILSATCOM (SPACE)</i>							
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	0.000	0.000	0.000	272.872	-	272.872	236.934	184.965	121.787	101.889	Continuing	Continuing
657103: <i>Advanced MILSATCOM</i>	0.000	0.000	0.000	183.372	-	183.372	136.067	64.600	21.700	0.000	0.000	405.739
657104: <i>Evolved AEHF MILSATCOM (EAM)</i>	0.000	0.000	0.000	89.500	-	89.500	100.867	120.365	100.087	101.889	Continuing	Continuing

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 657103, Advanced MILSATCOM, and Project 657104, Evolved AEHF MILSATCOM, efforts transferred from PE 0603430F, Advanced EHF MILSATCOM (Space), Project 644050, Advanced MILSATCOM, and Project 64A030, 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

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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 0605431F: Advanced EHF MILSATCOM (SPACE)				
BA 5: System Development & Demonstration (SDD)						
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.						
The FY14 request funds efforts such as SV-1 and SV-2 on-orbit operations support, Mission Control Segment (MCS) sustainment including ground mobile command and control, fielding and support, and studies/analyses as required. Additionally, the request funds the design/development for the transition of AEHF to the next generation crypto key management system, Key Management Infrastructure (KMI). The FY14 request also funds continued SV-6 flight crypto redevelopment, future AEHF parts obsolescence mitigation studies, and risk reduction on MILSATCOM technologies.						
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. Program Change Summary (\$ in Millions)		FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget		0.000	0.000	0.000	-	0.000
Current President's Budget		0.000	0.000	272.872	-	272.872
Total Adjustments		0.000	0.000	272.872	-	272.872
• Congressional General Reductions		-	0.000			
• Congressional Directed Reductions		-	0.000			
• Congressional Rescissions		0.000	0.000			
• Congressional Adds		-	0.000			
• Congressional Directed Transfers		-	0.000			
• Reprogrammings		0.000	0.000			
• SBIR/STTR Transfer		0.000	0.000			
• Other Adjustments		0.000	0.000	272.872	-	272.872
Change Summary Explanation						
FY14 Other Adjustment row: +\$153.857M, due to a change in Budget Activity from 4 to 5, funds have been transferred from PE 0603430F, Projects 644050 and 64A030; +\$60.215M for AEHF Interim Contractor Support; +\$58.800M for transition of the AEHF crypto Key Management Architecture to the Key Management Infrastructure (KMI)						

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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 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0605431F: Advanced EHF MILSATCOM (SPACE)				PROJECT 657103: 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
657103: Advanced MILSATCOM	0.000	0.000	0.000	183.372	-	183.372	136.067	64.600	21.700	0.000	0.000	405.739
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 657103, Advanced MILSATCOM, efforts were transferred from PE 0603430F, Advanced EHF MILSATCOM (Space), Project 64A030, 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.												
The FY14 request funds SV-1 and SV-2 on-orbit operations support; Mission Control Segment (MCS) sustainment including ground mobile command and control; fielding and support, and studies/analyses as required. Funds the design/development for the transition of the AEHF Key Management Architecture from the Electronic Key Management System (EKMS) to the Key Management Infrastructure (KMI).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2012	FY 2013	FY 2014	
Title: AEHF SVs 1-2, MCS									0.000	0.000	9.494	
Description: Maintain AEHF MILSATCOM satellites, mission control segment, and cryptography												
FY 2012 Accomplishments: Not applicable.												
FY 2013 Plans:												

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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 5: System Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0605431F: Advanced EHF MILSATCOM (SPACE)	PROJECT 657103: Advanced MILSATCOM		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
Not applicable.				
FY 2014 Plans: In FY2014, funds the System Development and Demonstration (SDD) contract Incentive Fee and continue program office support and related activities, and conduct studies/analyses, as required.				
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: Not applicable. FY 2013 Plans: Not applicable. FY 2014 Plans: In FY 2014, conduct ICS for SV-1 and SV-2 on-orbit support, MCS sustainment, and AEHF Key Management Architecture (KMA) sustainment. Conduct ICS for the ACF and the IC2 antenna.		0.000	0.000	115.078
Title: AEHF Key Management Infrastructure (KMI) transition Description: Develop and conduct systems engineering, integration and test of the Protected Key Management Architecture (PKMA). National Security Agency (NSA) will lead the development of the PKMA centralized elements. Enable testing and integration of AEHF Local Key Management functionality within the KMI client with the AEHF system. Initiate PKMA integration activities with the AEHF prime contractor and the Enhanced Polar System (EPS) Control and Planning Segment (CAPS) contractor. FY 2012 Accomplishments: Not applicable. FY 2013 Plans: Not applicable FY 2014 Plans: In FY 2014, develop and conduct systems engineering, integration and test of the Protected Key Management Architecture (PKMA). SPO will transfer funds to NSA for the development of the PKMA centralized elements, and will enable testing and integration of the AEHF Local Key Management functionality within the KMI client with the AEHF system. SPO will also initiate		0.000	0.000	58.800

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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 5: <i>System Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0605431F: <i>Advanced EHF MILSATCOM (SPACE)</i>				PROJECT 657103: <i>Advanced MILSATCOM</i>																																																			
B. Accomplishments/Planned Programs (\$ in Millions) <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <th style="width: 80%;"></th> <th style="width: 10%;">FY 2012</th> <th style="width: 10%;">FY 2013</th> <th style="width: 10%;">FY 2014</th> </tr> <tr> <td>PKMA integration activities with the AEHF prime contractor, Lockheed Martin, and the EPS CAPS contractor, Northrop Grumman Information Systems.</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">Accomplishments/Planned Programs Subtotals</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">183.372</td> </tr> </table>													FY 2012	FY 2013	FY 2014	PKMA integration activities with the AEHF prime contractor, Lockheed Martin, and the EPS CAPS contractor, Northrop Grumman Information Systems.				Accomplishments/Planned Programs Subtotals	0.000	0.000	183.372																																				
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C. Other Program Funding Summary (\$ in Millions) <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 15%;">Line Item</th> <th style="width: 8%;">FY 2012</th> <th style="width: 8%;">FY 2013</th> <th style="width: 8%;">FY 2014 Base</th> <th style="width: 8%;">FY 2014 OCO</th> <th style="width: 8%;">FY 2014 Total</th> <th style="width: 8%;">FY 2015</th> <th style="width: 8%;">FY 2016</th> <th style="width: 8%;">FY 2017</th> <th style="width: 8%;">FY 2018</th> <th style="width: 8%;">Cost To Complete</th> <th style="width: 8%;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>• RDT&E: BA04: PE 0603430F: <i>Advanced EHF MILSATCOM (Space)</i></td> <td style="text-align: right;">276.675</td> <td style="text-align: right;">175.578</td> <td style="text-align: right;">0.000</td> <td></td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">452.253</td> </tr> <tr> <td>• MPAF: BA05: Line Item # <i>ADV555: Advanced EHF TOA</i></td> <td style="text-align: right;">551.458</td> <td style="text-align: right;">557.205</td> <td style="text-align: right;">379.586</td> <td></td> <td style="text-align: right;">379.586</td> <td style="text-align: right;">302.175</td> <td style="text-align: right;">594.362</td> <td style="text-align: right;">973.711</td> <td style="text-align: right;">852.740</td> <td style="text-align: right;">3,399.700</td> <td style="text-align: right;">7,610.937</td> </tr> <tr> <td>• RDT&E: BA05: PE 0605433F: <i>Wideband Global SATCOM (Space)</i></td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">13.948</td> <td></td> <td style="text-align: right;">13.948</td> <td style="text-align: right;">16.817</td> <td style="text-align: right;">17.096</td> <td style="text-align: right;">18.104</td> <td style="text-align: right;">18.430</td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">Continuing</td> </tr> </tbody> </table>												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: BA04: PE 0603430F: <i>Advanced EHF MILSATCOM (Space)</i>	276.675	175.578	0.000		0.000	0.000	0.000	0.000	0.000	0.000	452.253	• MPAF: BA05: Line Item # <i>ADV555: Advanced EHF TOA</i>	551.458	557.205	379.586		379.586	302.175	594.362	973.711	852.740	3,399.700	7,610.937	• RDT&E: BA05: PE 0605433F: <i>Wideband Global SATCOM (Space)</i>	0.000	0.000	13.948		13.948	16.817	17.096	18.104	18.430	Continuing	Continuing
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: BA04: PE 0603430F: <i>Advanced EHF MILSATCOM (Space)</i>	276.675	175.578	0.000		0.000	0.000	0.000	0.000	0.000	0.000	452.253																																																
• MPAF: BA05: Line Item # <i>ADV555: Advanced EHF TOA</i>	551.458	557.205	379.586		379.586	302.175	594.362	973.711	852.740	3,399.700	7,610.937																																																
• RDT&E: BA05: PE 0605433F: <i>Wideband Global SATCOM (Space)</i>	0.000	0.000	13.948		13.948	16.817	17.096	18.104	18.430	Continuing	Continuing																																																
Remarks Wideband Global SATCOM (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.																																																											

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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 5: System Development & Demonstration (SDD)						R-1 ITEM NOMENCLATURE PE 0605431F: Advanced EHF MILSATCOM (SPACE)				PROJECT 657103: 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
Crypto Interim Contractor Support	MIPR	Cryptologic Sys Group:San Antonio, TX	0.000	0.000		0.000		10.200	Mar 2014	-		10.200	3.600	13.800	
AEHF Interim Contractor Support	SS/CPIF	Lockheed Martin:Sunnyvale, CA	0.000	0.000		0.000		94.260	Dec 2013	-		94.260	51.609	145.869	
GFP - AEHF Calibration Facility (ACF)	Various	Lincoln Labs:Lexington, MA	0.000	0.000		0.000		10.618	Dec 2013	-		10.618	7.200	17.818	
KMI- National Security Agency (NSA)	MIPR	NSA:Ft Meade, MD	0.000	0.000		0.000		46.300	Dec 2013	-		46.300	115.700	162.000	
KMI--Lockheed Martin (LM)	SS/FP	Lockheed Martin:Sunnyvale, CA	0.000	0.000		0.000		4.700	Dec 2013	-		4.700	12.800	17.500	
KMI - Northrop Grumman Information Systems	SS/CPAF	Northrop Grumman Information Systems:Redondo Beach, CA	0.000	0.000		0.000		3.800	Dec 2013	-		3.800	9.900	13.700	
KMI-Cryptologic Systems Division (CPSD)	MIPR	AFLCMC:San Antonio, TX	0.000	0.000		0.000		3.500	Dec 2013	-		3.500	14.100	17.600	
Subtotal			0.000	0.000		0.000		173.378		0.000		173.378	214.909	388.287	
Remarks															
FY14 funds transferred from PE 0603430F, Project 644050.															
Updated to add KMI Design Development Transition.															
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
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

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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 5: System Development & Demonstration (SDD)						R-1 ITEM NOMENCLATURE PE 0605431F: Advanced EHF MILSATCOM (SPACE)				PROJECT 657103: Advanced MILSATCOM					
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,	0.000	0.000		0.000		0.250	Dec 2013	-		0.250	0.000	0.250	
Subtotal			0.000	0.000		0.000		0.250		0.000		0.250	0.000	0.250	
Remarks FY14 funds transferred from PE 0603430F, Project 644050.															
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)	RO	The Aerospace Corporation:El Segundo, CA	0.000	0.000		0.000		5.257	Dec 2013	-		5.257	4.799	10.056	
Business Operating Support Services & Acquisition Mission Support (PMA)	Various	Various:Various,	0.000	0.000		0.000		4.487	Dec 2013	-		4.487	2.659	7.146	
Subtotal			0.000	0.000		0.000		9.744		0.000		9.744	7.458	17.202	
Remarks FY14 funds transferred from PE 0603430F, Project 644050.															
			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	0.000		0.000		183.372		0.000		183.372	222.367	405.739	
Remarks															

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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 5: System Development & Demonstration (SDD)

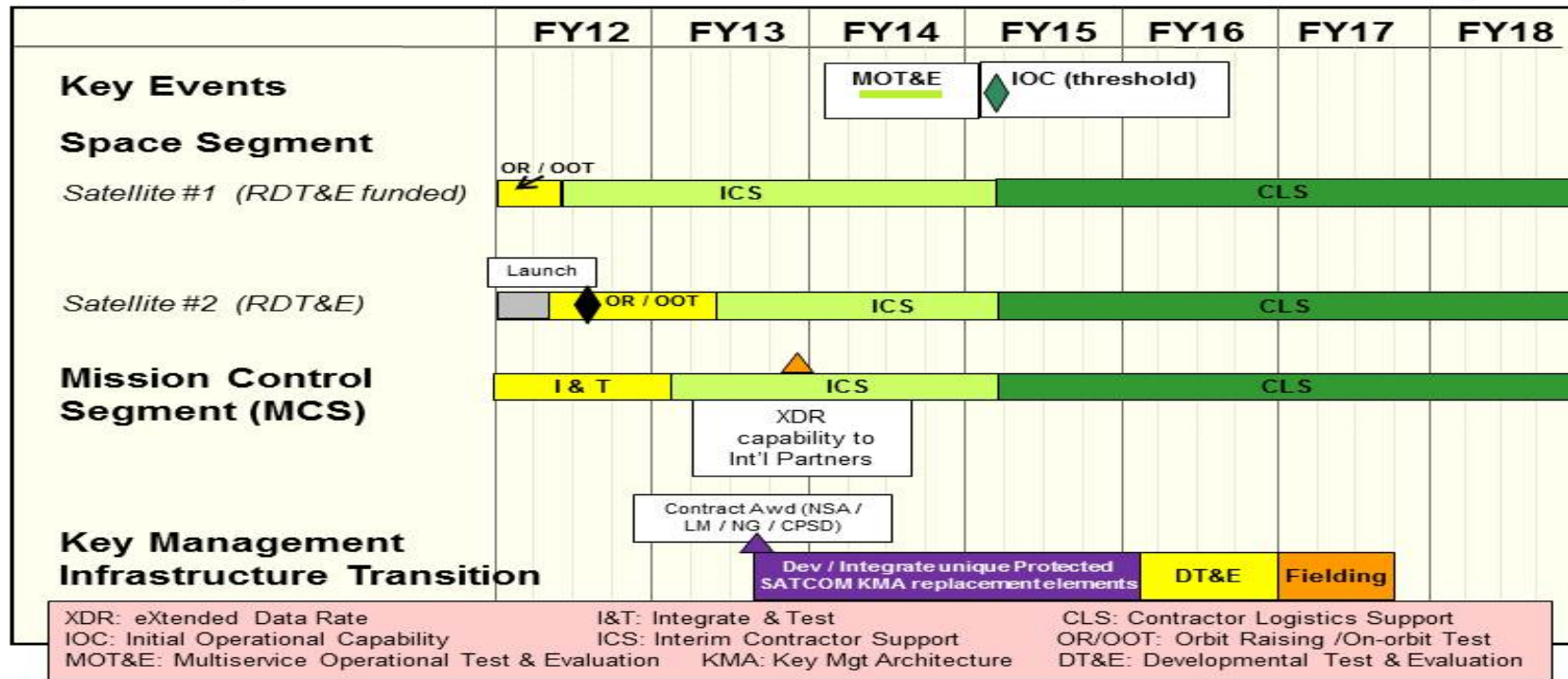
R-1 ITEM NOMENCLATURE

PE 0605431F: Advanced EHF MILSATCOM
(SPACE)

PROJECT

657103: Advanced MILSATCOM

These efforts are funded in Project 657103 beginning FY14.
Prior to FY14 these efforts are funded in Project 644050.



△◇ Key events

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
3600: Research, Development, Test & Evaluation, Air Force	PE 0605431F: Advanced EHF MILSATCOM	657103: Advanced MILSATCOM	
BA 5: System Development & Demonstration (SDD)	(SPACE)		

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Multiservice Operational Test and Evaluation (MOT&E)	2	2014	4	2014
Initial Operational Capability (IOC) threshold	1	2015	1	2015

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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 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0605431F: Advanced EHF MILSATCOM (SPACE)				PROJECT 657104: Evolved AEHF MILSATCOM (EAM)			
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
657104: Evolved AEHF MILSATCOM (EAM)	0.000	0.000	0.000	89.500	-	89.500	100.867	120.365	100.087	101.889	Continuing	Continuing
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 657104, efforts were transferred from PE 0603430F, Advanced EHF MILSATCOM (Space), Project 64A030, 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 architecture. In addition, SMI begins acquisition capabilities supporting concept definitions and demos for protected tactical communication services, anti-jam enhanced theater antennas, and increased wideband coverage and capacity.												
FY14 funds efforts such as SV-6 flight crypto redevelopment, parts obsolescence mitigation studies for future AEHFs, AEHF capacity improvement development, and risk reduction on MILSATCOM technologies. Additionally, FY14 funds Systems Engineering and Program Management to include Program Office Support such as Federally Funded Research and Development Center (FFRDC) analyses, Systems Engineering Technical Assistance (SETA) and Systems Engineering and Integration (SE&I) to support risk reduction on MILSATCOM technologies.												
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	0.000	25.000
Description: AEHF SV-6 flight cryptographic equipment redesign effort and future AEHF parts obsolescence mitigation effort												
FY 2012 Accomplishments: Not applicable.												
FY 2013 Plans:												

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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 5: System Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0605431F: Advanced EHF MILSATCOM (SPACE)	PROJECT 657104: Evolved AEHF MILSATCOM (EAM)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
Not applicable.				
FY 2014 Plans: Continues 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.				
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: Not applicable. FY 2013 Plans: Not applicable. FY 2014 Plans: Conduct AEHF CIP 1a software initial design to include System Design Review (SDR) and Preliminary Design Review (PDR).		0.000	0.000	23.684
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, small protected tactical hosted payloads, and anti-jam enhanced theater antennas to significantly reduce the cost of protected SATCOM. FY 2012 Accomplishments: Not applicable. FY 2013 Plans: Not applicable. FY 2014 Plans: Four of the 17 contracts awarded late 2012 have Phase 3 options. These options will be awarded to further efforts from FY13 that will include capability demonstrations to lower the risk on next generation protected MILSATCOM systems.		0.000	0.000	17.750
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		0.000	0.000	2.000

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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 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605431F: <i>Advanced EHF MILSATCOM (SPACE)</i>	PROJECT 657104: <i>Evolved AEHF MILSATCOM (EAM)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013
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: Not applicable.			
FY 2013 Plans: Not applicable.			
FY 2014 Plans: Release RFP for risk reduction study leading to integration and launch of an Air Force Research Laboratory (AFRL)-developed V- and W-band communications payload on a host satellite.			
Title: MILSATCOM Architecture and support		0.000	0.000
Description: Conduct Systems Engineering and Program Management to include Program Office support such as Federally Funded Research and Development Center (FFRDC) analyses, Systems Engineering Technical Assistance (SETA), Systems Engineering and Integration (SE&I) and other related activities			21.066
FY 2012 Accomplishments: Not applicable.			
FY 2013 Plans: Not applicable.			
FY 2014 Plans: Funds efforts such as refining the ongoing MILSATCOM architectures including affordable Information Assurance approaches, Protected MILSATCOM analysis of alternatives (AoA), commercial pathfinder demonstrations, supportive terminal payload concepts, university research, and commercial product contributions. Continues the Government Protected MILSATCOM testbed for Design for Affordability (DFA) Phase 3 tests of the protected tactical waveform (PTW). The demonstrations will establish a benchmark for industry in PTW development maturity and reduce risk in future protected tactical systems. MIT/LL will report on the Phase 3 compatibility demonstrations results from each contractor demonstration and assess qualitative features. Additionally, MIT/LL will conduct the Critical Design Review for the Terminal Adaptive Coding Accelerator, an effort that builds upon previous study results to develop prototype boxes to interface with both the Navy's NMT and the Army's SMART-T terminals to increase terminal data rates by up to 800%. Funds Program Management to include program office support, FFRDC analyses,			

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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 5: System Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0605431F: Advanced EHF MILSATCOM (SPACE)				PROJECT 657104: Evolved AEHF MILSATCOM (EAM)				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2012	FY 2013	FY 2014
SETA, and SE&I to support and execute the MILSATCOM SMI efforts (i.e., CIP 1a capacity improvement, Protected DFA Phase 3 risk reduction, and hosted payload risk reduction).												
Accomplishments/Planned Programs Subtotals										0.000	0.000	89.500
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: BA04: PE 0603430F: Advanced EHF MILSATCOM (Space)	108.338	53.593	0.000		0.000	0.000	0.000	0.000	0.000	0.000	174.364	
• 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.												

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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 5: System Development & Demonstration (SDD)						PE 0605431F: Advanced EHF MILSATCOM (SPACE)				657104: Evolved AEHF MILSATCOM (EAM)					
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		0.000		25.000	Dec 2013	-		25.000	Continuing	Continuing	
AEHF Capabilities Insertion Program (CIP) 1a	SS/ Various	Lockheed Martin:Sunnyvale, CA	0.000	0.000		0.000		23.684	Dec 2013	-		23.684	Continuing	Continuing	
Protected MILSATCOM "Design for Affordability" Phase 3 BAA #1	C/FFP	The Boeing Company:El Segundo, CA	0.000	0.000		0.000		5.995	Feb 2014	-		5.995	0.000	5.995	
Protected MILSATCOM "Design for Affordability" Phase 3 BAA #2	C/FFP	Loral:Palo Alto, CA	0.000	0.000		0.000		4.400	Feb 2014	-		4.400	0.000	4.400	
Protected MILSATCOM "Design for Affordability" Phase 3 BAA #3	C/FFP	Raytheon:Marlborough, MA	0.000	0.000		0.000		3.981	Feb 2014	-		3.981	0.000	3.981	
Protected MILSATCOM "Design for Affordability" Phase 3 BAA #4	C/FFP	L3 COM - West:Salt Lake City, UT	0.000	0.000		0.000		3.374	Feb 2014	-		3.374	0.000	3.374	
Hosted Payload Concept Definition	Various	TBD:TBD,	0.000	0.000		0.000		2.000	Dec 2013	-		2.000	Continuing	Continuing	
Subtotal			0.000	0.000		0.000		68.434		0.000		68.434			
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 and Integration	C/TBD	TBD:TBD,	0.000	0.000		0.000		3.536	Dec 2013	-		3.536	Continuing	Continuing	
Subtotal			0.000	0.000		0.000		3.536		0.000		3.536			

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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 5: System Development & Demonstration (SDD)							R-1 ITEM NOMENCLATURE PE 0605431F: Advanced EHF MILSATCOM (SPACE)				PROJECT 657104: Evolved AEHF MILSATCOM (EAM)				
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	0.000		0.000		12.317	Dec 2013	-		12.317	Continuing	Continuing	
Program Office Support & Other Related Activities (PMA)	Various	Various:Various,	0.000	0.000		0.000		0.106	Dec 2013	-		0.106	Continuing	Continuing	
Business Operating Support Services & Acquisition Mission Support (PMA)	Various	Various:Various,	0.000	0.000		0.000		5.107	Dec 2013	-		5.107	Continuing	Continuing	
Subtotal			0.000	0.000		0.000		17.530		0.000		17.530			
			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	0.000		0.000		89.500		0.000		89.500			
Remarks															

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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 5: System Development & Demonstration (SDD)

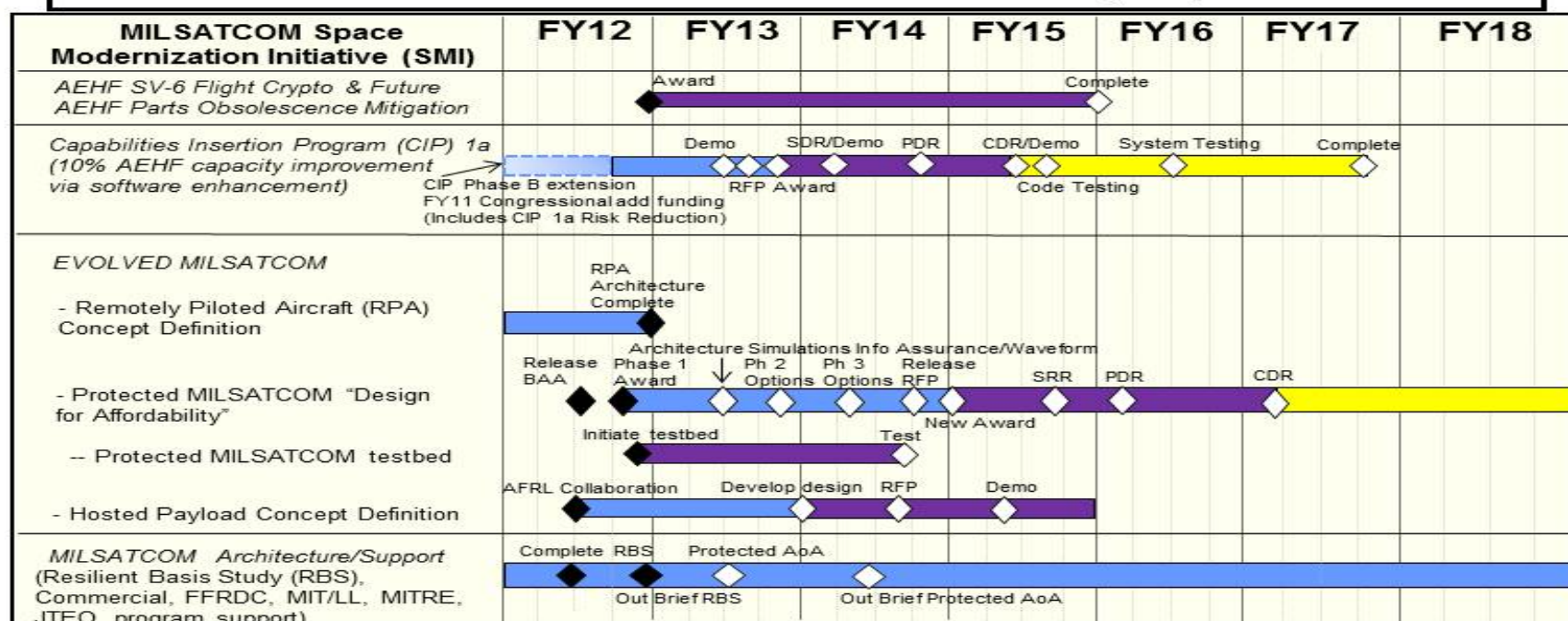
R-1 ITEM NOMENCLATURE

PE 0605431F: Advanced EHF MILSATCOM
(SPACE)

PROJECT

657104: Evolved AEHF MILSATCOM (EAM)

These efforts are funded in PE 0605431F, Project 657104 beginning FY14. Prior to FY14 these efforts are funded in PE 0603430F, Project 64A030.



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

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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 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0605431F: <i>Advanced EHF MILSATCOM (SPACE)</i>	PROJECT 657104: <i>Evolved AEHF MILSATCOM (EAM)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Conduct AEHF CIP 1a System Design Review (SDR)	1	2014	1	2014
Award Phase 3 options for Protected MILSATCOM "Design for Affordability"	2	2014	2	2014
Outbrief Protected AoA	2	2014	2	2014
Conduct AEHF CIP 1a Preliminary Design Review (PDR)	4	2014	4	2014
Release Design For Affordability Request for Proposal (RFP)	4	2014	4	2014