PE NUMBER: 0603430F
PE TITLE: Advanced (EHF MILSATCOM (Space)

Exhibit R-2, RDT&E Budget Item Justification

DATE: May 2009

BUDGET ACTIVITY: 04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE: 0603430F Advanced (EHF MILSATCOM (Space)

	Cost ($ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
	Total Program Element (PE) Cost	612.318	386.425	464.335	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
4050	Advanced MILSATCOM	612.318	386.425	464.335	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

(U) 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) at 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 Netherlands).

First time integration and test challenges and flight hardware problems with Space Vehicle-1 (SV-1) have delayed the launch to September 2010. These issues also impact SV-2 cost and schedule. SV-2 launch has been delayed to September 2011. A Service Cost Position (SCP) was completed in July 2008 and an OSD Cost Analysis Improvement Group (CAIG) Independent Cost Estimate (ICE) was completed in November 2008. The budget was increased to fully fund SV-1 and SV-2 overruns and match the OSD CAIG cost estimate.

A Nunn-McCurdy review due to a critical Average Procurement Unit Cost (APUC) breach has completed and the program was certified on 29 December 2008 (see Missile Procurement budget justification documentation for futher details).

The FY10PB funds efforts such as SV-1 integration and test, and launch; SV-2 integration and test; technology needs forecasting; obsolescence and studies for future SVs; and incremental Mission Control Segment (MCS) including ground mobile command and control development, test/fielding and support.

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

(U) B. Program Change Summary ($ in Millions)

		FY 2008	FY 2009	FY 2010
(U)	Previous President's Budget	599.353	388.041	109.067
(U)	Current PBR/President's Budget	612.318	386.425	464.335
(U)	Total Adjustments	12.965	-1.616	
(U)	Congressional Program Reductions		-0.566	
	Congressional Rescissions		-1.050	
	Congressional Increases			
	Reprogrammings	20.000		
	SBIR/STTR Transfer	-7.035		
(U)	Significant Program Changes:			

Exhibit R-2, RDT&E Budget Item Justification	DATE May 2009
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603430F Advanced (EHF MILSATCOM (Space)

FY08: Reprogrammed $20.0M (Omnibus) to address AEHF SV-1 & SV-2 launch delays

Congress approved (not reflected above) the reprogramming of $45M FY08 & $35M FY09, and the Department added FY10 funds to address ongoing AEHF SV-1 & SV-2 delays resulting from integration and test problems in accordance with the OSD CAIG Independent Cost Estimate.

Exhibit R-2a, RDT&E Project Justification			DATE: May 2009
BUDGET ACTIVITY: 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE: 0603430F Advanced (EHF MILSATCOM (Space)	PROJECT NUMBER AND TITLE: 4050 Advanced MILSATCOM	

Cost ($ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
4050 Advanced MILSATCOM	612.318	386.425	464.335	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) 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) at 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 Netherlands).

First time integration and test challenges and flight hardware problems with Space Vehicle-1 (SV-1) have delayed the launch to September 2010. These issues also impact SV-2 cost and schedule. SV-2 launch has been delayed to September 2011. A Service Cost Position (SCP) was completed in July 2008 and an OSD Cost Analysis Improvement Group (CAIG) Independent Cost Estimate (ICE) was completed in November 2008. The budget was increased to fully fund SV-1 and SV-2 overruns and match the OSD CAIG cost estimate.

A Nunn-McCurdy review due to a critical Average Procurement Unit Cost (APUC) breach has completed and the program was certified on 29 December 2008 (see Missile Procurement budget justification documentation for futher details).

The FY10PB funds efforts such as SV-1 integration and test, and launch; SV-2 integration and test; technology needs forecasting; obsolescence and studies for future SVs; and incremental Mission Control Segment (MCS) including ground mobile command and control development, test/fielding and support.

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

	B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010
(U)	Continue efforts such as SDD of the AEHF satellites and MCS. Launch SV-1; continue build of Satellite 1 and 2 flight hardware, and intermediate software increments for bus and payload; technology needs forecasting; obsolescence and studies for future SVs	547.808	334.710	418.823
(U)	Continue satellite cryptographic development	16.772	11.415	5.348
(U)	Government Furnished Property (such as Launch Prep, MCS, Communication Circuit,etc)	4.267	1.987	0.703
(U)	Continue Technical Support including studies and analyses	21.684	22.551	23.227
(U)	Continue Program Office and related support activities, such as Systems Engineering and Integration	21.787	15.762	16.234
(U)	Total Cost	612.318	386.425	464.335

Exhibit R-2a, RDT&E Project Justification		DATE: May 2009
BUDGET ACTIVITY: 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE: 0603430F Advanced (EHF MILSATCOM (Space)	PROJECT NUMBER AND TITLE: 4050 Advanced MILSATCOM

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

	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total Cost
(U) Related Proc:										
(U) MPAF, PE 0303604F, Advanced EHF, P-17/18	149.894	166.072	1843.475						Continuing	TBD
(U) RDT&E, PE 0603854F, Wideband MILSATCOM (Space), Project #644870, CCS-C, R-52	20.992	12.343	18.321						Continuing	TBD
(U) OPAF, PE 0303600F WGS, Project #836780, CCS-C	8.335	0.000	0.000						Continuing	TBD
(U) RDT&E, PE 0303601F, MILSATCOM Terminals, BA-7, R-175	362.676	334.182	257.831						Continuing	TBD

(U) 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 three 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. The Program Office is updating the acquisition strategy to include AEHF SV-4.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: May 2009

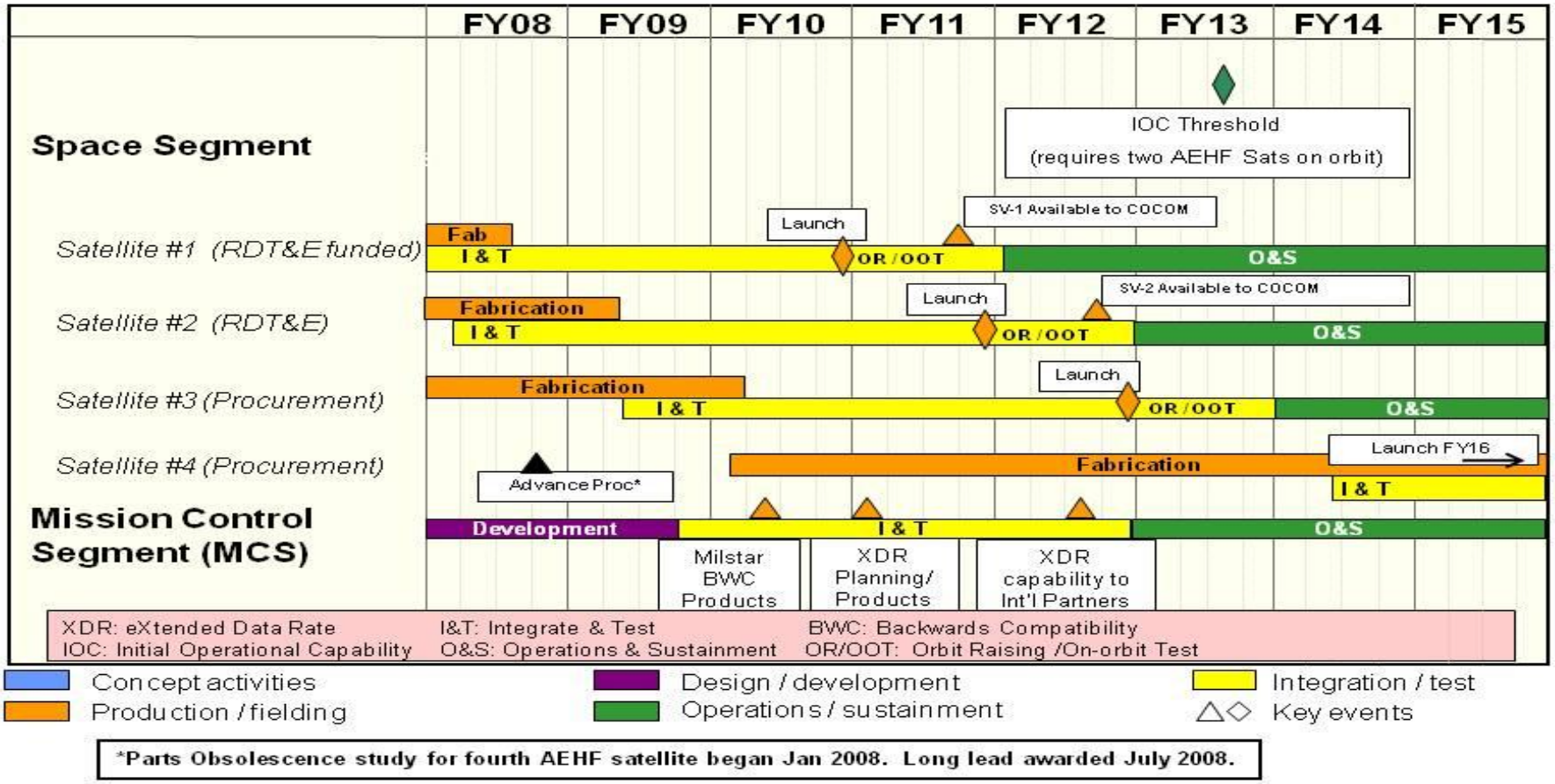
BUDGET ACTIVITY: 04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE: 0603430F Advanced (EHF MILSATCOM (Space)

PROJECT NUMBER AND TITLE: 4050 Advanced MILSATCOM

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
NSA	MIPR	Camden, NJ	224.990	16.772	Dec-07	11.415	Dec-08	5.348	Dec-09	Continuing	TBD	
JTEO	PR	San Diego, CA	15.491							0.000	15.491	
MIT/LL	MIPR	Hanscom AFB, MA	4.988							0.000	4.988	
Hughes	CPFF	El Segundo, CA	67.175							0.000	67.175	
TRW	CPFF	Redondo Beach, CA	62.083							0.000	62.083	
Various	Various	Various	66.659							0.000	66.659	
Lockheed Martin (Pre-EMD)	FFP	Sunnyvale, CA	225.011							0.000	225.011	
Hughes	FFP	El Segundo, CA								0.000	0.000	
SDD Contractor (Lockheed Martin)	CPAF		3,405.934	547.808	Dec-07	334.710	Dec-08	418.823	Dec-09	Continuing	TBD	
Radiation Hardened parts developers	Various	Various	98.530							0.000	98.530	
Subtotal Product Development			4,170.861	564.580		346.125		424.171		Continuing	TBD	0.000
Remarks:												
(U) Support												
Various	Various		123.696							0.000	123.696	
Technical Support			43.725	21.684	Dec-07	22.551	Dec-08	23.227	Dec-09	Continuing	TBD	
GFP			6.150	4.267		1.987		0.703		0.000	13.107	
Program Office Support			75.003	21.787		15.762		16.234		Continuing	TBD	
Subtotal Support			248.574	47.738		40.300		40.164		Continuing	TBD	0.000
Remarks:												
(U) Test & Evaluation												
										0.000	0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Management												
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			4,419.435	612.318		386.425		464.335		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile		DATE May 2009
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603430F Advanced (EHF MILSATCOM (Space)	PROJECT NUMBER AND TITLE 4050 Advanced MILSATCOM



*Parts Obsolescence study for fourth AEHF satellite began Jan 2008. Long lead awarded July 2008.

Exhibit R-4a, RDT&E Schedule Detail		DATE May 2009
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603430F Advanced (EHF MILSATCOM (Space)	PROJECT NUMBER AND TITLE 4050 Advanced MILSATCOM

(U) Schedule Profile	FY 2008	FY 2009	FY 2010
(U) SV-2 Baseline Integrated System Test	4Q		
(U) Field Ground Segment Software Increment 4 (World-wide Flight and Payload Control of 5 Milstar satellites and 1 AEHF satellite - BWC Products)			2Q
(U) Launch first AEHF satellite			4Q

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