

UNCLASSIFIED

PE NUMBER: 0603432F
 PE TITLE: Polar MILSATCOM (Space)

Exhibit R-2, RDT&E Budget Item Justification	DATE May 2009
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BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603432F Polar MILSATCOM (Space)
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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	171.775	236.965	253.150	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
4052 Polar Satellite Communications	171.775	236.965	253.150	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

This program element acquires the Polar Military Satellite Communications (MILSATCOM) system that provides protected communications (anti jam, anti scintillation, and low probability of intercept) 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.

Beginning in FY06, Polar Satellite Communications began funding the next generation capability with two more polar packages via the same host (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 and the eXtended Data Rate (XDR) waveform. The EPS Capability Development Document, Joint Requirements Oversight Council approved in September 2006, is based on a two-package, hosted XDR program with operational availability in FY15 and FY17. FY10 funds will initiate the fabrication of the two hosted EPS packages (EPS #1 and EPS #2); pursue technology needs forecasting; and continue the development of the associated ground segment.

The Polar MILSATCOM program is in Budget Activity 4, Advanced Component Development and Prototypes, based on the 8 Dec 07 USD(AT&L) memorandum to develop the enhanced polar hosted solution.

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Previous President's Budget	177.535	237.749	257.059
(U) Current PBR/President's Budget	171.775	236.965	253.150
(U) Total Adjustments	-5.760	-0.784	
(U) Congressional Program Reductions		-0.140	
Congressional Rescissions		-0.644	
Congressional Increases			
Reprogrammings	-0.934		
SBIR/STTR Transfer	-4.826		

(U) Significant Program Changes:

FY2008: Reprogrammed \$0.934M for higher priorities

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)							PE NUMBER AND TITLE 0603432F Polar MILSATCOM (Space)		PROJECT NUMBER AND TITLE 4052 Polar Satellite Communications	
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
4052 Polar Satellite Communications	171.775	236.965	253.150	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

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Beginning in FY06, Polar Satellite Communications began funding the next generation capability with two more polar packages via the same host (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 and the eXtended Data Rate (XDR) waveform. The EPS Capability Development Document, Joint Requirements Oversight Council approved in September 2006, is based on a two-package, hosted XDR program with operational availability in FY15 and FY17. FY10 funds will initiate the fabrication of the two hosted EPS packages (EPS #1 and EPS #2); pursue technology needs forecasting; and continue the development of the associated ground segment.

The Polar MILSATCOM program is in Budget Activity 4, Advanced Component Development and Prototypes, based on the 8 Dec 07 USD(AT&L) memorandum to develop the enhanced polar hosted solution.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Conduct requirements analyses and design trade studies for Enhanced Polar packages and associated ground segment	14.583	17.500	18.566
(U) Continue design and development of Enhanced Polar packages and associated ground segment	142.823	202.109	208.635
(U) Cryptographic modifications (including Information Assurance)	0.000	1.922	1.783
(U) Provide Program Office Support and related support activities, such as Systems Engineering and Integration	10.768	10.594	8.951
(U) Provide Technical Analysis	3.601	4.840	4.872
(U) Government Furnished Property (such as specialized testing equipment)	0.000	0.000	10.343
(U) Total Cost	171.775	236.965	253.150

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) None.										

The Navy has used its own PE(s) to modify control systems and terminals to work with the Interim Polar System.

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

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PROJECT NUMBER AND TITLE

4052 Polar Satellite Communications**(U) D. Acquisition Strategy**

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

Under the direction of the Program Executive Officer for Space, the EPS Program Office is developing the EPS Acquisition Strategy through studies and activities leading to a 2QFY10 Defense Acquisition Board for Milestone B entry approval. Based on the successful December 2007 Acquisition Strategy review and an 8 December 2007 signed Acquisition Decision Memorandum, the classified host program office was provided authority to proceed for the design, procurement, and integration of two EPS packages and plans to definitize the contract with the host prime contractor by 3QFY09.

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Exhibit R-3, RDT&E Project Cost Analysis

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BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE			
04 Advanced Component Development and Prototypes (ACD&P)				0603432F Polar MILSATCOM (Space)					4052 Polar Satellite Communications			
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2008 Cost</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>FY 2010 Cost</u>	<u>FY 2010 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u>												
Classified	Classified		299.594								299.594	
EPS Requirement Analyses and Design Trade Studies	Various	Various	33.333	14.583	Jan-08	17.500	Dec-08	18.566	Dec-09	Continuing	TBD	
NGST EPS Design/Development Contract	CPAF/IF	Redondo Beach, CA	0.000	142.823	Jul-08	202.109	Jan-09	208.635	Dec-09	Continuing	TBD	
Cryptographic Modifications (NSA)			0.000	0.000	Dec-07	1.922	Jan-09	1.783	Jan-10	Continuing	TBD	
Subtotal Product Development			332.927	157.406		221.531		228.984		Continuing	TBD	0.000
Remarks:												
(U) <u>Support</u>												
Technical Support	Various		1.933	3.601	Dec-07	4.840	Dec-08	4.872	Dec-09	Continuing	TBD	
Program Office Support	Various		4.745	10.768	Dec-07	10.594	Dec-08	8.951	Dec-09	Continuing	TBD	
Govt Furnished Property	Various	Various	0.000	0.000		0.000		10.343	Dec-09	Continuing	TBD	
Subtotal Support			6.678	14.369		15.434		24.166		Continuing	TBD	0.000
Remarks:												
(U) <u>Test & Evaluation</u>												
N/A											0.000	
N/A											0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Management</u>												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			339.605	171.775		236.965		253.150		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

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PROJECT NUMBER AND TITLE

4052 Polar Satellite Communications

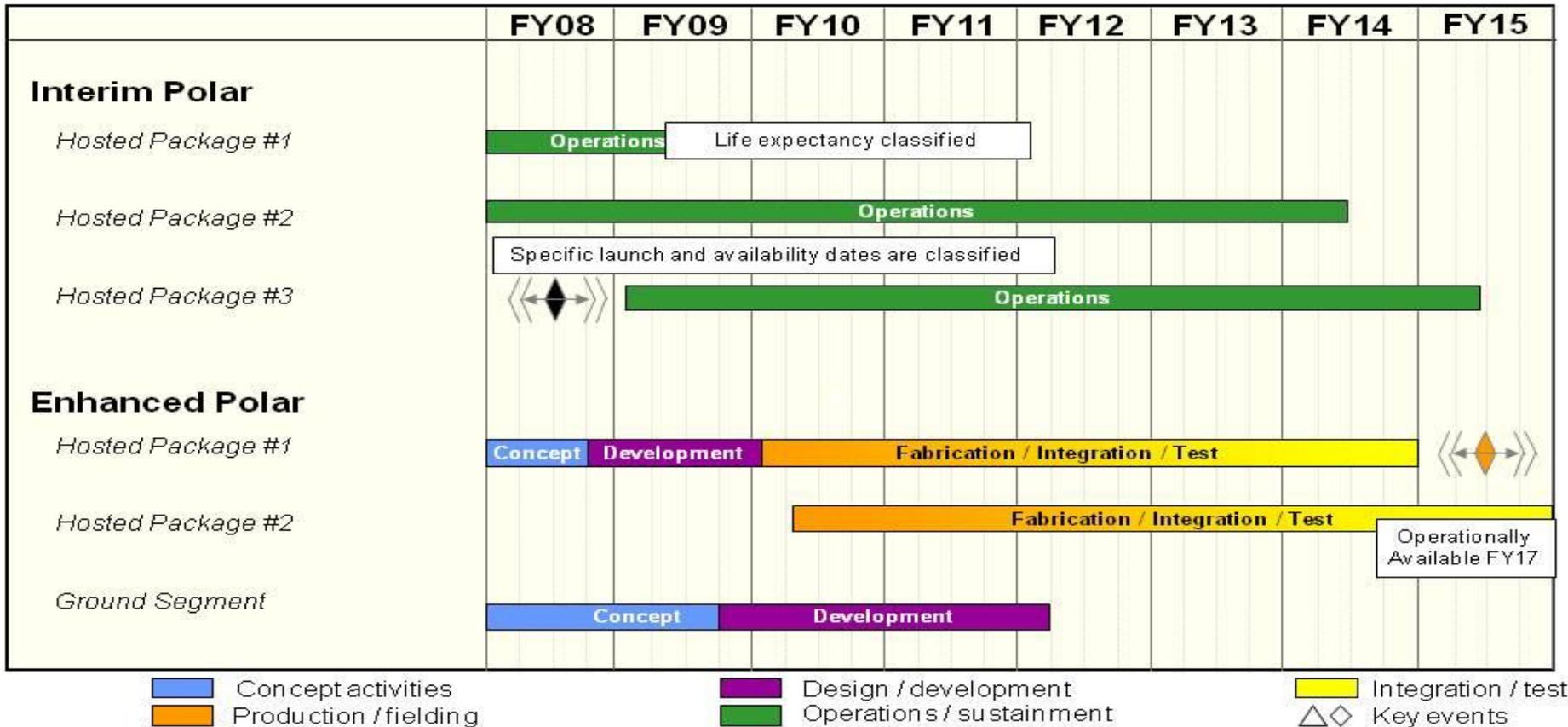


Exhibit R-4a, RDT&E Schedule Detail

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PROJECT NUMBER AND TITLE

4052 Polar Satellite Communications

(U) Schedule Profile

- (U) Begin design and development of Enhanced Polar packages
- (U) Continue ground segment concept studies
- (U) Begin design and development of the ground segment
- (U) Begin fabrication of first Enhanced Polar package
- (U) Begin fabrication of second Enhanced Polar package

FY 2008

4Q

1Q

FY 2009

4Q

FY 2010

1Q

2Q