

**UNCLASSIFIED**

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

<b>Exhibit R-2, RDT&amp;E Budget Item Justification</b>	DATE <b>February 2008</b>
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<b>BUDGET ACTIVITY</b> <b>04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603432F Polar MILSATCOM (Space)</b>
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Cost (\$ in Millions)	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	33.983	177.535	237.749	257.059	168.738	106.544	57.292	Continuing	TBD
4052 Polar Satellite Communications	33.983	177.535	237.749	257.059	168.738	106.544	57.292	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 packages are on-orbit, and the final LDR package will be available in FY08. Two satellites with hosted packages are required to provide the necessary 24 hour coverage.

Beginning 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 FY14 and FY16. FY09 funds will complete the EPS package development and initiate fabrication of the two hosted EPS packages (EPS #1 and EPS #2); pursue technology needs forecasting; and begin development for 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 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	35.470	178.754	244.127
(U) Current PBR/President's Budget	33.983	177.535	237.749
(U) Total Adjustments	-1.487		
(U) Congressional Program Reductions		-0.086	
Congressional Rescissions		-1.133	
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-1.487		
(U) <u>Significant Program Changes:</u>			
None.			

**Exhibit R-2a, RDT&E Project Justification**

DATE  
**February 2008**

BUDGET ACTIVITY <b>04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				PE NUMBER AND TITLE <b>0603432F Polar MILSATCOM (Space)</b>			PROJECT NUMBER AND TITLE <b>4052 Polar Satellite Communications</b>		
Cost (\$ in Millions)	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
4052 Polar Satellite Communications	33.983	177.535	237.749	257.059	168.738	106.544	57.292	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

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

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Conduct requirements analyses and design trade studies for Enhanced Polar packages and associated ground segment	28.921	6.000	31.654
(U) Continue efforts such as, but limited to, design and development of Enhanced Polar packages		158.839	188.459
(U) Provide Program Office Support (such as, but not limited to other related support activities, including Systems Engineering and Integration)	3.129	4.095	4.035
(U) Provide Technical Analysis	1.933	3.601	3.601
(U) Government Furnished Property (such as, but not limited to Launch Prep, Radiation Hardened Testing, Communication Circuit)		5.000	10.000
(U) Total Cost	33.983	177.535	237.749

Exhibit R-2a, RDT&E Project Justification

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04 Advanced Component Development and Prototypes (ACD&P)

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

	<u>FY 2007</u>	<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>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</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.

(U) **D. Acquisition Strategy**

Previously, the Air Force sent funds directly to the classified host program office to modify the host satellite system contract to include three Interim Polar (Low Data Rate) packages. The host program office had total acquisition responsibility for Interim Polar System (IPS).

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 1QFY09 Defense Space Acquisition Board for Key Decision Point 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 will award a contract to the host prime contractor for the design, procurement, and integration of two EPS packages during 2QFY08.

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**Exhibit R-3, RDT&E Project Cost Analysis**

DATE

**February 2008**

BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE			
<b>04 Advanced Component Development and Prototypes (ACD&amp;P)</b>				<b>0603432F Polar MILSATCOM (Space)</b>					<b>4052 Polar Satellite Communications</b>			
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior to FY 2007 Cost</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 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	4.412	28.921	Dec-06	6.000	Dec-07	31.654	Dec-08		70.987	
EPS Design/Development Contract	TBD	TBD	0.000			158.839	Mar-08	188.459	Dec-08	Continuing	TBD	
Subtotal Product Development			304.006	28.921		164.839		220.113		Continuing	TBD	0.000
Remarks:												
(U) <u>Support</u>												
Technical Support	Various		0.000	1.933	Dec-06	3.601	Dec-07	3.601	Dec-08	Continuing	TBD	
Program Office Support	Various		1.616	3.129	Dec-06	4.095	Dec-07	4.035	Dec-08	Continuing	TBD	
Govt Furnished Property	Various	Various				5.000		10.000			15.000	
Subtotal Support			1.616	5.062		12.696		17.636		Continuing	TBD	0.000
Remarks:												
(U) <u>Test &amp; 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			305.622	33.983		177.535		237.749		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

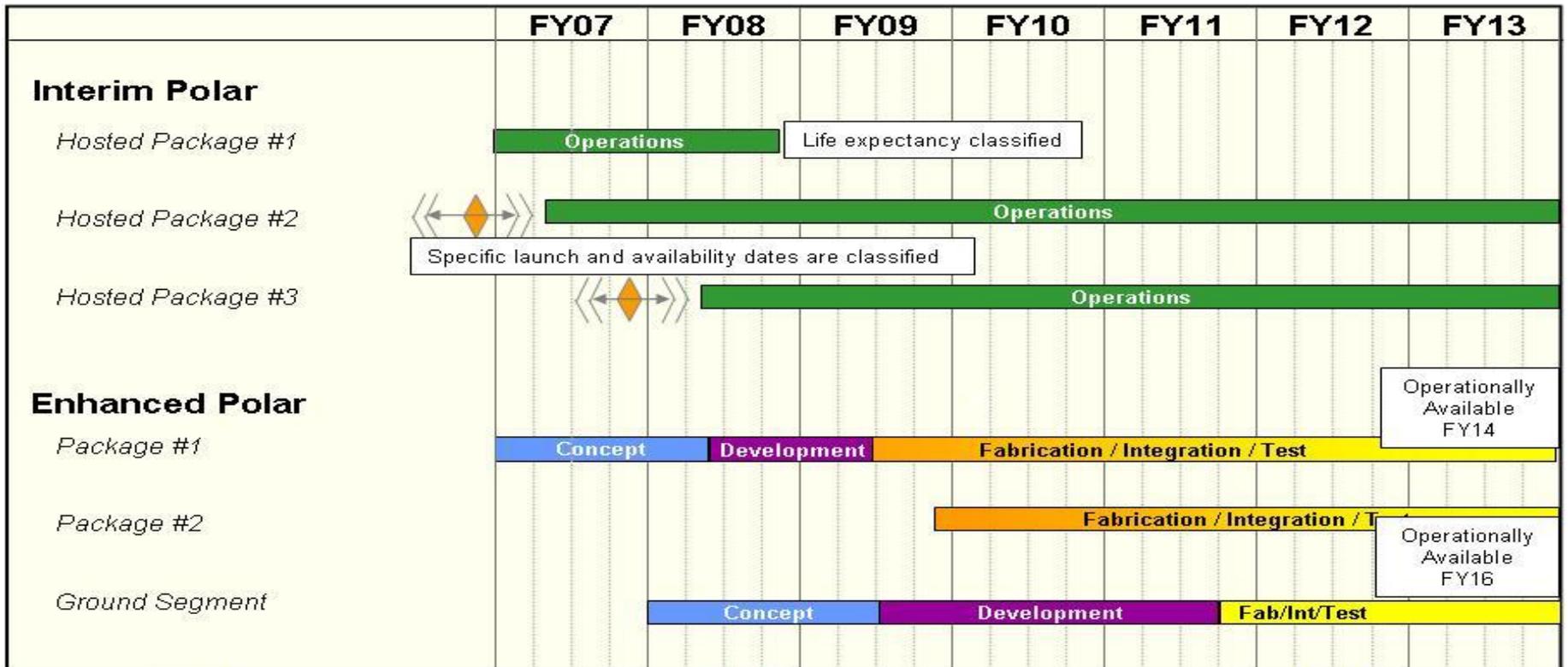
04 Advanced Component Development and Prototypes (ACD&P)

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PROJECT NUMBER AND TITLE

4052 Polar Satellite Communications



■ Concept activities     
 ■ Design / development     
 ■ Integration / test  
■ Production / fielding     
 ■ Operations / sustainment     
 △◇ Key events

Exhibit R-4a, RDT&E Schedule Detail

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PROJECT NUMBER AND TITLE

4052 Polar Satellite Communications

(U) Schedule Profile

FY 2007

FY 2008

FY 2009

(U) Begin design and development of Enhanced Polar packages

2Q

(U) Begin ground segment concept studies

1Q

(U) Begin fabrication of first Enhanced Polar package

2Q

(U) Begin design and development of the ground segment

2Q

(U) Begin fabrication of second Enhanced Polar package

4Q