

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2007
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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 2006 Actual	FY 2007 Estimate	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	6.028	35.470	178.754	244.127	267.385	178.581	116.001	65.951	Continuing	TBD
4052 Polar Satellite Communications	6.028	35.470	178.754	244.127	267.385	178.581	116.001	65.951	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.

Project 4052, Polar Satellite Communications, has previously funded (through FY05) 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. Two packages are on-orbit, and the final LDR package will be available in FY07. Two satellites with hosted packages are required to provide the necessary 24 hour coverage.

FY06 initiated requirements analyses and design trade studies for the next generation capability, known as the Enhanced Polar System (EPS), leading to a Defense Space Acquisition Board in May 2007. 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 Air Force has awarded Program Research and Development Announcement efforts to Boeing Space Systems and Northrop Grumman Space Technologies to assist in payload system definition and provide supporting data for the Department of Defense acquisition decision process. The revised Capability Development Document, Joint Requirements Oversight Council approved Sep 2006, is based on a two-package, hosted XDR program with operational availability in FY14 and FY16.

FY08 will complete the EPS package development and initiate the fabrication of the first hosted EPS package (EPS #1) and will begin concept definition for the associated ground segment.

The Polar MILSATCOM program is in Budget Activity 4, Advanced Component Development and Prototypes, based on the 30 Mar 95 USD(A&T) memorandum to pursue the interim hosted solution.

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2007

BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

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0603432F Polar MILSATCOM (Space)

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

	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	2.154	35.685	121.481	129.581
(U) Current PBR/President's Budget	6.028	35.470	178.754	244.127
(U) Total Adjustments	3.874	-0.215		
(U) Congressional Program Reductions		-0.080		
Congressional Rescissions		-0.135		
Congressional Increases				
Reprogrammings	4.000			
SBIR/STTR Transfer	-0.126			

(U) **Significant Program Changes:**

FY06 \$4M reprogramming funds two Program Research and Development Announcement (PRDA) study contracts for the EPS payload package. FY08-09 increase required to fully fund the EPS payload package development and integration into host spacecraft.

Exhibit R-2a, RDT&E Project Justification

DATE

February 2007

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		
Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	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	6.028	35.470	178.754	244.127	267.385	178.581	116.001	65.951	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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(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Conduct requirements analyses and design trade studies for Enhanced Polar packages	4.412	19.138	3.500	1.000
(U) Conduct design and development of Enhanced Polar packages		10.934	169.443	236.891
(U) Provide Program Office Support and other related support activities, including Systems Engineering and Integration	1.616	3.165	3.489	3.821
(U) Provide Technical Analysis		2.233	2.322	2.415
(U) Total Cost	6.028	35.470	178.754	244.127

Exhibit R-2a, RDT&E Project Justification

DATE
February 2007

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

	<u>FY 2006</u>	<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>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.

Under the direction of the Program Executive Officer for Space, the Enhanced Polar System (EPS) Program Office is developing the EPS Acquisition Strategy through studies and activities leading to a May 2007 Defense Space Acquisition Board for Key Decision Point A entry approval. After the completion of a successful Acquisition Strategy review and a 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.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis	DATE February 2007
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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
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<u>(U) Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2006 Cost</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</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>			299.594										299.594	
Classified	Classified													
EPS Requirement Analyses and Design Trade Studies	Various	Various		4.412	Apr-06	19.138	Dec-06	3.500	Dec-07	1.000	Dec-08		28.050	
EPS Design/Development Contract	TBD	TBD				10.934	Jul-07	169.443	Dec-07	236.891	Dec-08	Continuing	TBD	
Subtotal Product Development			299.594	4.412		30.072		172.943		237.891		Continuing	TBD	0.000
Remarks:														
<u>(U) Support</u>														
Technical Support	Various			0.000		2.233	Dec-06	2.322	Dec-07	2.415	Dec-08	Continuing	TBD	
Program Office Support	Various			1.616	Feb-06	3.165	Dec-06	3.489	Dec-07	3.821	Dec-08	Continuing	TBD	
Subtotal Support			0.000	1.616		5.398		5.811		6.236		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	0.000
Remarks:														
<u>(U) Management</u>														
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
<u>(U) Total Cost</u>			299.594	6.028		35.470		178.754		244.127		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2007

BUDGET ACTIVITY

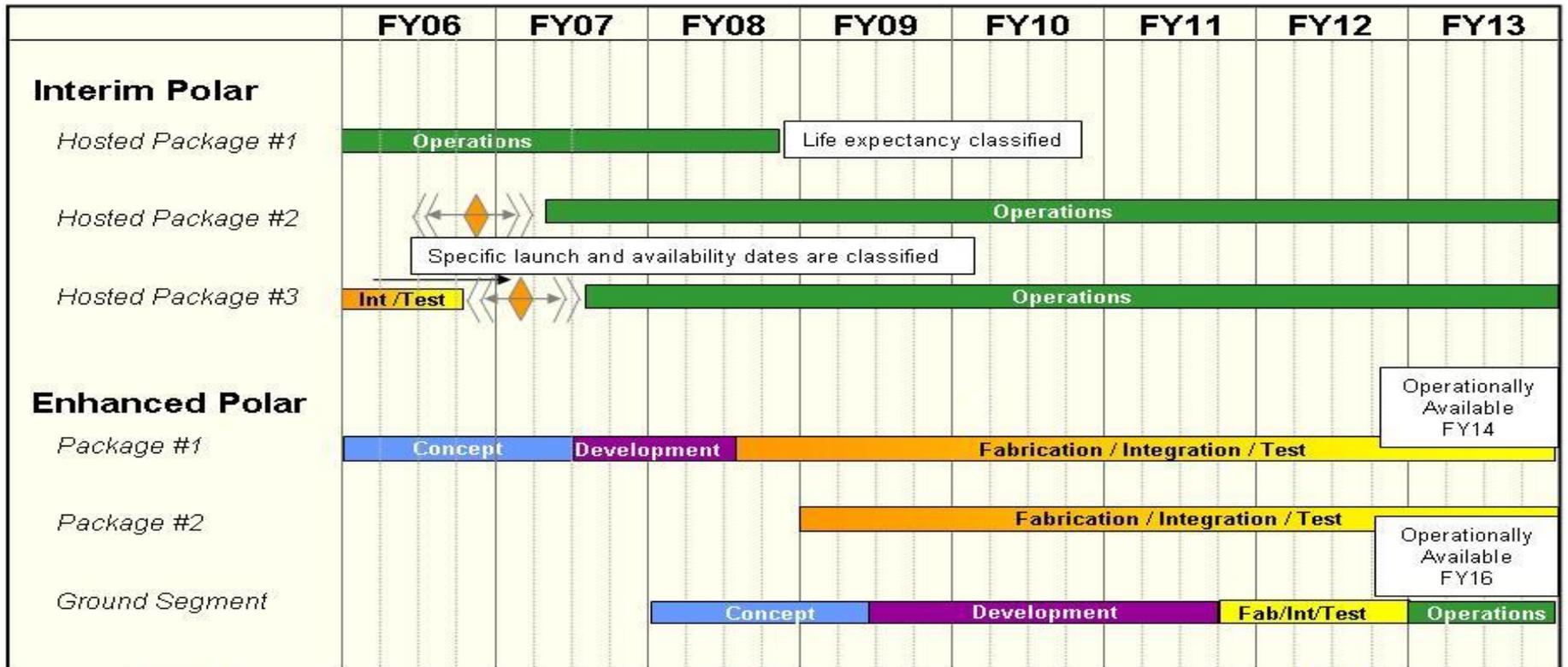
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PROJECT NUMBER AND TITLE

4052 Polar Satellite Communications



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

Exhibit R-4a, RDT&E Schedule Detail

DATE

February 2007

BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

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0603432F Polar MILSATCOM (Space)

PROJECT NUMBER AND TITLE

4052 Polar Satellite Communications

(U) Schedule Profile

	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Begin requirements analysis for Enhanced Polar packages	3Q			
(U) Begin design and development of Enhanced Polar packages		3Q		
(U) Begin ground segment concept studies			1Q	
(U) Begin fabrication of first Enhanced Polar package			3Q	
(U) Begin fabrication of second Enhanced Polar package				1Q
(U) Begin design and development of the ground segment				2Q