

## UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>04 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603430F Advanced (EHF MILSATCOM (Space)</b>					PROJECT <b>4050</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4050     Advanced MILSATCOM	89,824	244,135	548,398	516,866	345,019	274,653	161,493	72,095	68,001	2,495,588	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	2	
<p>This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.</p> <p>(U) <b><u>A. Mission Description</u></b>            Develop and acquire Advanced Extremely High Frequency (EHF) Military Satellite Communications (MILSATCOM) satellites and cryptography with necessary modifications to the mission control segment for survivable, jam-resistant, worldwide, secure communications for the strategic and tactical warfighter. Advanced EHF (AEHF) satellites will replenish the existing EHF system (Milstar) providing additional capability at decreased launch costs. This program is utilizing commercial technology to the maximum extent possible. The Joint Requirements Oversight Council (JROC) considered the AEHF 'Pathfinder' concept as mitigation to the Milstar Flight 3 loss. This concept implements the acceleration (Dec 2004 launch) of the first satellite, at ORD threshold capability, following software uploads after satellite 2 launch. Pathfinder, the first satellite, will be followed by the delivery of four additional fully capable AEHF satellites. The acquisition is via a sole source National Team approved by USD(AT&amp;L). Satellites 1 and 2 were funded with RDT&amp;E funds while satellites 3 through 5 will be funded with procurement funds.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>            (U) \$1,700                      Completed Advanced EHF technology validation            (U) \$29,391                    Completed Processing Subsystem Engineering Model Program            (U) \$37,490                    Began System Definition            (U) \$17,163                    Began Satellite Cryptographic Development            (U) \$864                        Continued AEHF Program Office Support Activities            (U) \$3,216                    Continued Joint Terminal Engineering Office (JTEO) Support            (U) \$89,824                    Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$184,125                  Complete System Definition to accelerate satellite 1 launch            (U) \$17,574                    Begin Engineering &amp; Manufacturing Development (EMD) of the AEHF satellites and Mission control Segment            (U) \$17,602                    Continue Satellite Cryptographic Development            (U) \$21,416                    Continue Program Office Support -Transition of Advanced EHF MILSATCOM Joint Program Office Support from Milstar PE 64479F            (U) \$3,418                     Continue JTEO Support</p>											
Project 4050			Page 1 of 6 Pages					Exhibit R-2 (PE 0603430F)			

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DATE

June 2001

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

**04 - Demonstration and Validation****0603430F Advanced (EHF MILSATCOM (Space)****4050**(U) **A. Mission Description Continued**(U) **FY 2001 (\$ in Thousands) Continued**

(U) \$244,135 Total

The following net transactions are not reflected in the FY01 Program Total: BTR = -\$4,442K and SBIR = -\$8,131K. These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.

(U) **FY 2002 (\$ in Thousands)**

(U) \$503,883 Continue EMD (design and parts) of the AEHF satellites and Mission Control Segment (MCS) and begin build of satellite 1, satellite 2, and the MCS

(U) \$18,650 Complete Satellite Cryptographic Development

(U) \$22,419 Continue AEHF Program Office Support Activities

(U) \$3,446 Continue JTEO Support

(U) \$548,398 Total

(U) **B. Budget Activity Justification**

This program is in Budget Activity 4, Research Category Demonstration and Validation, since it funds Advanced EHF technology validation and modeling.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	95,529	246,396	519,832	2,383,788
(U) Appropriated Value	97,066	246,396		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-763	-1,725		
b. Small Business Innovative Research	-3,527			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-2,572			
e. Rescissions	-380	-536		
(U) Adjustments to Budget Years Since FY 2001 PBR			28,566	
(U) Current Budget Submit/FY 2002 PBR	89,824	244,135	548,398	2,495,588

(U) **Significant Program Changes:**

FY02 funding increased to facilitate acceleration of Pathfinder.

Project 4050

Page 2 of 6 Pages

Exhibit R-2 (PE 0603430F)

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<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</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>Estimate</u>	<u>Complete</u>	
(U) Related Missile Proc:										
(U) PE 0303604, Advanced EHF Procurement	0	0	0	334,936	277,673	267,974	9,820	6,773	613,999	1,511,175
(U) PE 0303600F, AF Wideband 3080 (CCS-C)	0	0	5,429	5,635	8,402	2,222			0	21,688
(U) Related RDT&E:										
(U) PE 0603854F, BPAC 644870, AF Wideband 3600 (CCS-C), BA-4, R-49	0	11,394	13,319	24,386	46,519	25,838			0	121,456
(U) PE 0604479F, Milstar LDR/MDR Satellite Communications (space), BA-5, R-69	345,590	235,164	232,084	110,363	1,424	1,421			0	9,682,272
(U) PE 0303601F, MILSATCOM Terminals, BA-7, R-164										
<b>(U) E. Acquisition Strategy</b>										
The Advanced MILSATCOM is for the Advanced EHF (AEHF) program and is a sole source acquisition consisting of a National Team comprised of Lockheed Martin (prime integrator), TRW and Boeing. This team will perform the Engineering and Manufacturing Development leading to the production of five satellites and associated mission control ground capabilities under a firm fixed price contract. AEHF will incorporate improvements from Milstar and commercial SATCOM practices into the next generation EHF military communication satellite system.										
<b>(U) F. Schedule Profile</b>										
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>	

Project 4050
Page 3 of 6 Pages
Exhibit R-2 (PE 0603430F)

## UNCLASSIFIED

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<b>04 - Demonstration and Validation</b>					<b>0603430F Advanced (EHF MILSATCOM (Space)</b>					<b>4050</b>		
<b>(U) <u>F. Schedule Profile Continued</u></b>												
					<u>FY 2000</u>				<u>FY 2001</u>			
					1	2	3	4	1	2	3	4
(U) Award System Definition Contract					*							
(U) Processing Engineering Model Completion					*							
(U) Milestone II/III - DAB					X							
(U) Award EMD Contract					X							
(U) Satellite Cryptographic Completion					X							
(U) First Launch - (FY06)												
* = Completed Event					X = Planned Event							

Project 4050
Page 4 of 6 Pages
Exhibit R-2 (PE 0603430F)

## UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT		
04 - Demonstration and Validation				0603430F Advanced (EHF MILSATCOM (Space)					4050		
(U) A. Project Cost Breakdown (\$ in Thousands)											
				FY 2000		FY 2001		FY 2002			
(U) MILSATCOM Technology Validation Program				1,700		0					
(U) Processing Subsystem Engineering Model				29,391		0					
(U) Program Office Support				864		21,416		22,419			
(U) System Definition				37,490		184,125					
(U) Cryptographic Development				17,163		17,602		18,650			
(U) Satellite EMD				0		17,574		503,883			
(U) Joint Terminal Engineering Office (JTEO)				3,216		3,418		3,446			
(U) Total				89,824		244,135		548,398			
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
Contractor or Government		Contract Method/Type	Award or Obligation	Performing Activity	Project Office	Total Prior to FY 2000	Budget FY 2000	Budget FY 2001	Budget FY 2002	Budget to Complete	Total Program
Performing Activity		or Funding Vehicle	Date	EAC	EAC						
Product Development Organizations											
NSA		MIPR	Dec 99	39,571	39,571	0	17,163	17,602	18,650	0	53,415
JTEO		PR	Continuing	94,015	94,015	2,000	3,216	3,418	3,446	82,043	94,123
MIT/LL		MIPR	Feb 95	4,988	4,988	3,288	1,700	0	0	0	4,988
Hughes		CPFF	May 97	67,175	67,175	52,163	15,012	0	0	0	67,175
TRW		CPFF	May 97	62,083	62,083	47,704	14,379	0	0	0	62,083
Various		Various	95-01	N/A	N/A	66,659	0	0	0	0	66,659
Lockheed Martin		FFP	Oct 00	111,750	111,750	0	27,240	184,125	0	0	211,365
Hughes		FFP	Oct 00	10,250	10,250	0	10,250	0	0	0	10,250
EMD Contractor (National Team)		TBD	Aug 01	TBD	TBD	0	0	17,574	503,883	1,258,586	1,780,043
Support and Management Organizations											
Various		Various	Continuing	N/A	N/A	3,290	864	21,416	22,419	97,498	145,487
Project 4050											
Page 5 of 6 Pages							Exhibit R-3 (PE 0603430F)				

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BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT
<b>04 - Demonstration and Validation</b>				<b>0603430F Advanced (EHF MILSATCOM (Space)</b>				<b>4050</b>
(U) <u>Performing Organizations Continued:</u> <u>Test and Evaluation Organizations</u>								
(U) <u>Government Furnished Property:</u>								
	<u>Contract</u>	<u>Award or</u>						
	<u>Method/Type</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Item</u>	<u>or Funding</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
<u>Description</u>	<u>Vehicle</u>							<u>Program</u>
<u>Product Development Property</u>								
None								
<u>Support and Management Property</u>								
None								
<u>Test and Evaluation Property</u>								
None								
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
Subtotal Product Development				171,814	88,960	222,719	525,979	1,340,629
Subtotal Support and Management				3,290	864	21,416	22,419	97,498
Subtotal Test and Evaluation								
Total Project				175,104	89,824	244,135	548,398	1,438,127
								2,495,588

Project 4050

Page 6 of 6 Pages

Exhibit R-3 (PE 0603430F)