

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 04 - Demonstration and Validation	PE NUMBER AND TITLE 0603430F Advanced (EHF MILSATCOM (Space))	PROJECT 4050
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COST (\$ in Thousands)	FY 2001 Actual	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	229,763	479,659	825,783	617,688	538,196	216,779	160,318	504,629	3,837,743
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	2

Note: In FY03, the Advanced Extremely High Frequency program anticipates receiving \$19.0M from the Cost of War Transfer Account. These funds are not included in the FY03 Air Force baseline. Funding will be used to complete manufacturing development and qualify several families of new radiation-hardened parts to be used by all USAF programs.

(U) A. Mission Description

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, anti-jam, worldwide, secure communications for the strategic and tactical warfighter. Advanced EHF (AEHF) satellites will replenish the existing EHF system (Milstar) at much higher capacity and data rate capability with decreased launch costs. This program focuses on utilizing commercial technology to the maximum extent possible and will ensure technology development is sufficient for a medium launch lift vehicle. On 10 October 2001, a milestone B decision was approved by the Defense Acquisition Executive to enter the System Development and Demonstration phase. The program is a sole source acquisition to a contractor team comprised of Lockheed Martin (prime integrator) and TRW (provider of satellite payload). Satellites 1 and 2 will be funded with RDT&E funds and satellite 3 will be funded with procurement funds. AEHF is a cooperative program that includes three international partners: Canada, the United Kingdom, and The Netherlands

(U) FY 2001 (\$ in Thousands)

- (U) \$187,327 Completed System Definition**
- (U) \$17,602 Continued Satellite Cryptographic Development**
- (U) \$21,416 Continued Program Office Support -Transition of Advanced EHF MILSATCOM Joint Program Office Support from Milstar PE 64479F**
- (U) \$3,418 Continued Joint Terminal Engineering Office (JTEO) Support**
- (U) \$229,763 Total**

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04 - Demonstration and Validation	0603430F Advanced (EHF MILSATCOM (Space))	4050		
(U) <u>A. Mission Description Continued</u>				
(U) <u>FY 2002 (\$ in Thousands)</u>				
(U) \$420,468	Begin SDD (design and parts) of the AEHF satellites and Mission Control Segment (MCS) and begin build of satellite 1, satellite 2, and the MCS			
(U) \$30,745	Continue Satellite Cryptographic Development			
(U) \$25,000	Continue AEHF Program Office Support Activities			
(U) \$3,446	Continue JTEO Support			
(U) \$479,659	Total			
(U) <u>FY 2003 (\$ in Thousands)</u>				
(U) \$777,353	Continue SDD of the AEHF satellites and MCS and begin build of satellites 1 & 2 and the MCS			
(U) \$19,430	Continue Satellite Cryptographic Development			
(U) \$25,500	Continue AEHF Program Office Support Activities			
(U) \$3,500	Continue JTEO Support			
(U) \$825,783	Total			
(U) <u>B. Budget Activity Justification</u>				
This program is in Budget Activity 4, Research Category Demonstration and Validation, since it funds Advanced EHF technology validation and modeling.				
(U) <u>C. Program Change Summary (\$ in Thousands)</u>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	246,396	549,659	516,866	2,495,588
(U) Appropriated Value	246,396	479,659		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-2,260			
b. Small Business Innovative Research	-8,131			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-6,242			
e. Rescissions				
(U) Adjustments to Budget Years Since FY 2002 PBR			308,917	
(U) Current Budget Submit/FY 2003 PBR	229,763	479,659	825,783	3,837,743
Project 4050	Page 2 of 5 Pages			Exhibit R-2 (PE 0603430F)

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BUDGET ACTIVITY 04 - Demonstration and Validation				PE NUMBER AND TITLE 0603430F Advanced (EHF MILSATCOM (Space))				PROJECT 4050		
(U) C. Program Change Summary (\$ in Thousands) Continued										
(U) Significant Program Changes: FY03 funding increased to facilitate revised MS B acquisition strategy. Milestone B planning disclosed program cost increases above funding availability due to requirements growth. SecAF approved additional funding for Sats 1 and 2 and ground segment in the FYDP. SDD contract awarded in first quarter FY02										
(U) D. Other Program Funding Summary (\$ in Thousands)										
	<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>Complete</u>		
(U) Related Proc:										
(U) MPAF, PE 0303604F, Advanced EHF	0	0	94,523	389,985	0	0	0	753,115	1,237,623	
(U) OPAF, PE 03033600F Wideband Gapfiller System, Project #836780, CCS-C	0	0	5,597	8,357	2,204			0	16,158	
(U) E. Acquisition Strategy The Advanced MILSATCOM also known as the Advanced EHF (AEHF) program is a sole source acquisition to a contractor team comprised of Lockheed Martin (prime integrator) and TRW (provider of the satellite payload). This team will perform the System Development and Demonstration (SD&D) of three satellites under a firm fixed price contract and associated mission command and control ground capabilities under a Cost Plus Award Fee line item 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 communication satellite system.										
(U) F. Schedule Profile										
			<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>		
			1	2	3	4	1	2	3	
(U) Milestone B - DAB							*			
(U) Award SDD Contract							*			
(U) Satellite Cryptographic Completion (FY04)										
(U) System CDR									X	
(U) First Launch - (FY06)										
* = Completed Event X = Planned Event										
Project 4050			Page 3 of 5 Pages				Exhibit R-2 (PE 0603430F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
04 - Demonstration and Validation					0603430F Advanced (EHF MILSATCOM (Space))			4050		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	MILSATCOM Technology Validation Program					0				
(U)	Processing Subsystem Engineering Model					0				
(U)	Program Office Support					21,416		25,000		25,500
(U)	System Definition					187,327		0		
(U)	Cryptographic Development					17,602		30,745		19,430
(U)	Satellite SDD							420,468		777,353
(U)	Joint Terminal Engineering Office (JTEO)					3,418		3,446		3,500
(U)	Total					229,763		479,659		825,783
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
NSA	MIPR	Dec 99	96,542	96,542	17,090	17,602	30,745	19,430	11,675	96,542
JTEO	PR	Continuing	94,114	94,114	5,216	3,418	3,446	3,500	78,534	94,114
MIT/LL	MIPR	Feb 95	4,988	4,988	4,988	0	0	0	0	4,988
Hughes	CPFF	May 97	67,175	67,175	67,175	0	0	0	0	67,175
TRW	CPFF	May 97	62,083	62,083	62,083	0	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	225,011	225,011	37,684	187,327	0	0	0	225,011
Hughes	FFP	Oct 00	0	0	0	0	0	0	0	0
SDD Contractor (Contractor Team)	TBD	Aug 01	3,070,178	3,070,178	0	0	420,468	777,353	1,872,357	3,070,178

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(U) Performing Organizations Continued:										
<u>Support and Management Organizations</u>										
Various	Various	Continuing	N/A	N/A	4,033	21,416	25,000	25,500	75,044	150,993
<u>Test and Evaluation Organizations</u>										
(U) Government Furnished Property:										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</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>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</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>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					260,895	208,347	454,659	800,283	1,962,566	3,686,750
Subtotal Support and Management					4,033	21,416	25,000	25,500	75,044	150,993
Subtotal Test and Evaluation										
Total Project					264,928	229,763	479,659	825,783	2,037,610	3,837,743