

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303601F MILSATCOM Terminals	PROJECT 2487
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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
2487 MILSATCOM Terminals	16,016	40,431	72,712	125,932	159,464	171,562	152,527	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

Cost to Complete is TBD until Wideband and Protected Tactical, Broadcast, Strategic and Laser Communications terminals study is completed in July 02.

(U) A. Mission Description

The MILSATCOM Terminals program develops equipment enabling users to communicate via Milstar, Advanced Extremely High Frequency (AEHF), Ultra High Frequency (UHF), Wideband Gapfiller System (WGS), Defense Satellite Communication System (DSCS), and other military satellites, as well as commercial satellites, to support tactical Aerospace Expeditionary Force requirements and maintain essential strategic connectivity for nuclear forces. Program RDT&E currently supports the following efforts:

- 1) Concept development work to ensure high-capacity connectivity for tactical and strategic air forces and ground command and control components -- primarily assessment of commercial/military technological alternatives and continued development of an Air Force terminals roadmap.
- 2) Ground Multiband Terminal (GMT) development. GMT will replace Air Force Ground Mobile Force terminals with higher-capacity military communications to provide tactical ground forces with connectivity via the Ka-band Wideband Gapfiller System, DSCS, and commercial C- and Ku-band satellites to significantly increase throughput for inter- and intra-theater tactical force information such as air tasking orders, battle damage assessments, and reconnaissance data.
- 3) Family of Advanced Beyond-Line-of-Sight Terminals (FAB-T) development. FAB-T will develop robust, secure, survivable EHF voice and data satellite communications terminals for nuclear and conventional force users. FAB-T variants will provide ground and airborne command posts and other aircraft with connectivity to the Milstar, and AEHF satellites, while providing an open architecture terminal to support future spirals for the WGS system, EHF payloads on polar-orbiting and UHF Follow-on (UFO) satellites and Global Broadcast Service payloads on certain UFO satellites.
- 4) Initiate development of Wideband Tactical, Protected Tactical and Broadcast Terminal to operate with Advance Wideband System (AWS) and plan for the development of Strategic Terminals.
- 5) Initiate development of Laser Communication Terminals to operate with Advance Wideband System (AWS).

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07 - Operational System Development	0303601F MILSATCOM Terminals	2487
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$2,279	Continued MILSATCOM terminals support activities	
(U) \$1,563	Continued contractor test and operations support	
(U) \$3,574	Continued concept/prototype demo/MILSATCOM Terminals roadmap/SATCOM testing	
(U) \$5,600	Began Ground Multiband Terminal (GMT) development	
(U) \$3,000	Began Airborne Wideband Terminal (AWT) risk reduction	
(U) \$16,016	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$3,303	Continue concept/prototype demo/MILSATCOM Terminals roadmap/SATCOM testing	
(U) \$17,218	Continue Ground Multiband Terminal (GMT) development	
(U) \$19,910	Begin Family of Advanced Beyond-line-of-sight Terminals (FAB-T) development.	
(U) \$40,431	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$1,077	Continue concept/prototype demo/MILSATCOM Terminals roadmap/SATCOM testing	
(U) \$53,457	Continue Family of Advanced Beyond-line-of-sight Terminals (FAB-T) development	
(U) \$2,678	Continue Ground Multiband Terminal (GMT) development	
(U) \$6,500	Begin JSTARS development to assume ABCCC role	
(U) \$6,000	Begin initial development for Wideband Tactical, Protected Tactical and Broadcast Terminals and plan for Strategic Terminals.	
(U) \$3,000	Begin initial development for Laser Communication Terminals	
(U) \$72,712	Total	
(U) <u>B. Budget Activity Justification</u>		
This effort is funded in Budget Activity 7, Operational System Development, because some of its programs have completed Milestone C reviews and are in production.		
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							February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development				0303601F MILSATCOM Terminals			2487			
(U) C. Program Change Summary (\$ in Thousands)										
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		<u>Total Cost</u>		
(U)	Previous President's Budget			17,634	41,763	57,601		2,437,581		
(U)	Appropriated Value			17,797	41,763					
(U)	Adjustments to Appropriated Value									
	a. Congressional/General Reductions			-125						
	b. Small Business Innovative Research			-1,163						
	c. Omnibus or Other Above Threshold Reprogram									
	d. Below Threshold Reprogram			-453						
	e. Rescissions			-39						
(U)	Adjustments to Budget Years Since FY 2002 PBR			-1	-1,332	15,111				
(U)	Current Budget Submit/FY 2003 PBR			16,016	40,431	72,712		TBD		
(U) Significant Program Changes:										
<p>In the fall of 2000, the Airborne Battlefield Command and Control Center (ABCCC) mission was divested and platforms such as the AWACS and JSTARS picked up portions of the mission. The AITG program had \$6.5M budgeted in FY 03 for 3 B-kits, 1 A-kit and A-Kit non-recurring engineering for the ABCCC platform (EC-130E). These funds will now be used for JSTARS non-recurring engineering and A-kit development. Initial development of Wideband Tactical , Protected Tactical, Broadcast Terminals and Laser CommunicationTerminals to operate with Advance Wideband System (AWS). Other changes reflect funds reprogrammed for higher DoD priorities.</p>										
(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)	Aircraft Procurement, Air Force, WSC 119992 (Budget Activity 5, P-27 and P-61)* * (1)	26,942	44,946	35,364	38,776	30,811	40,937	74,237	Continuing	TBD
(U)	Other Procurement, Air Force, 'MILSATCOM Space', WSC 836780 (Budget Activity 3,	30,064	20,730	28,303	61,727	144,866	90,269	64,878	Continuing	TBD
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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303601F MILSATCOM Terminals			PROJECT 2487		
(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>	
P-61)* * (2)									
*See the exhibits for these procurement funds for more details on MILSATCOM terminals efforts for which development has been completed.									
NOTE: Related RDT&E costs for MILSATCOM satellite systems to which terminal development is linked can be found RDT&E Budget Item Justification Sheets for the following Program Elements (PEs):									
PE 0303110F Defense Satellite Communications System									
PE 0603430F Advanced EHF									
PE 0603432F Polar MILSATCOM (Space)									
PE 0603854F Wideband Gapfiller System (Space)									
PE 0604479F Milstar LDR/MDR Satellite Communications									
PE 0604240F B-2 RDT&E									
PE 0101113F B-52 RDT&E									
PE 0305207F RC-135 RDT&E									
PE 0207581F Joint STARS RDT&E									
* (1) Spares included.									
* (2) Spares not included									
(U) E. Acquisition Strategy									
The FAB-T contract is planned to be awarded in May 2002. Acquisition Strategy Panel (ASP) is scheduled for January 2002. This contract will initiate development of a family of common MILSATCOM terminals to work with next generation space segments including Wideband Gapfiller System (WGS), Advanced Wideband System (AWS), Advanced Polar and Advanced EHF (AEHF). In addition, will initiate development of Wideband Tactical, Protected Tactical, Broadcast and Laser Communication Terminals to operate with Advanced Wideband System (AWS).									
(U) F. Schedule Profile									
	<u>FY 2001</u>			<u>FY 2002</u>				<u>FY 2003</u>	
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BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development					0303601F MILSATCOM Terminals					2487				
(U) <u>F. Schedule Profile Continued</u>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) GMT Development			*											
(U) AWT Risk Reduction	*													
(U) FAB-T Development						X								
(U) JSTARS Development of ABCCC communications capability									X					
(U) Begin init dev of WB/Prot Tac & Broadcast Term and Strat Terminals											X			
(U) Begin init dev of Laser Communication Terminals											X			
* Completed event														
X Planned event														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0303601F MILSATCOM Terminals			2487				
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	MILSATCOM terminals support activities					2,279		0		0	
(U)	Contractor test and operations support					1,563		0			
(U)	Concept/Prototype Demo/MILSATCOM Terminals Roadmap/SATCOM testing					3,574		3,303		1,077	
(U)	Ground Multiband Terminal (GMT)					5,600		17,218		2,678	
(U)	Airborne Wideband Terminal risk reduction					3,000		0			
(U)	Family of Advanced Beyond-line-of-sight Terminals (FAB-T) development					0		19,910		53,457	
(U)	Development of ABCCC communications capability for Joint Stars									6,500	
(U)	Wideband Tactical Terminals, Protected Tactical Terminals and Broadcast Terminals									6,000	
(U)	Laser Communication Terminals									3,000	
(U)	Total					16,016		40,431		72,712	
(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</u>	<u>Performing Activity</u>	<u>Project Office</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>Performing Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Raytheon	FPIF/FFP	Jun 85	888,552	888,552	886,989	1,563	0	0	0	888,552
	Rockwell	CPIF	Aug 93	43,068	43,068	43,068	0	0		0	43,068
	ViaSat	C/FFP	Oct 95	3,076	3,076	3,076	0	0		0	3,076
	Harris	CPAF	Jun 01	23,096	23,096	0	5,600	14,268	1,461	1,767	23,096
	TBD (FAB-T contract)	CPAF	May 02	TBD	TBD	0		13,210	47,907	Continuing	TBD
	Miscellaneous	Various	Various	N/A	N/A	651,580	1,219	514		0	653,313
	ESC/JS	AF-616	N/A	N/A	N/A	0	0	0	6,500	0	6,500
	TBD (Wideband Tac. Protected Tac. Broadcast	TBD	TBD		N/A	0	0	0	3,800	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development				0303601F MILSATCOM Terminals				2487		
(U) <u>Performing Organizations Continued:</u>										
<u>Product Development Organizations</u>										
Terminals)										
TBD (Laser Communication	TBD	TBD	N/A	0	0	0	2,000	Continuing	TBD	
Terminals)										
TBD (MUOS)	TBD	TBD	N/A	0	0	0	0	69,235	69,235	
<u>Support and Management Organizations</u>										
MITRE	CPAF	Various	N/A	N/A	107,995	2,939	9,539	7,094	Continuing	TBD
Support Contractors - System	Various	Various	N/A	N/A	159,290	1,854	1,500	2,350	Continuing	TBD
Engineering & Technical Assistance										
Tecolote	Various	Various	N/A	N/A	2,308	705	800	900	Continuing	TBD
Miscellaneous	Various	Various	N/A	N/A	19,939	636	500	700	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
Wright-Labs	AF-616	N/A	N/A	N/A	23,103	1,500	100		0	24,703
Miscellaneous	Various	N/A	N/A	N/A	5,507	0	0		0	5,507
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</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>Subtotals</u>										
Subtotal Product Development					1,584,713	8,382	27,992	61,668	TBD	TBD
Subtotal Support and Management					289,532	6,134	12,339	11,044	TBD	TBD
Subtotal Test and Evaluation					28,610	1,500	100		0	30,210
Total Project					1,902,855	16,016	40,431	72,712	TBD	TBD