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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604479F MILSTAR LDR/MDR Sat Comm	PROJECT 5010
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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
5010 Milstar Sat Comm Sys	224,592	228,722	148,936	1,415	1,409	0	0	0	9,706,890
Quantity of RDT&E Articles	2	1	0	0	0	0	0	0	6

(U) **A. Mission Description**
 Milstar is a joint service program to develop and acquire extremely high frequency (EHF) satellites; a satellite mission control segment; and new or modified Army, Navy, and Air Force communication terminals for survivable, jam-resistant, worldwide, secure communications to strategic and tactical war fighters. Milstar I Satellites 1 and 2 have a low data rate (LDR) payload that supports strategic and tactical forces with emphasis on highly survivable, minimum essential communications. Milstar II Satellites 3 through 6 have both LDR and medium data rate (MDR) payloads with increased tactical capabilities, including higher data rates to mobile forces and nulling that will neutralize close-in enemy jammers. Satellite 3 did not reach its proper orbit and the satellite was placed in its final non-interference orbit and shutdown. Milstar satellite 4 was launched successfully on 27 February 2001 and satellite 5 was launched successfully on 15 January 2002. Milstar satellites 6 will launch in FY03. Milstar Terminals are funded under Program Element 0303601F.

(U) **FY 2001 (\$ in Thousands)**

(U) \$158,838 Milstar II

(U) \$0 Delivered, launched and performed on-orbit checkout and testing for Satellite 4

(U) \$0 Satellite 5 integration, test and delivery

(U) \$0 Satellite 6 integration and test

(U) \$0 Implemented ECPs as needed based on operational requirements

(U) \$32,103 Milstar I/II Satellite Engineering

(U) \$0 Satellites 4 and 5 technical launch and pre-launch support

(U) \$0 Continued Satellites 1, 2 and 4 on-orbit operations support

(U) \$0 Continued LDR and MDR technical support

(U) \$20,423 Communications Planning Element

(U) \$0 Continued ACMS software Build 2 incremental development

(U) \$0 Continued maintenance of fielded communications planning software

(U) \$0 Developed proposed web-based new technology system

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
05 - Engineering and Manufacturing Development	0604479F MILSTAR LDR/MDR Sat Comm	5010
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands) Continued</u>		
(U) \$13,228	Basic Program Office support	
(U) \$224,592	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$156,068	Milstar II contract effort includes Satellites 5 launch and on-orbit checkout and testing. Complete Satellite 6 factory test and integration. Also continue component integration support (including Mission Control System service life extension) and implementation of ECPs as operationally required.	
(U) \$38,830	Milstar I/II Satellite Engineering contract effort includes launch and pre-launch technical support for Satellites 5 and continued on-orbit operations support for Satellites 1, 2 and 4, as well as continued LDR and MDR technical support.	
(U) \$18,107	Communications Planning Element includes software development and maintenance.	
(U) \$0	ACMS development, testing, training and certification	
(U) \$0	MCPTi maintenance	
(U) \$4,600	Joint Integrated SATCOM Technology (JIST) development	
(U) \$11,117	Basic Program Office support	
(U) \$228,722	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$83,941	Milstar II contract effort includes Satellite 6 launch and on-orbit checkout and testing. Also continue component integration support (including Mission Control System service life extension) and implementation of ECPs as operationally required.	
(U) \$48,728	Milstar I/II Satellite Engineering contract effort includes launch and pre-launch technical support for Satellite 6 and continued on-orbit operations support for Satellites 1, 2, 4, and 5 as well as continued LDR and MDR technical support	
(U) \$8,216	Communications Planning Element	
(U) \$8,051	Program office Support	
(U) \$148,936	Total	
(U) <u>B. Budget Activity Justification</u>		
This program is in Budget Activity 5, Engineering and Manufacturing Development since it funds Milstar II development.		
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BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT						
05 - Engineering and Manufacturing Development		0604479F MILSTAR LDR/MDR Sat Comm		5010						
(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	235,164	232,084	110,363						
(U)	Appropriated Value	237,341	232,184							
(U)	Adjustments to Appropriated Value									
	a. Congressional/General Reductions	-1,661	-3,462							
	b. Small Business Innovative Research	-13,573								
	c. Omnibus or Other Above Threshold Reprogram									
	d. Below Threshold Reprogram	3,000								
	e. Rescissions	-515								
(U)	Adjustments to Budget Years Since FY 2002 PBR			38,573						
(U)	Current Budget Submit/FY 2003 PBR	224,592	228,722	148,936	9,706,890					
(U)	<u>Significant Program Changes:</u>									
	The FY03 adjustment funds increased contract costs due to cumulative slips from FY98 through FY01 in the Titan IV B launch schedule. Flight 3 failure caused an Acquisition Program Baseline schedule breach for MDR IOT&E and IOC II, and a performance breach of FOC. Program Deviation Report was sent to the Defense Acquisition Executive and final Acquisition Program Baseline update is being coordinated.									
(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)	Other APPN									
(U)	OPAF, PE 0303600F	0	0	5,597	8,357	2,204			0	16,158
	Wideband Gapfiller System, Project #836780, CCS-C									
(U)	Related RDT&E:									
(U)	RDT&E - AF, PE 0603854F,	9,547	17,060	18,013	41,208	20,621	14,845		0	121,294
	Wideband Gapfiller System, Project # 644870, CCS-C, BA-4, R-49									
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604479F MILSTAR LDR/MDR Sat Comm				PROJECT 5010			
(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)	RDT&E - AF, PE 0303601F, MILSATCOM Terminals, BA-7, R-164	16,016	40,431	72,712	125,932	159,464	171,562	152,527			
(U)	RDT&E - AF, PE 0603430F, Advanced EHF MILSATCOM, BA-4, R-39	229,763	479,659	825,783	617,688	538,196	216,779	160,318	504,629	3,837,743	
(U)	RDT&E - AF, PE 0603432F, Polar Satellite Communications Program (Polar Adjunct), BA-4, R-40	29,229	18,539	9,577	5,717	981			0	285,116	
(U) E. Acquisition Strategy											
Lockheed Martin was awarded a sole source contract to develop 6 Milstar protected communication satellites. The first two LDR satellites were launched in FY94 and FY95. Satellite 3 launch in FY99 was to provide the first LDR/MDR on-orbit capability, but the satellite did not reach its proper orbit due to a Centaur upper stage failure. Satellite 4 was launched successfully on 27 February 2001 and satellite 5 was launched successfully on 15 January 2002. The last LDR/MDR satellite 6 will be launched in FY03.											
(U) F. Schedule Profile											
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>		
				1	2	3	4	1	2	3	4
(U)	Deliver ACMS Build 2, Inc 1				*						
(U)	Deliver ACMS Build 2, Inc 2							X			
(U)	Satellite 4 Launch				*						
(U)	MDR IOT&E (TBD)										
(U)	IOC II (TBD)										
(U)	Satellite 5 Launch						*				
(U)	Satellite 6 Launch								X		
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604479F MILSTAR LDR/MDR Sat Comm			PROJECT 5010	
(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
(U)	FOC (TBD)							
	*=completed event x=planned event							
	Note: MDR IOT&E, IOC II, and FOC milestones are under review as a result of failure of satellite #3 to achieve operational orbit.							
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604479F MILSTAR LDR/MDR Sat Comm				5010		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		
(U)	Milstar II					158,838	156,068	83,941		
(U)	Milstar I/II Satellite Engineering					32,103	38,830	48,728		
(U)	Communications Planning Element					20,423	22,707	8,216		
(U)	Basic Program Office Support					13,228	11,117	8,051		
(U)	Total					224,592	228,722	148,936		
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</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 Organizations</u>										
LMSC (Milstar I) Sats 1,2,3L]	C/CPAF	Jun 83	4,727,752	4,727,752	4,727,752	0			0	4,727,752
LMSC (Milstar II) [Sats 3M,	SS/CPAF	Oct 92/Nov	3,901,743	3,901,743	3,537,433	143,489	142,307	77,339	1,175	3,901,743
4, 5, 6]		94								
LMSC (Satellite Engineering)	SS/CPAF	Sep 97	201,921	201,921	82,260	32,103	38,830	48,728	0	201,921
SPAWAR(ACMS)	SS/MIPR	Various	N/A	173,803	126,657	16,223	22,707	8,216	0	173,803
LINCOM	SS/CPAF	Various	N/A	38,481	30,022	3,227	3,466	1,766	0	38,481
Lincoln Lab	SS/MIPR	Various	N/A	34,952	29,719	1,516	2,000	1,667	0	34,902
Miscellaneous	Various	Various	N/A	260,648	234,339	14,806	8,295	3,169	39	260,648
<u>Support and Management Organizations</u>										
Aerospace	SS/CPFF/AF	Various	204,846	204,846	175,726	11,417	9,347	7,094	1,262	204,846
Miscellaneous	Various	Various	162,794	162,794	157,908	1,811	1,770	957	348	162,794
<u>Test and Evaluation Organizations</u>										
None.										
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BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
05 - Engineering and Manufacturing Development				0604479F MILSTAR LDR/MDR Sat Comm			5010			
(U) Government Furnished Property:										
<u>Item</u>	<u>Contract</u>	<u>Method/Type</u>	<u>Award or</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>or Funding</u>	<u>Obligation</u>	<u>Delivery</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>Vehicle</u>	<u>Date</u>	<u>Date</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					8,768,182	211,364	217,605	140,885	1,214	9,339,250
Subtotal Support and Management					333,634	13,228	11,117	8,051	1,610	367,640
Subtotal Test and Evaluation										
Total Project					9,101,816	224,592	228,722	148,936	2,824	9,706,890