

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 1999</b>
--	------------------------------

<b>BUDGET ACTIVITY</b> <b>5 - Engineering and Manufacturing Development</b>	<b>PE NUMBER AND TITLE</b> <b>0604479F Milstar LDR/MDR Sat Comm (Space)</b>	<b>PROJECT</b> <b>5010</b>
--	--	-------------------------------

COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
5010 Milstar Sat Comm Sys	609,676	546,509	361,308	225,757	108,616	52,537	1,466	1,465	0	9,540,386
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

**(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 warfighters. 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 3M-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 3M was originally a Milstar I satellite, but it is being retrofitted with a MDR payload to function as a Milstar II satellite.) Milstar Terminals are funded under Program Element 0303601F.

**UNCLASSIFIED**

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 1999</b>
BUDGET ACTIVITY	PE NUMBER AND TITLE	
<b>5 - Engineering and Manufacturing Development</b>	<b>0604479F Milstar LDR/MDR Sat Comm (Space)</b>	PROJECT <b>5010</b>
(U) <u>FY 1998</u>		
- (U) \$528,476	Milstar II	
- (U)	Completed Satellite 3M integration and test	
- (U)	Completed Satellite 4 LDR and MDR payload integration and test, and started satellite integration and test	
- (U)	Completed Satellite 5 LDR and MDR payload and bus component manufacturing	
- (U)	Started Satellite 5 LDR and MDR payload integration and test	
- (U)	Continued Satellite 6 LDR and MDR payload and bus manufacturing	
-- (U)	Continued Milstar component integration support	
- (U)	Implemented ECPs as needed based on operational requirements	
- (U)	Continued Milstar II MCS software upgrade for mission planning	
- (U)	Continued Milstar software support	
- (U)	Developed and fielded operator training equipment	
- (U) \$27,030	Milstar I/II Satellite Engineering	
- (U)	Continued Satellite 3 technical pre-launch support	
- (U)	Continued Satellites 1 and 2 on-orbit operations support	
- (U)	Continued LDR and MDR technical support	
- (U) \$22,782	Automated Communications Management System	
- (U)	Delivered software build 1, increment 2	
-- (U)	Continued software build 1, increment 3	
-- (U)	Started software build 2 requirements development	
- (U) \$31,388	Basic Program Office support	
-		
- (U)\$609,676	Total	

**UNCLASSIFIED**

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 1999</b>
--	------------------------------

<b>BUDGET ACTIVITY</b> <b>5 - Engineering and Manufacturing Development</b>	<b>PE NUMBER AND TITLE</b> <b>0604479F Milstar LDR/MDR Sat Comm (Space)</b>	<b>PROJECT</b> <b>5010</b>
--	--	-------------------------------

- (U) FY 1999
- (U) \$443,390 Milstar II
- (U) Satellite 3M launch, perform on-orbit checkout, and begin on-orbit testing
- (U) Complete Satellite 4 integration and test
- (U) Complete Satellite 5 LDR and MDR payload integration and test, and start satellite integration and test
- (U) Continue Satellite 6 LDR and MDR payload and bus manufacturing
- (U) Continue Milstar component integration support
- (U) Implement ECPs as needed based on operational requirements
- (U) Continue Milstar II MCS software upgrade for mission planning
- (U) .Continue Milstar software support
- (U) \$25,852 Milstar I/II Satellite Engineering
- (U) Satellites 3 and 4 technical launch and pre-launch support
- (U) Continue Satellites 1, 2, and 3 on-orbit operations support
- (U) Continue LDR and MDR technical support
- (U) \$28,177 Automated Communications Management System
- (U) Complete software build 1, increment 3
- (U) Continue software build 2 development
- (U) \$28,461 Basic Program Office support
- (U) \$20,629 Identified as a source for SBIR
- (U) \$546,509 Total

**UNCLASSIFIED**

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 1999</b>
--	------------------------------

BUDGET ACTIVITY <b>5 - Engineering and Manufacturing Development</b>	PE NUMBER AND TITLE <b>0604479F Milstar LDR/MDR Sat Comm (Space)</b>	PROJECT <b>5010</b>
---	---	------------------------

(U) FY 2000

- (U) \$295,596 Milstar II
- (U) Complete Satellite 4 delivery
- (U) Satellite 4 launch, perform on-orbit checkout, and begin on-orbit testing
- (U) Complete Satellite 5 integration, test, and deliver
- (U) Complete Satellite 6 LDR and MDR payload integration and test, and start satellite integration and test
- (U) Continue Milstar component integration support
- (U) Implement ECPs as needed based on operational requirements
- (U) Continue Milstar II MCS software upgrade for mission planning
- (U) Continue Milstar software support
- (U) \$25,000 Milstar I/II Satellite Engineering
- (U) Satellites 4 and 5 technical launch and pre-launch support
- (U) Continue Satellites 1, 2, 3 and 4 on-orbit operations support
- (U) Continue LDR and MDR technical support
- (U) \$12,135 Automated Communications Management System
- (U) Continue software build 2 development
- (U) Continue maintenance of fielded software build 1
- (U) \$28,577 Basic Program Office support
- (U) \$361,308 Total

UNCLASSIFIED

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 1999</b>
BUDGET ACTIVITY <b>5 - Engineering and Manufacturing Development</b>	PE NUMBER AND TITLE <b>0604479F Milstar LDR/MDR Sat Comm (Space)</b>	PROJECT <b>5010</b>

(U) FY 2001

- (U)\$179,673 Milstar II
- (U) Satellite 5 launch, perform on-orbit checkout, and begin on-orbit testing
- (U) Complete Satellite 6 integration, test and deliver
- (U) Continue Milstar component integration support
- (U) Implement ECPs as needed based on operational requirements
- (U) Continue Milstar software support
- (U) \$25,000 Milstar I/II Satellite Engineering
- (U) Satellites 5 and 6 technical launch and pre-launch support
- (U) Continue Satellites 1, 2, 3, 4 and 5 on-orbit operations support
- (U) Continue LDR and MDR technical support
- (U) \$8,759 Automated Communications Management System
- (U) Continue software build 2 development
- (U) Continue maintenance of fielded software
- (U) \$12,325 Basic Program Office support
- (U)\$225,757 Total

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

This program is in Budget Activity 5, Engineering and Manufacturing Development since it funds Milstar II development.

UNCLASSIFIED

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>						DATE <b>February 1999</b>				
BUDGET ACTIVITY <b>5 - Engineering and Manufacturing Development</b>			PE NUMBER AND TITLE <b>0604479F Milstar LDR/MDR Sat Comm (Space)</b>			PROJECT <b>5010</b>				
<b>(U) C. <u>Program Change Summary (\$ in Thousands)</u></b>										
	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total</u>					
(U) Previous President's Budget (FY 1999 PB)	628,027	550,940	340,189	181,854	9,689,312					
(U) Appropriated Value	676,690	550,940								
(U) Adjustments to Appropriated Value										
a. Congressional General Reductions	-27,829	-4,431								
b. SBIR	-20,953									
c. Omnibus or Above Threshold Reprogramming	-10,506									
d. Below Threshold Reprogramming (BTR)	-7726									
e. Rescissions										
(U) Adjustments to Budget Years Since FY 1999 PB			21,119	43,903						
(U) Current Budget Submit/FY 2000 PB	609,676	546,509	361,308	225,757	9,540,386					
.										
(U) Significant Program Changes: 21.1M FY00 and 43.9M FY01 funding increases maintain Satellites 3-6 baseline launch schedules and funds system test tools and engineering support required to maintain low risk development and test program.										
FY99: \$20,629 identified as a source for SBIR										
<b>(U) D. <u>Other Program Funding Summary (\$ in Thousands)</u></b>										
	<u>FY 1998</u>	<u>FY 1999</u>	<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>To Comp</u>	<u>Total</u>
(U) Other Procurement, BP 83, Electronics and Telecommunications Equipment, Line Item P-69*	4,036	3,963	4,224	5,875	547	428	400	400	Cont	TBD
* PE 33601F (Other Procurement) funds Milstar AF-developed ground and airborne Command Post Terminals. PE 33601F also funds various AF MILSATCOM terminals.										
<b>(U) <u>Related RDT&amp;E:</u></b>										
(U) PE 0303601F, MILSATCOM Terminals										
(U) PE 0603430F, Advanced MILSATCOM										
(U) PE 0604577N, EHF Satellite Communications										
(U) PE 0603432F, Polar Satellite Communications Program (Polar Adjunct)										
Project 5010			Page 6 of 10 Pages			Exhibit R-2 (PE 0604479F)				

DATE  
**February 1999**

BUDGET ACTIVITY  
**5 - Engineering and Manufacturing Development**

PE NUMBER AND TITLE  
**0604479F Milstar LDR/MDR Sat Comm (Space)**

--

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 1999</b>
--	------------------------------

<b>BUDGET ACTIVITY</b> <b>5 - Engineering and Manufacturing Development</b>	<b>PE NUMBER AND TITLE</b> <b>0604479F Milstar LDR/MDR Sat Comm (Space)</b>	<b>PROJECT</b> <b>5010</b>
--	--	-------------------------------

**(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 and the last 4 LDR/MDR satellites will be launched in FY99, 00, 01, and 02.

**(U) F. Schedule Profile**

	<u>FY 1998</u>				<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) Milstar II (LDR/MDR)																
(U) Complete Sat 3M Integ and Test				*												
(U) Deliver ACMS Build 1, Inc 2			*													
(U) Satellite 3M Launch						x										
(U) Satellite 4 Launch										x						
(U) MDR IOT&E										x						
(U) IOC II													x			
(U) Satellite 5 Launch													x			
(U) Satellite 6 Launch - 1QFY02																
(U) FOC- 1QFY05																

\*=completed event  
 x=planned event

UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 1999	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604479F Milstar LDR/MDR Sat Comm (Space)					PROJECT 5010	
<b>(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u></b>											
					<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
(U) Milstar II					528,476	443,390	295,596	179,673			
(U) Milstar I/II Satellite Engineering					27,030	25,852	25,000	25,000			
(U) Automated Communications Management System					22,782	28,177	12,135	8,759			
(U) Basic Program Office support					31,388	28,461	28,577	12,325			
(U) Identified as a source for SBIR						20,629					
(U) Total					609,676	546,509	361,308	225,757			
Note: The Project cost breakdown has been revised from the FY99 PB submission to align budget estimates with direct contract cost reporting. ACMS funding is broken out separately from Systems Engineering costs. Remaining Systems Engineering funding was combined with Milstar I & II Satellite costs. Mission Support costs are now reported as Satellite Engineering.											
<b>(U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>											
<b>Performing Organizations:</b>											
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1998	Budget FY 1998	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
Identified as a source for SBIR							20,629				
20,629											
<u>Product Development Organizations</u>											
LMSC (Milstar I) [Sats 1,2,3L]	C/CPAF	Jun 83	2,181,587*	2,181,587*	4,727,752	0	0	0	0	0	4,727,752
LMSC (Milstar II) [Sats 3M, 4, 5, 6]	SS/CPAF	Oct 92/ Nov 94	3,364,483	3,364,483	2,376,400	499,284	424,153	266,129	155,738	51,647	3,773,351
LMSC (Satellite Engineering)	SS/CPAF	Sep 97	50,823	50,823	0	27,030	25,852	25,000	25,000	50,000	152,882
SPAWAR (ACMS)	SS/MIPR	Various			52,600	22,782	28,177	12,135	8,759	5,900	130,353
Project 5010											

**UNCLASSIFIED**

<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>										DATE <b>February 1999</b>	
BUDGET ACTIVITY <b>5 - Engineering and Manufacturing Development</b>					PE NUMBER AND TITLE <b>0604479F Milstar LDR/MDR Sat Comm (Space)</b>					PROJECT <b>5010</b>	
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1998	Budget FY 1998	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
LINCOM	SS/CPAF	Various			18,692	4,122	3,903	3,955	2,495	3,804	36,971
Lincoln Lab	SS/MIPR	Various			20,489	4,000	3,800	3,800	1,000	1,000	34,089
Miscellaneous	Various	Various			190,719	21,070	11,534	21,712	20,439	32,292	297,766
<u>Support and Management Organizations</u>											
Aerospace	SS/CPFF/AF	Various			112,770	21,789	20,319	20,155	8,250	13,200	196,483
Miscellaneous	Various	Various			133,630	9,599	8,142	8,422	4,076	6,241	170,110
<u>Test and Evaluation Organizations</u>											
None.											

**UNCLASSIFIED**

<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>							DATE <b>February 1999</b>	
BUDGET ACTIVITY			PE NUMBER AND TITLE				PROJECT	
<b>5 - Engineering and Manufacturing Development</b>			<b>0604479F Milstar LDR/MDR Sat Comm (Space)</b>				<b>5010</b>	
<b>Government Furnished Property:</b>								
<u>Product Development Property</u> None.								
<u>Support and Management Property</u> None.								
<u>Test and Evaluation Property</u> None.								
Identified as a source for SBIR						20,629		20,629
Subtotal Product Development	7,386,652	578,288	497,419	332,731	213,431	144,643		9,153,164
Subtotal Support and Management	246,400	31,388	28,461	28,577	12,326	19,441		366,593
Subtotal Test and Evaluation	0	0	0	0	0	0		0
<b>Total Project</b>	<b>7,633,052</b>	<b>609,676</b>	<b>546,509</b>	<b>361,308</b>	<b>225,757</b>	<b>164,084</b>		<b>9,540,386</b>
<p>* Due to the overrun on the Milstar I contract, an Over Target Baseline (OTB) was established in Jan 91 to provide a credible cost performance baseline for the remaining contractual effort. The EAC reflects the unclassified cost of remaining work scheduled after the Jan 91 rebaseline. The total program value includes all unclassified prior funding (approx \$4 billion in FY82 - 92) and all unclassified fees &amp; incentives.</p>								
Project 5010			Page 10 of 10 Pages			Exhibit R-3 (PE 0604479F)		