

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2000

BUDGET ACTIVITY

04 - Demonstration and Validation

PE NUMBER AND TITLE

0603854F Wideband MILSATCOM (Space)

COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	65,242	50,277	134,029	128,814	52,036	96,570	304,239	1,906,737	2,859,821
642679 Global Broadcast Service (GBS) Phases 1 and 2	64,573	45,367	30,206	32,566	25,529	16,973	15,640	40,237	392,968
644811 Wideband Gapfiller	669	4,910	92,323	82,948	2,107	1,637	1,937	0	186,531
644812 Advanced Wideband	0	0	0	0	0	31,360	260,762	1,866,500	2,158,622
644870 Command & Control System Consolidated (CCSC)	0	0	11,500	13,300	24,400	46,600	25,900	0	121,700
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

Notes:

1. The GBS program cost and schedule are currently being rebaselined due to additional technical issues which occurred since the 6 month slip identified in the Feb 1999 SAR.
2. BPAC 644870 has been added to this PE for MILSATCOM Command and Control System - Consolidated (CCS-C) which is a FY01 new start effort.

(U) **A. Mission Description**

Provide DoD with high data rate (wideband) MILSATCOM services in accordance with the Joint Requirements Oversight Council (JROC), Joint Space Management Board approved MILSATCOM Architecture (Aug 96), and the MILSATCOM Capstone Requirements Document (CRD) approved by the JROC in Oct 97.

Global Broadcast Service (GBS) will provide efficient, high data rate broadcast capability between many distributed information sources and warfighters who receive the broadcast directly on small, inexpensive user terminals. Broadcast data includes digitized imagery, logistics and weather data, maps, operational orders and video. The GBS program was established as a three-phase program that was approved by the JROC in late 1995. Phase 1 was started in 1996 and uses commercial satellite leases to provide a Continental United States (CONUS)-based testbed for requirements definition and operational concept refinement. Phase 2 provides a near worldwide, limited capability at military frequencies hosted on the last three Navy Ultra High Frequency follow-on satellites. GBS Phase 2 space segment was complete with UFO 10 launch in Nov 1999. Phase 3 will provide a global capability integrated into a conceptual Advanced Wideband System. The Air Force was designated executive agent for the GBS Program by USD(A&T) on 27 Mar 1996.

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(U) **A. Mission Description Continued**

The JROC approved the OSD-led transition to implement the MILSATCOM architecture in Sept 97. The transition includes 3 Wideband Gapfiller satellites to be launched in 2004/5. The Wideband Gapfiller System is intended to minimize the probability of a gap in wideband service between current and follow-on systems, and to incorporate the best commercial technology and practices available at the time. A worldwide constellation of Advanced Wideband satellites with launches starting in 2008 will replace current wideband systems and incorporate the latest in commercial capabilities. Both programs will include a broadcast space segment (GBS Phase 2 compatible, on Wideband Gapfiller; GBS Phase 3 on Advanced Wideband). The Command and Control System-Colsolidated (CCS-C) provides an integrated commercial-based command and control system for the MILSATCOM satellite constellations. This is a new start in FY01.

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

(U) Funding is in Budget Activity 4, Demonstration and Validation, since it supports Global Broadcast Service technology demonstration and validation.

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

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2000 PBR)	69,376	53,344	97,756	2,357,206
(U) Appropriated Value	70,147	50,344		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-771	-67		
b. Small Business Innovative Research	-398			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	1,959			
e. Rescissions	-5,695			
f. Other				
(U) Adjustments to Budget Years Since FY 2000 PBR			36,273	
(U) Current Budget Submit/FY 2001 PBR	65,242	50,277	134,029	2,859,821

(U) **Significant Program Changes:**

(U) \$1,959K FY99 reprogramming funded receive suites supporting transition from the Bosnia Command and Control Augmentation to GBS.

(U) \$36,273K FY01 increase fully funded WGS non-recurring engineering efforts.

(U) FY02-05 funding for one WGS satellite was realigned from RDT&E to the Missile Procurement appropriation.

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BUDGET ACTIVITY 04 - Demonstration and Validation	PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)
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- (U) C. Program Change Summary (\$ in Thousands) Continued
- (U) Significant Program Changes Continued:
(U) The total PE cost increased due to the above adjustments as well as, revised outyear estimates for the Advanced Wideband System.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2000			
BUDGET ACTIVITY 04 - Demonstration and Validation				PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)				PROJECT 642679			
COST (\$ in Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost	
642679	Global Broadcast Service (GBS) Phases 1 and 2	64,573	45,367	30,206	32,566	25,529	16,973	15,640	40,237	392,968	
<p>Note: The GBS program cost and schedule are currently being re-baselined due to additional technical issues which occurred since the 6 month slip identified in the Feb 99 SAR.</p> <p>(U) <u>A. Mission Description</u> Acquires phases 1 and 2 of the GBS program to provide DoD with efficient, high data rate connectivity to many distributed information sources and warfighters who will receive the broadcast directly on small, inexpensive user terminals in accordance with the GBS Operational Requirements Document (ORD) validated by the Joint Requirements Oversight Council in Apr 1995. Broadcast data includes digitized imagery, logistics and weather data, maps, operational orders (e.g., Air Tasking Order), and video. Phase 1 is a single channel leased through FY98 for initial testing and concept exploration. Phase 2 is the initial ground infrastructure for broadcast management, uplink and receive equipment. The GBS Phase 2 space segment was complete with the UFO 10 launch in Nov 1999. This ground infrastructure works with GBS packages hosted on three Navy UHF Follow-on (UFO) satellites providing near-worldwide service.</p> <p>(U) <u>FY 1999 (\$ in Thousands)</u> (U) \$33,187 System Development and Test (U) \$6,652 Initial Comm Connectivity/Interface, CONUS Transponder Lease (U) \$17,299 Phase 2 Government System Integration (U) \$654 Field Survey and Integration (U) \$6,000 Navy Terminals (U) \$781 System Test & Evaluation Support (U) \$64,573 Total</p> <p>(U) <u>FY 2000 (\$ in Thousands)</u> (U) \$13,103 System Development and Test (U) \$6,743 Initial Comm Connectivity/Interface, CONUS Transponder Lease (U) \$15,416 Phase 2 Government System Integration (U) \$109 Field Survey and Integration (U) \$6,000 Navy Terminals (U) \$782 System Test & Evaluation Support (U) \$3,214 Joint Terminals Engineering Office (JTEO) Support</p>											
Project 642679				Page 4 of 20 Pages				Exhibit R-2A (PE 0603854F)			

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<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2000 (\$ in Thousands) Continued</u></p> <p>(U) \$45,367 Total</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$12,968 System Development and Test</p> <p>(U) \$3,555 Initial Comm Connectivity/Interface, CONUS Trasnponder Lease</p> <p>(U) \$7,106 Phase 2 Government System Integration</p> <p>(U) \$6,000 Navy Terminals</p> <p>(U) \$577 System Test and Evaluation Support</p> <p>(U) \$30,206 Total</p> <p>(U) <u>B. Project Change Summary</u></p> <p>(U) \$1,959K FY99 reprogramming funded receive suites supporting transition from the Bosnia Command and Control Augmentation to GBS</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 65%;"></th> <th style="width: 5%;"><u>FY 1999</u></th> <th style="width: 5%;"><u>FY 2000</u></th> <th style="width: 5%;"><u>FY 2001</u></th> <th style="width: 5%;"><u>FY 2002</u></th> <th style="width: 5%;"><u>FY 2003</u></th> <th style="width: 5%;"><u>FY 2004</u></th> <th style="width: 5%;"><u>FY 2005</u></th> <th style="width: 5%;"><u>Cost to</u></th> <th style="width: 5%;"><u>Total Cost</u></th> </tr> <tr> <th></th> <th style="text-align: center;"><u>Actual</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) Related RDT&E: None</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Other APPN</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Air Force GBS receive terminals. Included in BPAC 836780, line P-67 -- PE 33601, Milstar Satellite Comm Sys, Other Procurement, AF</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Navy SATCOM Ship Terminal Programs</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Army Ground Terminal Programs</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Navy UFO Program</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) ARPA-DISA Bosnia</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>				<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>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 RDT&E: None										(U) Other APPN										(U) Air Force GBS receive terminals. Included in BPAC 836780, line P-67 -- PE 33601, Milstar Satellite Comm Sys, Other Procurement, AF										(U) Navy SATCOM Ship Terminal Programs										(U) Army Ground Terminal Programs										(U) Navy UFO Program										(U) ARPA-DISA Bosnia									
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BUDGET ACTIVITY 04 - Demonstration and Validation	PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)	PROJECT 642679
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(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<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>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>	

Command and Control Augmentation Program (BC2A) and Joint Broadcast Service (JBS)									
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(U) ARPA Battlefield Awareness and Data Dissemination (BADD) Advanced Concept Technical Demonstration (ACTD)									
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(U) DISA Long Haul Communications									
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(U) **D. Acquisition Strategy**
 (U) Evolutionary acquisition approach making maximum use of commercial technology and acquisition practices. Single integration contractor with total system performance responsibility. (Navy providing space segment for Phase 2 and adapting common receive terminal equipments for shipboard installation.)

(U) **E. Schedule Profile**

	<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Phase 1 (96-98)												
(U) Joint Warfighter Interoperability Demos (JWID)												
(U) Lease Commercial Transponder	*	*	*	*	*	X	X	X	X	X	X	X
(U) Phase 2 (98-00+)												
(U) Aquisition Milestone I/II (Nov 98)	*											
(U) Launch UFO #8 (Mar 98)	*											
(U) Launch UFO #9 (Oct 98)	*											
(U) Launch UFO #10 (Nov 99)					*							
(U) Initial Operational Capability									X			
(U) Milestone III									X			

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BUDGET ACTIVITY 04 - Demonstration and Validation	PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)	PROJECT 642679
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(U) **E. Schedule Profile Continued**

<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
1	2	3	4	1	2	3	4	1	2	3	4

* = Completed Event
X = Planned Event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2000				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
04 - Demonstration and Validation				0603854F Wideband MILSATCOM (Space)				642679			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
(U)	System Development and Test					33,187	13,103	12,968			
(U)	Communication Connectivity/Interface					6,652	6,743	3,555			
(U)	Phase 2 Government System Integration					17,299	15,416	7,106			
(U)	Field Survey and Integration					654	109	0			
(U)	Navy Terminals					6,000	6,000	6,000			
(U)	System Test & Eval Support					781	782	577			
(U)	JTEO Support					0	3,214	0			
(U)	Total					64,573	45,367	30,206			
(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 1999</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Raytheon Sys Co.	CPAF	18 Nov 97	124,782	124,782	58,855	33,187	19,103	12,968	44,424	168,537
	Government/Various	Various	Various	N/A	N/A	34,601	19,221	12,844	10,794	36,346	113,806
	<u>Support and Management Organizations</u>										
	Various	Various	Various	N/A	N/A	28,314	11,384	12,638	5,867	49,409	107,612
	<u>Test and Evaluation Organizations</u>										
	Support for Development & Operational Test	Various	Various	N/A	N/A	107	781	782	577	766	3,013
(U) Government Furnished Property:											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 1999</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2000	
BUDGET ACTIVITY 04 - Demonstration and Validation				PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)			PROJECT 642679	
(U) Government Furnished Property Continued:								
	<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>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>
<u>Product Development Property</u>								
TBD								
<u>Support and Management Property</u>								
TBD								
<u>Test and Evaluation Property</u>								
TBD								
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>				<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>
Subtotal Product Development				93,456	52,408	31,947	23,762	80,770
Subtotal Support and Management				28,314	11,384	12,638	5,867	49,409
Subtotal Test and Evaluation				107	781	782	577	766
Total Project				121,877	64,573	45,367	30,206	130,945
								<u>Total</u>
								<u>Program</u>
								282,343
								107,612
								3,013
								392,968

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BUDGET ACTIVITY 04 - Demonstration and Validation				PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)				PROJECT 644811	
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
644811 Wideband Gapfiller	669	4,910	92,323	82,948	2,107	1,637	1,937	0	186,531
<p>(U) <u>A. Mission Description</u> Provide wideband communications to continue the Defense Satellite Communications System (DSCS) X-Band connectivity. Wideband Gapfiller will also provide a new point-to-point service using the Ka-band frequency, and will host a broadcast capability similar to GBS Phase 2. Launches are scheduled for FY2004/5 and the three satellite constellation will use maximum commercial practices and technology.</p> <p>(U) <u>FY 1999 (\$ in Thousands)</u> (U) \$669 Conduct Studies to Investigate International Cooperation (U) \$669 Total</p> <p>(U) <u>FY 2000 (\$ in Thousands)</u> (U) \$4,910 Began Pre-Engineering and Manufacturing Development (EMD) (U) \$4,910 Total</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$82,536 Begin EMD (Satellite Design) following competitive contract award (U) \$3,310 JTEO Support (U) \$6,477 Program Support (U) \$92,323 Total</p> <p>(U) <u>B. Project Change Summary</u> (U) \$36,273K FY01 increase funded WGS non-recurring engineering efforts.</p> <p>(U) FY02-FY05 funding for one WGS satellite was realigned from RDT&E to the Missile Procurement appropriation.</p>									
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(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<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>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) AF Wideband 3020 Procurement, PE 33600F	0	0	25,736	391,753	205,720	50,898	12,217	154,252	840,576
(U) AF Wideband 3080 Procurement (CCS-C), PE 33600F	0	0	4,852	5,411	5,503	8,115	2,209	0	26,090
(U) AF Wideband 3600, PE 63854F, BPAC 836780 (CCS-C) AF Terminals in PE 33601F, Other Procurement, AF Navy terminals in other PEs Army terminals in other PEs	0	0	11,500	13,300	24,400	46,600	25,900	0	121,700

(U) **D. Acquisition Strategy**
Procure Gapfiller system making maximum use of commercial technology and practices by modifying commercial satellites to support unique military requirements.

(U) **E. Schedule Profile**

	<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Defense Acquisition Board Prep					*	X	X	X				
(U) EMD/Production Contract Award									X			
(U) EMD									X	X	X	X
(U) 1st of 3 launches (1QFY04) x = planned event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2000		
BUDGET ACTIVITY 04 - Demonstration and Validation					PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)				PROJECT 644811	
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
						<u>FY 1999</u>		<u>FY 2000</u>		<u>FY 2001</u>
(U)	Conduct Studies to Investigate International Cooperation					669		0		0
(U)	EMD Activities					0		4,910		82,536
(U)	JTEO Support					0		0		3,310
(U)	Program Support					0		0		6,477
(U)	Total					669		4,910		92,323
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
	<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>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>
	<u>Product Development Organizations</u>									<u>Total</u>
	TBD (WGS Satellites)	TBD	TBD	TBD	TBD	0	0	0	82,536	79,169
	<u>Support and Management Organizations</u>									
	JTEO	PR	Continuing	3,310	3,310	0	0	0	3,310	0
	Pre-EMD	Form 277	Dec 99	5,579	5,579	0	0	4,910	0	0
	International Studies	SS/CFFF/AF	Various				669	0	0	0
	Program Support	TBD	TBD	TBD	TBD	0	0	0	6,477	9,460
	<u>Test and Evaluation Organizations</u>									
	AFOTEC, DT&E	TBD	TBD	TBD	TBD					
(U) <u>Government Furnished Property:</u>										
		<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>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>
	<u>Product Development Property</u>									<u>Total</u>
	TBD									

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BUDGET ACTIVITY 04 - Demonstration and Validation	PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)	PROJECT 644811
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(U) **Government Furnished Property Continued:**

Support and Management Property

TBD

Test and Evaluation Property

TBD

	<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 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	0	0	0	82,536	79,169	161,705
Subtotal Support and Management	0	669	4,910	9,787	9,460	24,826
Subtotal Test and Evaluation						
Total Project	0	669	4,910	92,323	88,629	186,531

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BUDGET ACTIVITY 04 - Demonstration and Validation	PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)	PROJECT 644812
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COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
644812 Advanced Wideband	0	0	0	0	0	31,360	260,762	1,866,500	2,158,622

(U) **A. Mission Description**
 The Advanced Wideband System will provide follow-on DSCS/Wideband Gapfiller communications services starting in FY 2008. It will continue or replace DSCS X-band, Wideband Gapfiller Ka-band services, and will also include the GBS Phase 3 broadcast space segment. The constellation will provide worldwide coverage and make maximum use of commercial practices and technologies.

(U) **FY 1999 (\$ in Thousands)**
 (U) \$0 Not Applicable
 (U) \$0 Total

(U) **FY 2000 (\$ in Thousands)**
 (U) \$0 Not Applicable
 (U) \$0 Total

(U) **FY 2001 (\$ in Thousands)**
 (U) \$0 Not Applicable
 (U) \$0 Total

(U) **B. Project Change Summary**
 (U) Revised outyear estimates for the Advanced Wideband System increased the PE total cost.

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

	<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>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) AF Terminals in PE 33601F, Other Procurement, AF									
(U) Navy terminals in other PEs									
(U) Army terminals in other PEs									

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BUDGET ACTIVITY 04 - Demonstration and Validation	PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)	PROJECT 644812
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(U) **D. Acquisition Strategy**
 Provide Advanced Wideband capability, making maximum use of commercial technology and practices.

(U) **E. Schedule Profile**

	<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4

(U) 1st launch in 1QFY09

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BUDGET ACTIVITY 04 - Demonstration and Validation					PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)				PROJECT 644812		
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
(U)	Not Applicable					0	0	0			
(U)	Total					0	0	0			
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 1999</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Organizations</u>										
	TBD	TBD	TBD	TBD	TBD						
	<u>Support and Management Organizations</u>										
	TBD	TBD	TBD	TBD	TBD						
	<u>Test and Evaluation Organizations</u>										
	TBD	TBD	TBD	TBD	TBD						
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 1999</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Property</u>										
	TBD	TBD	TBD	TBD						2,158,622	2,158,622
	<u>Support and Management Property</u>										
	TBD	TBD	TBD	TBD							
	<u>Test and Evaluation Property</u>										
	TBD	TBD	TBD	TBD							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2000		
BUDGET ACTIVITY 04 - Demonstration and Validation				PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)				PROJECT 644870	
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
644870 Command & Control System Consolidated (CCSC)	0	0	11,500	13,300	24,400	46,600	25,900	0	121,700
<p>(U) <u>A. Mission Description</u> The MILSATCOM Command Control System-Consolidated (CCS-C) will competitively procure integrated launch and on-orbit command control functionality for MILSATCOM satellites as the sustainment contract for the current capability funded under PE 0305110F (AFSCN) completes according to plan. CCS-C will use modified commercial off the shelf hardware/software to control all emerging and legacy MILSATCOM systems (six different constellations). It will support the first new system to need CC (Wideband Gapfiller), and will provide reduced operating and maintenance costs.</p> <p>CCS-C is an FY01 new start effort. The Air Force is preparing a \$2.5M FY00 new start reprogramming action for Congressional approval to initiate a competitive demonstration phase in 4QFY00.</p> <p>(U) <u>FY 1999 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2000 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$8,120 Demonstration (U) \$1,200 Development (U) \$2,180 Program Support (U) \$11,500 Total</p> <p>(U) <u>B. Project Change Summary</u> (U) None.</p>									
Project 644870			Page 18 of 20 Pages				Exhibit R-2A (PE 0603854F)		

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BUDGET ACTIVITY 04 - Demonstration and Validation	PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)	PROJECT 644870
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(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<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>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) AF RDT&E									
(U) PE 33110, DSCS									
(U) PE 64479, Milstar									
(U) PE 63430, AEHF									
(U) Other APPN									
(U) AF Wideband 3080 Procurement (CCS-C), PE 33600F	0	0	4,852	5,411	5,503	8,115	2,209	0	26,090

(U) **D. Acquisition Strategy**
 A competitive demonstration phase, with a mix of fixed-price and cost-plus contract line items, will be awarded in 4QFY00 pending approval of the FY00 New Start reprogramming request. The fixed price contract options will support a 4QFY01 contractor down select for the development phase.

(U) **E. Schedule Profile**

	<u>FY 1999</u>			<u>FY 2000</u>			<u>FY 2001</u>		
	1	2	3	4	1	2	3	4	
(U) Contract Award									X
(U) Prototype/Demonstration									X X X X
(U) Option to Proceed									X
(U) Development Phase									X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2000		
BUDGET ACTIVITY 04 - Demonstration and Validation					PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)				PROJECT 644870	
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
						<u>FY 1999</u>		<u>FY 2000</u>		<u>FY 2001</u>
(U)	Demonstration					0		0		8,120
(U)	Development					0		0		1,200
(U)	Program Support					0		0		2,180
(U)	Total					0		0		11,500
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
<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 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
	TBD	TBD	TBD	TBD	0	0	0	8,120	0	8,120
	TBD	TBD	TBD	TBD	0	0	0	1,200	100,600	101,800
<u>Support and Management Organizations</u>										
	Aerospace	Various			0	0	0	2,180	9,600	11,780
	TBD	Various	TBD	TBD						
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
	<u>Subtotals</u>									
	Subtotal Product Development				0	0	0	9,320	100,600	109,920
	Subtotal Support and Management				0	0	0	2,180	9,600	11,780
	Subtotal Test and Evaluation									
	Total Project				0	0	0	11,500	110,200	121,700