

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303601F: <i>MILSATCOM Terminals</i>
--	---

COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	298.736	236.581	107.237	-	107.237	157.787	58.209	8.202	8.310	Continuing	Continuing
672487: <i>MILSATCOM Terminals</i>	298.736	236.581	107.237	-	107.237	157.787	58.209	8.202	8.310	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

FY12 funding of \$42M for FAB-T Alternative will be executed from project 672489 within this program element.

The Cost to Complete and Total Cost for MDAP projects in this program element are documented in the R3. The Cost to Complete and Total Cost on the R2 are entered as "Continuing" and not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding.

A. Mission Description and Budget Item Justification

The Military Satellite Communications (MILSATCOM) Terminals program develops and fields equipment enabling users to communicate via legacy and future systems to include Milstar, Advanced Extremely High Frequency (AEHF), Ultra High Frequency (UHF) Follow-On (UFO), Wideband Global SATCOM (WGS), Defense Satellite Communication System (DSCS), Enhanced Polar Systems (EPS), and other military and commercial satellites, to support tactical Air and Space Expeditionary Force requirements and maintain essential connectivity for strategic forces. Program RDT&E currently includes the following program efforts:

- 1) Concept development work to identify commercial/military technology solutions to improve MILSATCOM terminal capabilities for the warfighters. Focus includes, but is not limited to, increasing throughput, facilitating sustainability, reducing footprint on user platform and future concept airborne terminals in support of the Global Information Grid (GIG). Funding in FY13 continues support for Advanced Development activities.
- 2) The Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) program will provide Extremely High Frequency (EHF) voice and data MILSATCOM for nuclear and conventional forces as well as airborne and ground command posts with connectivity to Milstar, AEHF, and EPS satellites. FAB-T terminals will also support the command and control (C2) of Milstar, AEHF, and EPS satellites. In FY12, a competitive acquisition was introduced for development in accordance with a new acquisition strategy. In FY13, the Air Force will continue development of the FAB-T terminal.
- 3) The High Data Rate - Radio Frequency (HDR-RF) Ground Terminal program will provide the high data rate SATCOM connectivity needed to support the Intelligence, Surveillance and Reconnaissance (ISR) community with High Bandwidth High Throughput (HBHT) capability. HDR-RF Ground Terminals will be used for Command & Control, Intelligence, Surveillance and Reconnaissance (C2ISR), and will support the full spectrum of operations from humanitarian support/disaster relief to a major theater war. HDR-RF Ground Terminals will be interoperable with WGS satellites to support Air Intelligence Surveillance Reconnaissance (AISR) data rates up to 274Mbps and provide quad band (C-, X-, Ku- and Ka-band) SATCOM. HDR-RF Ground Terminals will be interoperable with legacy tactical terminals and operate worldwide with existing military and commercial satellites. The user of HDR-RF Ground Terminals is to support ISR Missions. HDR-RF funds support Phase II modem wave porting efforts supporting modem qualification with multiple waveforms, test and evaluation, program office support, system engineering and other related activities. No funds requested in FY 13

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0303601F: *MILSATCOM Terminals*

4) The Joint Terminal Engineering Office (JTEO) provides tri-service coordination of terminal development, acquisition and fielding activities. Funding in FY13 continues support for JTEO activities.

5) The High Data Rate Airborne Terminal (HDRAT) will develop a high data rate SATCOM terminal solution in support of AISR platforms and other supporting activities. As a minimum, HDRAT will provide for secure Ka/Ku high data rate satellite links (over commercial and government owned assets) and line-of-sight communications supporting airborne intelligence, surveillance, and reconnaissance (AISR) platforms. This program will provide AISR platforms with antenna solutions, modem assemblies, and the appropriate waveforms capable of supporting high resolution sensor data and C2 links at speed up to 274 Mbps (platform and mission dependent). To support technical risk analysis, the Terminals Program Office (TPO) shall provide the Analysis of Alternatives (AoA) study team data on risks, mitigation techniques, contractual activities designed to mitigate those risks, and on-going high speed airborne waveform development efforts not limited to Global Hawk. No FY 13 funds required due to termination of the program in FY 12.

6) Global Broadcast Service (GBS) provides warfighters with a worldwide, seamless, high throughput broadcast information service to support today's and tomorrow's mission. The Receive Suite (RS) provides Special Operations use of GBS in operational areas; capabilities include reception of voice, data, imagery, and video.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	183.217	238.729	136.666	-	136.666
Current President's Budget	298.736	236.581	107.237	-	107.237
Total Adjustments	115.519	-2.148	-29.429	-	-29.429
• Congressional General Reductions	-	-2.148			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	119.700	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-4.181	-	-29.429	-	-29.429

Change Summary Explanation

FY11 Other Adjustments: +\$119.7M - Congressional reprogramming from MILSATCOM Terminals (PE33601F) Procurement (OPAF & APAF). -\$4.181M - Congressional General Reduction.

FY12 Other Adjustments: -\$2.148 for Congressional General Reductions; \$42M Congressionally Directed Transfer for FAB-T Alternative will be executed from project 672489 within this program element.

FY13 Other Adjustments: -\$2.429M reallocation for higher Department priorities; -\$27M due to FAB-T revised development schedule.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0303601F: <i>MILSATCOM Terminals</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Title: FAB-T Description: The Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) program will provide Extremely High Frequency (EHF) voice and data MILSATCOM for nuclear and conventional forces as well as airborne and ground command posts with connectivity to Milstar, AEHF, and Enhanced Polar System (EPS) satellites. FY 2011 Accomplishments: Continued development of FAB-T Terminal. FY 2012 Plans: Perform competitive acquisition in accordance with acquisition strategy. FY 2013 Plans: Continue development of FAB-T Terminal.		254.064	185.428	97.723
Title: FAB-T Alternative Description: The Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) program will provide Extremely High Frequency (EHF) voice and data MILSATCOM for nuclear and conventional forces as well as airborne and ground command posts with connectivity to Milstar, AEHF, and Enhanced Polar System (EPS) satellites. FY 2011 Accomplishments: N/A FY 2012 Plans: Congressional add for alternate Source to bring competition to the FAB-T program FY 2013 Plans: N/A		-	42.000	-
Title: MILSATCOM Terminals Description: MILSATCOM Terminals program develops and fields equipment enabling users to communicate via legacy and future systems to include Milstar, AEHF, UFO, WGS, DSCS, EPS, and other military and commercial satellites, to support tactical Air and Space Expeditionary Force requirements and maintain essential connectivity for strategic forces. Programs within MILSATCOM Terminals include Advanced Development, HDR-RF, JTEO,GBS, HDRAT, and AWT. FY 2011 Accomplishments:		44.672	9.153	9.514

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0303601F: MILSATCOM Terminals							
C. Accomplishments/Planned Programs (\$ in Millions)									FY 2011	FY 2012	FY 2013
1. Continue concept development/prototype demonstrations/MILSATCOM Terminal roadmap. 2. Continue development of the HDR-RF Ground Terminal. 3. Continue support for the JTEO. Continue program support and other related activities. 4. Continue support for HDRAT AoA activities. Continue program support and other related activities. FY 2012 Plans: 1. Continue concept development/prototype demonstrations/MILSATCOM Terminal roadmap. 2. Continue development of the HDR-RF Ground Terminal. 3. Continue support for the JTEO. Continue program support and other related activities FY 2013 Plans: 1. Continue concept development/prototype demonstrations/MILSATCOM Terminal roadmap. 2. Continue support for the JTEO. Continue program support and other related activities											
Accomplishments/Planned Programs Subtotals									298.736	236.581	107.237
D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• TBD: APAF, PE 0303601F, MILSATCOM Terminals	12.030	50.921	4.580	0.000	4.580	4.320	76.210	201.108	177.000	Continuing	Continuing
• P-46: OPAF, PE 0303601F, MILSATCOM Terminals	192.063	104.468	47.254	0.000	47.254	37.596	79.411	136.203	129.838	Continuing	Continuing
E. Acquisition Strategy											
FAB-T provides a Family of Advanced Beyond Line-of-Sight (BLOS) satellite communications (SATCOM) and Line-of-Sight (BLOS) terminal has an open architecture to satisfy the requirements identified in the FAB-T Capability Development Document (CDD). The FAB-T program is restructuring to introduce competition into the acquisition strategy to reduce risk in delivering this capability as well as to drive down production costs.											

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
3600: Research, Development, Test & Evaluation, Air Force	PE 0303601F: MILSATCOM Terminals	
BA 7: Operational Systems Development		
<p>The HDR-RF Ground Terminal Program consists of three Phases. Phase 1, the Ground Modem Application Demonstration phase, consists of multiple contractors developing an Software Compliant Architecture (SCA)version 2.2.1 compliant, HDR-RF Ground HBHT modem, which will port/run a Government provided test waveform. This phase culminates in a demonstration/test of the vendor's modem hardware and facilitates HBHT SCA modem availability when the standardized operational waveform is complete. Phase 2 consists of porting and demonstrating of the standardized operational waveform, and qualifying the modem. Phase 3 consists of integrating/qualifying the HDR-RF ground modem into an existing Ground Multi-band Terminals, obtaining appropriate certifications, producing, and fielding the system to communicate over WGS using transponded Ka-band satellite communications.</p>		
<p>GBS Receive Suite (RS) development will satisfy the portable receive suite requirements identified in the GBS Operational Requirements Document. (ORD) III Block-3. The program strategy is to design, develop, and test a RS for special operation use and testing and integration to fulfill the GBS TRANSEC requirement.</p>		
F. Performance Metrics		
<p>Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.</p>		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force										DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0303601F: MILSATCOM Terminals				PROJECT 672487: MILSATCOM Terminals					
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FAB-T Development	C/CPAF	Boeing Corp:Huntington Beach, CA	1,644.537	153.483	Jan 2012	75.624		-		75.624	271.581	2,145.225	0.000
FAB-T Alternate Source	C/FFP	TBD:TBD,	-	42.000	Aug 2012	-		-		-	0.000	42.000	0.000
FAB-T INC 2	C/CPFF	Boeing/ Northrop:Seattle/ Melbourne, WA	54.206	-		-		-		-	0.000	54.206	0.000
(1) High Data Rate (HDR) RF Ground Terminal Development	C/FFP	Comtech:Tempe, AZ	5.993	-		-		-		-	0.000	5.993	0.000
(2) High Data Rate (HDR) RF Ground Terminal Development	C/FFP	Raytheon:Marborough, MA	6.365	-		-		-		-	0.000	6.365	0.000
(3) High Data Rate (HDR) RF Ground Terminals Development	C/FFP	L3 Comm:Hauppauge, NY	1.767	-	Jan 2012	-	Jan 2011	-		-	0.000	1.767	0.000
(4) High Data Rate (HDR) RF Ground Terminals Development	SS/CPFF	MITRE:Bedford, MA	3.305	-		-		-		-	0.000	3.305	0.000
High Data Rate (HDR) RF Air Terminal Development (merged with FAB-T beginning in FY06)	C/CPAF	Boeing Corp:Huntington Beach, CA	13.787	-		-		-		-	0.000	13.787	0.000
Lasercom Terminal Development Studies	C/CPFF	Northrop-Raytheon-MITRE-MIT/LL:Various,	30.395	-		-		-		-	0.000	30.395	0.000
(1) Global Broadcast Service (GBS)	C/CPFF	Booz Allen-Windmill:McLeans, VA	1.839	-		-		-		-	0.000	1.839	0.000
(2) Global Broadcast Service (GBS)	C/CPFF	Booz Allen-Windmill:McLeans, VA	2.043	-		-		-		-	0.000	2.043	0.000
(1) High Data Rate Airborne Terminal (HDRAT)	C/FFP	Northrop:Palmdale, CA	-	-		-		-		-	0.000	0.000	0.000
(2) High Data Rate Airborne Terminal (HDRAT) AFSPC AoA	C/TBD	LinQuest:Colorado Springs, CO	2.000	-		-		-		-	0.000	2.000	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force											DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0303601F: MILSATCOM Terminals				PROJECT 672487: MILSATCOM Terminals						
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
(3) High Data Rate Airborne Terminal (HDRAT) Development	SS/CPFF	MITRE:Bedford, MA	5.421	-		-		-		-	0.000	5.421	0.000	
Teminals Development MIT Lincoln Lab	SS/CPFF	MIT/LL:Bedford, MA	7.100	-	Dec 2011	-	Dec 2012	-		-	0.000	7.100	0.000	
JTEO Development	C/CPFF	Booz Allen Hamilton:McLeans, VA	5.072	4.443	Dec 2011	4.569	Dec 2012	-		4.569	15.300	29.384	0.000	
Other miscellaneous contracts	C/CPFF	Various:Various,	0.644	-		-		-		-	0.000	0.644	0.000	
Subtotal			1,784.474	199.926		80.193		-		80.193	286.881	2,351.474	0.000	
Remarks														
FY12 funding of \$42M for FAB-T Alternate Source will be executed from project 672489 within this program element.														
Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Miscellaneous	Various	Various:Various,	14.592	13.704	Jan 2012	5.520	Dec 2012	-		5.520	19.125	52.941	0.000	
Subtotal			14.592	13.704		5.520		-		5.520	19.125	52.941	0.000	
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Various Programs	Various	AF Research Lab:,	12.935	9.017	Jan 2012	7.702	Dec 2012	-		7.702	26.776	56.430	0.000	
Miscellaneous T&E	Various	Various:Various,	1.302	1.000	Jan 2012	0.500	Dec 2012	-		0.500	1.530	4.332	0.000	
Subtotal			14.237	10.017		8.202		-		8.202	28.306	60.762	0.000	

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force											DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0303601F: <i>MILSATCOM Terminals</i>					PROJECT 672487: <i>MILSATCOM Terminals</i>				

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering Support	SS/CPAF	MITRE:Bedford, MA	11.416	9.024	Dec 2011	9.295	Dec 2012	-		9.295	34.426	64.161	0.000
ETASS (Engineering & Technology Acq Spt Services)	C/CPFF	Jacobs:Lincoln, MA	3.402	1.661	Dec 2011	1.711	Dec 2012	-		1.711	3.825	10.599	0.000
PASS (Professional Acq Spt Services)	C/CPAF	Oasis:Lexington, MA	3.606	2.249	Dec 2011	2.316	Dec 2012	-		2.316	9.945	18.116	0.000
Subtotal			18.424	12.934		13.322		-		13.322	48.196	92.876	0.000

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,831.727	236.581		107.237		-		107.237	382.508	2,558.053	0.000

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303601F: <i>MILSATCOM Terminals</i>	PROJECT 672487: <i>MILSATCOM Terminals</i>

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303601F: <i>MILSATCOM Terminals</i>	PROJECT 672487: <i>MILSATCOM Terminals</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GBS Rucksack Portable Receive Suite Production	1	2013	4	2017
FAB-T Competitive Acquisition Development	4	2012	4	2013
FAB-T Competitive Acquisition Production	1	2014	4	2017