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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Air Force **Date:** February 2016

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0303601F / MILSATCOM Terminals
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COST (\$ in Millions)	Prior Years ⁽⁺⁾	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	2,161.419	57.930	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,219.349
672490: <i>Family of Advanced Beyond Line-of-Sight Terminals (FAB-T)</i>	125.924	57.930	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	183.854

Program MDAP/MAIS Code: 199

⁽⁺⁾ The sum of all Prior Years is \$2035.495 million less than the represented total due to several projects ending

Note

In FY2016, PE 0303601F, MILSATCOM Terminals, Project 672490, Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) was transferred to PE 0303001F, FAB-T, Project 672490 FAB-T for improved visibility of ACAT I programs.

FAB-T was funded FY13 and prior in PE 0303601F, Project Number 672487 and Project Number 672489. In FY14, it was transferred to Project Number 672490 in the same PE.

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 efforts:

- 1) 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 existing user platforms and future concept terminals to provide more resilient and/or higher data rate satellite communications to warfighters.
- 2) The Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) program replaces legacy Milstar Command Post Terminals (CPT) and will provide Extremely High Frequency (EHF), protected high data rate communication for nuclear and conventional forces to include Presidential and National Voice Conferencing (PNVC). FAB-T will provide this new, highly secure, state-of-the-art capability for DoD platforms to include strategic platforms and airborne/ground command posts via Milstar, AEHF, and Enhanced Polar System (EPS) satellites. FAB-T terminals will also support the critical command and control (C2) of the Milstar, AEHF, and EPS satellite constellations. In FY15, the Air Force continued development of the FAB-T terminal, Milestone C decision was approved on September 1, 2015.
- 3) The Presidential and National Voice Conferencing (PNVC) capability is a critical element of the Nuclear Command, Control, and Communications (NC3) System. There are several components being developed that must be synchronized to expeditiously field this capability. In May 2015, the Air Force was designated as the end-

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to-end PNVC Integrator. The Defense Information Systems Agency will transfer \$15M RDT&E to the Air Force for PNVC Integration. The Air Force will request an ATR for FY15 and/or FY16 funds for remaining FY16 requirements. This continuing effort was previously programmed and budgeted in DISA's PE 0303126K/Long-Haul Communications - DCS, PC01: Presidential and National Voice Conferencing Equipment and is not a New Start.

4) The Joint Terminal Engineering Office (JTEO) provides tri-service coordination of terminal development, acquisition and fielding activities.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	54.678	0.000	0.000	0.000	0.000
Current President's Budget	57.930	0.000	0.000	0.000	0.000
Total Adjustments	3.252	0.000	0.000	0.000	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	5.000	0.000			
• SBIR/STTR Transfer	-1.748	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force										Date: February 2016		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0303601F / MILSATCOM Terminals				Project (Number/Name) 672490 / Family of Advanced Beyond Line-of-Sight Terminals (FAB-T)			
COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
672490: Family of Advanced Beyond Line-of-Sight Terminals (FAB-T)	125.924	57.930	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	183.854
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

In FY2016, PE 0303601F, MILSATCOM Terminals, Project 672490, Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) was transferred to PE 0303001F, FAB-T, Project 672490 FAB-T for improved visibility of ACAT I programs.

FAB-T was funded FY13 and prior in PE 0303601F, Project Number 672487 and Project Number 672489. In FY14, it was transferred to Project Number 672490 in the same PE.

A. Mission Description and Budget Item Justification

The Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) program replaces legacy Milstar terminals and will provide Extremely High Frequency (EHF), protected high data rate communication for nuclear and conventional forces to include Presidential and National Voice Conferencing (PNVC). FAB-T will provide this new, highly secure, state-of-the-art capability for DoD platforms to include strategic platforms and airborne/ground command posts via Milstar, AEHF, and Enhanced Polar System (EPS) satellites. FAB-T terminals will also support the critical command and control (C2) of the Milstar, AEHF and EPS satellite constellations. In FY16, the Air Force continued development of the FAB-T terminal, performing systems engineering, architectures, continuation of developmental test efforts for preparation of Initial Operational Test & Evaluation (IOT&E) & other activities to meet current & future emerging SATCOM requirements.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2015	FY 2016	FY 2017
Title: FAB-T Development	57.930	-	-
Description: The FAB-T program will provide 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.			
FY 2015 Accomplishments: Raytheon continued development activities, and completed Functional Configuration Audit (FCA) and Engineering Development Model (EDM) deliveries to support government Milestone C decision which was awarded September 1, 2015.			
Accomplishments/Planned Programs Subtotals	57.930	-	-

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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2015	FY 2016	FY 2017			FY 2018	FY 2019	FY 2020	FY 2021	Cost To	
			Base	OCO	Total					Complete	Total Cost
• APAF: BA05, OTHACF: <i>Other Aircraft</i>	32.106	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• OPAF: BA03, 836700: <i>MILSATCOM Space</i>	60.230	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• OPAF: BA05, 86190A: <i>Spares and Repair Parts</i>	12.112	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• APAF: BA05: <i>FBLOST</i>	21.784	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• APAF: BA06: <i>Aircraft Spares and Repair Parts</i>	5.540	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• RDT&E: BA07: <i>PE 0303001F</i>	0.000	3.907	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	-

Remarks

Other program funding listed in FY14-15 is only for the FAB-T program. In FY16, all of the listed Other Program Funding in PE 030601F will transfer to PE 0303001F.

D. Acquisition Strategy

FAB-T Acquisition Strategy: In September 2002 the program office awarded Boeing the System Development and Demonstration (SDD) Cost Plus Award Fee (CPAF) contract; in April 2012 the contract was converted to a Firm Fixed Price (FFP). In 2012 the government introduced competition into the acquisition strategy to reduce risk in delivering this capability as well as to drive down production costs. In September 2012 the program office awarded a System Development and Demonstration (SDD) contract to Raytheon, Firm Fixed Price (FFP). To ensure best value to the government, the Air Force awarded production contracts in September 2013 to both contractors (Boeing and Raytheon). The production contracts began with production planning for both contractors. In June 2014, the Air Force down-selected to Raytheon for development and production of FAB-T Command Post Terminals. The first Production contract options to produce CPT terminals were exercised September 14, 2015 after a successful Milestone C decision was approved September 1, 2015.

E. Performance Metrics

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force **Date:** February 2016

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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
FAB-T Development (Prior Down-Select)	Various	Boeing : Huntington Beach, CA	26.132	0.000		0.000		0.000		0.000		0.000	0.000	26.132	-
FAB-T Development	Various	Raytheon : Marlborough, MA	82.948	27.321	Oct 2014	0.000		0.000		0.000		0.000	0.000	110.269	-
FAB-T Technical Mission Analysis	Various	Not specified. : TBD	7.672	22.577		0.000		0.000		0.000		0.000	0.000	30.249	-
FAB-T GFE DMS	MIPR	Not specified. : TBD	1.744	0.950		0.000		0.000		0.000		0.000	0.000	2.694	-
Subtotal			118.496	50.848		0.000		0.000		0.000		0.000	0.000	169.344	-

Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Test and Evaluation (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
FAB-T Government Test and LDTO Support	Various	Various : Various	1.902	1.904	Oct 2014	0.000		0.000		0.000		0.000	Continuing	Continuing	-
Subtotal			1.902	1.904		0.000		0.000		0.000		0.000	-	-	-

Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
FAB-T FFRDC	MIPR	Aerospace : Los Angeles, CA	2.192	1.143	Oct 2014	0.000		0.000		0.000		0.000	Continuing	Continuing	-
FAB-T A&AS	C/Various	Various : TBD	2.555	2.949		0.000		0.000		0.000		0.000	Continuing	Continuing	-

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Air Force		Date: February 2016
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FAB-T Raytheon Development Contract	1	2015	4	2015
Milestone C Decision	4	2015	4	2015
Award FAB-T Production Contract Option	4	2015	4	2015