Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force											Date: February 2018	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 5: *System Development & Demonstration (SDD)*					**R-1 Program Element (Number/Name)** PE 0701212F *I Automated Test Systems*							
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
Total Program Element	-	14.029	18.528	13.653	0.000	13.653	0.000	0.000	0.000	0.000	Continuing	Continuing
6506TE: *Test And Evaluation Support Budget Authority*	-	14.029	18.528	13.653	0.000	13.653	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Program MDAP/MAIS Code: 6506												

Note

The Automatic Test System program office is responsible for developing, acquiring and sustain Automatic Test Systems for the United Stated Air Force (USAF).

The Bomber Armament Tester is replacing six legacy testers and combining their capabilities into one tester. The Bomber Armament Tester will support the B-2, B-1 and B-52 platforms.

The Common Aircraft Portable Reprogramming Equipment (CAPRE) is a secure common Memory Loader Verifier (MLV) that loads operational flight programs for 32 USAF weapons systems. Weapon Systems include but are not limited to A-10, B-1, B-52, C-5, C-17, C-130, CV-22, F-15, F-16, H-60 and KC-46.

A. Mission Description and Budget Item Justification

The Bomber Armament Tester will ensure that our USAF bomber fleet can conduct nuclear deterrence, global power projection and global strike operations to support the President of the United States and Combatant Commanders by providing a reliable, cyber secure, and sustainable tester. The tasks are to develop a common bomber armament tester and the Test Program Sets (Software, Hardware, and Documentation) to test the armament release equipment on the bombers.

RDT&E efforts support development, testing, and producibility of the Bomber Armament Tester and Test Program Sets. The program will utilize an incremental development approach with B-2 as Increment 1, B-1 as Increment 2, and B-52 as Increment 3. Increment 1 is funded and will consists of up to 5 test articles. Increment 2 and Increment 3 are currently unfunded in the FYDP.

The Common Aircraft Portable Reprogramming Equipment (CAPRE) Secure Memory Loader Verifier (SMLV) is a secure common memory loader verifier that loads operational flight programs to the weapon systems. . CAPRE leads the fleet on Cyber initiatives and is government owned and developed. CAPRE supports 32 USAF weapon systems including but not limited to A-10, B-1, B-52, C-5, C-17, C-130, CV-22, F-15, F-16, H-60 and KC-46.

RDT&E effort includes developing a Network Interface Module (NIM) that provides additional cyber hardening to the CAPRE system and redesigning the current CAPRE system to adapt to the NIM. RDT&E effort also includes software development for NIM interfaces and new weapons systems moving to the CAPRE system from other MLV systems. The goal is to provide one common cyber secure MLV for the Air Force that minimizes cyber vulnerabilities in weapon systems.

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force	Date: February 2018
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0701212F *I Automated Test Systems*

This program element may include necessary civilian pay expenses required to manage, execute, and deliver X-XX weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F."

This program element also includes program administrative cost for the Automatic Test Systems program office and funds the cost of studies and research to support the Automatic Test Systems fleet.

FY 19 funding will be used to continue the development and testing of the Bomber Armament Tester (BAT) and FY 18 funds starts the development hardware and software for the Common Aircraft Portable Reprogrammable Equipment Secure Memory Loader Verifier (CAPRE SMLV)

B. Program Change Summary ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	19.062	18.528	13.756	0.000	13.756
Current President's Budget	14.029	18.528	13.653	0.000	13.653
Total Adjustments	-5.033	0.000	-0.103	0.000	-0.103
• Congressional General Reductions	-4.500	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	0.000	0.000			
• SBIR/STTR Transfer	-0.533	0.000			
• Other Adjustments	0.000	0.000	-0.103	0.000	-0.103

Change Summary Explanation

FY 2017 adjustments include -$4.500M congressional mark and -$0.533M for SBIR.

FY 2019 adjustments: -$0.103M: PB decrease

C. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Bomber Armament Tester ***Description:*** New Common Bomber Armament Tester for B-1, B-2, and B-52. ***FY 2018 Plans:*** - Develop Bomber Armament Tester and Test Program Sets for use with B-2	14.029	11.878	13.653	0.000	13.653

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force	Date: February 2018
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0701212F *I Automated Test Systems*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Conduct initial test with B-2 - Requirements analysis for increments 1 and 2. This will include the most complex B-1 and B-52 test program set development. *FY 2019 Base Plans:* - Continue to develop Bomber Armament Tester and Test Program Sets for use with B-2 - Conduct additional test with B-2 - Requirements analysis for increments 1 and 2. This will include the most complex B-1 and B-52 test program set development. *FY 2019 OCO Plans:* N/A *FY 2018 to FY 2019 Increase/Decrease Statement:* Continued program progress					
Title: CAPRE **Description:** Development of a common cyber secure Memory Loader Verifier for the Air Force. *FY 2018 Plans:* Complete Network Interface Module (NIM) development and complete prototyping. Start development of Software for NIM and other weapons system transition. *FY 2018 to FY 2019 Increase/Decrease Statement:* Continue program progress.	-	6.650	-	-	-
Accomplishments/Planned Programs Subtotals	14.029	18.528	13.653	0.000	13.653

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• PAAF 07 00071: *Replacement Support Equipment*	20.000	7.782	12.000	-	12.000	-	-	-	-	0.000	39.782

Remarks

Other program funding includes procurement funds for Bomber Armament Tester Program and the Common Aircraft Portable Reprogrammable Equipment.

Exhibit R-2, **RDT&E Budget Item Justification:** PB 2019 Air Force	**Date:** February 2018
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0701212F *I Automated Test Systems*

E. Acquisition Strategy

Acquisition Strategy for the Bomber Armament Tester (BAT) was approved by AFPEO/ Agile Combat Support on 12 November 2015 . The BAT program will use an incremental approach based on customer needs to satisfy this requirement. Increment 1 includes the development of the core test set, the B-2A requirements and development of the most complex B-1B and B-52 test program sets. Increment 2 consist of the B-1B development and Increment 3 consists of the B-52H requirements. Currently increments 2 and 3 are unfunded through the FYDP. The BAT program will utilize full and open competition to award the contract. Contract awarded September 28, 2017.

The Acquisition strategy for Common Aircraft Portable Reprogrammable Equipment (CAPRE) Secure Memory Loader Verifier. (SMLV) is to use the original government manufacturer to develop the NIM , software and hardware development. Acquisition Strategy for CAPRE was approved by the Milestone Decision Authority in June 2017.

F. 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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force												Date: February 2018		
Appropriation/Budget Activity 3600 / 5						R-1 Program Element (Number/Name) PE 0701212F / Automated Test Systems						Project (Number/Name) 6506TE / Test And Evaluation Support Budget Authority		

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CAPRE/CAPRE SMLV Development	TBD	Not specified. : NV	-	-		6.300	Dec 2017	-		-		-	Continuing	Continuing	-
BAT Development	C/CPIF	Not specified. : NV	-	8.769	Sep 2017	7.444	Feb 2018	12.303	Sep 2019	-		12.303	Continuing	Continuing	-
Subtotal			-	8.769		13.744		12.303		-		12.303	Continuing	Continuing	N/A

Remarks

Product Development Cost include the development of the Bomber Armament Test Sets (Units under test Software, hardware and Technical Data), Technical Data and maintenance of Government Furnished Equipment.

Development efforts include developing a Network Interface Module (NIM) that provides additional cyber hardening to the CAPRE system and redesigning the current CAPRE system to adapt to the NIM. Development effort also include software development for NIM interfaces and new weapons systems moving to the CAPRE system from other MLV systems. The goal is to provide one common cyber secure MLV for the Air Force.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Logistic Support	C/CPIF	Not specified. : NV	-	3.160	Sep 2017	-		-		-		-	Continuing	Continuing	-
Subtotal			-	3.160		-		-		-		-	Continuing	Continuing	N/A

Remarks

Support Cost include Independent verification and validation support, Nuclear Certification Support and Cyber Security authority support.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development and Operation Testing support	C/CPIF	Not specified. : NV	-	-		2.834	Jan 2019	-		-		-	Continuing	Continuing	-
Subtotal			-	-		2.834		-		-		-	Continuing	Continuing	N/A

Exhibit R-3, **RDT&E Project Cost Analysis:** PB 2019 Air Force		**Date:** February 2018
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0701212F / *Automated Test Systems*	**Project (Number/Name)** 6506TE / *Test And Evaluation Support Budget Authority*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Environmental testing of the Bomber Armament Tester and operational testing of the test program sets for the B-2 and most complex B-1 and B-52

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BAT Travel	Various	Not specified. : NV	-	0.100	Sep 2018	0.100	Sep 2018	0.100	Sep 2019	-		0.100	Continuing	Continuing	-
BAT Program Management Support	C/FFP	Not specified. : NV	-	2.000	Oct 2017	1.500	Mar 2018	1.000	Oct 2019	-		1.000	Continuing	Continuing	-
CAPRE/CAPRE SMLV Travel	Various	Not specified. : NV	-	-		0.050	Sep 2018	0.050	Sep 2019	-		0.050	Continuing	Continuing	-
CAPRE/ CAPRE SMLV Program Management Support	C/FFP	Not specified. : NV	-	-		0.300	Jun 2018	0.200	May 2019	-		0.200	Continuing	Continuing	-
Subtotal			-	2.100		1.950		1.350		-		1.350	Continuing	Continuing	N/A

Remarks

PMA costs include travel to support the development of the Bomber Armament Tester. PMA cost also include an Information Assurance expert and Assistance and advisory service contractors to provide support to the program office during the development of the program.The program element may include necessary civilian pay expenses required to manage, execute and deliver Automatic Test System capability.

	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	14.029	18.528	13.653	-	13.653	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 *I* 5	**R-1 Program Element (Number/Name)** PE 0701212F *I Automated Test Systems*	**Project (Number/Name)** 6506TE *I Test And Evaluation Support* *Budget Authority*

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Automatic Test Systems																												
BAT Milestone B Decision			▆																									
BAT Contract Award				▆																								
BAT Milestone C Decision											▆																	
CAPRE NIM Initial prototyping						▆▆																						
CAPRE CDR						▆																						
CAPRE NIM Baseline Design/Drawing and Software						▆▆▆																						
CAPRE Software Development (Weapon Sytem Transition)						▆▆▆▆▆																						
Cable Design						▆▆▆▆▆																						

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 I 5	**R-1 Program Element (Number/Name)** PE 0701212F I *Automated Test Systems*	**Project (Number/Name)** 6506TE I *Test And Evaluation Support Budget Authority*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Automatic Test Systems				
BAT Milestone B Decision	3	2017	3	2017
BAT Contract Award	4	2017	4	2017
BAT Milestone C Decision	4	2019	4	2019
CAPRE NIM Initial prototyping	3	2018	4	2018
CAPRE CDR	3	2018	3	2018
CAPRE NIM Baseline Design/Drawing and Software	3	2018	2	2019
CAPRE Software Development (Weapon Sytem Transition)	3	2018	4	2019
Cable Design	3	2018	4	2019

Note

Schedule reflects increment one EMD. Increments two and three are currently unfunded.

CAPRE is government designed and development. Plan is to have original government manufacturer to handle this development effort.