Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force											Date: March 2023	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0604233F / *Specialized Undergraduate Flight Training*							
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
Total Program Element	-	8.333	17.267	41.464	0.000	41.464	37.182	7.357	7.504	3.001	Continuing	Continuing
674101: *Undergraduate Remotely Piloted Aircraft Training*	-	3.790	0.857	0.877	0.000	0.877	0.896	0.918	0.937	0.362	Continuing	Continuing
676035: *T-6 Operational System Development*	-	0.061	6.815	36.721	0.000	36.721	36.141	6.292	6.419	2.482	0.000	94.931
676037: *T-38 Operational System Development*	-	4.482	9.595	3.866	0.000	3.866	0.145	0.147	0.148	0.157	0.000	18.540

A. Mission Description and Budget Item Justification

Supports Air Education and Training Command's (AETC) implementation of Specialized Undergraduate Pilot Training and the Department of Defense initiative for joint pilot training.

Undergraduate Remotely Piloted Aircraft (RPA) Training (URT) continues development, test, and implementation activities for the new URT Fundamentals Training System. This program produces RPA pilots and Sensor Operators from accession sources to man RPA squadrons.

T-6 Operational System Development continues follow on development activities to the T-6 including but not limited to studies & development efforts, instructional courseware, and logistics support to include Diminishing Manufacturing Sources & Material Shortages (DMSMS) and development activities related to DMSMS. Included is development for the Next Generation On-Board Oxygen Generation System (OBOGS), Crash Survivable Recorder (CSR), Avionics Replacement Program (ARP) and associated upgrades. There are currently 443 aircraft in the Air Force inventory. Remaining service life is up to 39 years from the final delivery in May 2010.

The T-38 is a twin-engine, two-seat (tandem), supersonic jet trainer. The T-38C is used by AETC as an advanced trainer in Specialized Undergraduate Pilot Training and Introduction to Fighter Fundamentals, and by Air Force Materiel Command as a test bed for fighter-type aircraft capability. T-38A/B aircraft are used by Air Combat Command as a companion trainer for U-2 operational units and in Adversary Air (ADAIR) exercises supporting F-22 readiness, and by Air Force Global Strike Command as a companion trainer for B-2 operational units. There are currently 496 active T-38s in the Air Force inventory (53 T-38A, six AT-38B and 437 T-38C). T-38s first entered service in 1960 and average over 50 years old.

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Specialized Undergraduate Pilot Training weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program elements 0605827F, 0605828F, 0605829F,

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force	Date: March 2023
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*

0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY22 0.000 million was expended for civilian pay expenses in this program element, and in FY 2023 1.166 million is forecast for civilian pay expenses in this program element.

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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	8.589	18.037	42.223	0.000	42.223
Current President's Budget	8.333	17.267	41.464	0.000	41.464
Total Adjustments	-0.256	-0.770	-0.759	0.000	-0.759
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-0.770			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-0.256	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	-0.759	0.000	-0.759

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Project: 674101: *Undergraduate Remotely Piloted Aircraft Training*		
Congressional Add: *Undergraduate RPA Training Support (Congressional Add)*	2.976	-
Congressional Add Subtotals for Project: 674101	2.976	-
Congressional Add Totals for all Projects	2.976	-

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force			Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604233F / *Specialized Undergraduate Flight Training*	Project (Number/Name) 674101 / *Undergraduate Remotely Piloted Aircraft Training*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
674101: *Undergraduate Remotely Piloted Aircraft Training*	-	3.790	0.857	0.877	0.000	0.877	0.896	0.918	0.937	0.362	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This effort supports Air Education and Training Command's (AETC) implementation of Undergraduate Remotely Piloted Aircraft (RPA) Training (URT). URT produces RPA pilots and Sensor Operators from accession sources to man RPA squadrons.

Success of the program is heavily dependent on multiple training systems to prepare undergraduate students for entry in RPA Formal Training Units (FTU). 19AF/CC approved a significant system upgrade along with a change in software. This change allowed for a more flexible and adaptable training system that can carry URT into the future. Funding will be used to develop organic software capabilities, update obsolete equipment, and develop new training tools. The goal of these changes is to build a more capable set of training systems focused on reducing costs while ensuring RPA training is ready to support the National Defense Strategy from today into tomorrow.

Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortage (DMSMS) issues. Diminishing Manufacturing Sources efforts include removal of end-of-life software/hardware within simulators systems and move to a modular, common open system architecture that is sustainable and cyber-resilient.

Implementation requirements and standards are defined under the Simulator Common Architecture Requirements and Standards (SCARS) initiative.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Undergraduate RPA URT Training weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program elements 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY 2022 $0.000 million was expended for civilian pay expenses in this program element, and in FY 2023, $0.150 million is forecast for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Undergraduate RPA Training Support	0.814	0.857	0.877	-	0.877
Description: Develop capabilities to support AETC's implementation of Undergraduate RPA Training to produce RPA pilots and Sensor Operators for RPA squadrons.					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*	**Project (Number/Name)** 674101 / *Undergraduate Remotely Piloted Aircraft Training*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FY 2023 Plans: Continue development of new training simulation software to replace the current software utilized in the RPA Instrument Qualification Course to train RPA pilots. Continue effort to develop organic software capabilities and replace proprietary software. Move from small scale development into full scale implementation across both RPA Pilot and Sensor Operator training. Concurrently, software development will continue with feedback from small scale testing. ***FY 2024 Base Plans:*** Continue development of new training simulation software to replace the current software utilized in the RPA Instrument Qualification Course to train RPA pilots. Continue effort to develop organic software capabilities and replace proprietary software. Move from small scale development into full scale implementation across both RPA Pilot and Sensor Operator training. Concurrently, software development will continue with feedback from small scale testing. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding increased due to economic adjustments.					
Accomplishments/Planned Programs Subtotals	0.814	0.857	0.877	-	0.877

	FY 2022	FY 2023
Congressional Add: Undergraduate RPA Training Support (Congressional Add) ***FY 2022 Accomplishments:*** Continue computer system upgrades to comply with DoD cyber security mandates.	2.976	-
Congressional Adds Subtotals	2.976	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Transition from contractor support to organic sustainment at Oklahoma City Air Logistics Complex, Tinker AFB, OK.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force			Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*	**Project (Number/Name)** 674101 / *Undergraduate Remotely Piloted Aircraft Training*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Undergraduate Remotely Piloted Aircraft Training Phased planning, design, and development of software updates	SS/FFP	555th SWES, Tinker ALC : Tinker AFB, OK	-	3.695	Mar 2022	0.603		0.446		-		0.446	Continuing	Continuing	-
		Subtotal	-	3.695		0.603		0.446		-		0.446	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Direct Hire Civ Pay	TBD	Not specified. : TBD	-	0.000		0.150		0.000		-		0.000	Continuing	Continuing	-
		Subtotal	-	0.000		0.150		0.000		-		0.000	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Undergraduate Remotely Piloted Aircraft Training PSC Other Government Cost and Contract Services	SS/CPFF	Program Office : WPAFB, OH	-	0.095	Oct 2021	0.104		0.431		-		0.431	Continuing	Continuing	-
		Subtotal	-	0.095		0.104		0.431		-		0.431	Continuing	Continuing	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	3.790		0.857		0.877		-		0.877	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*	**Project (Number/Name)** 674101 / *Undergraduate Remotely Piloted Aircraft Training*

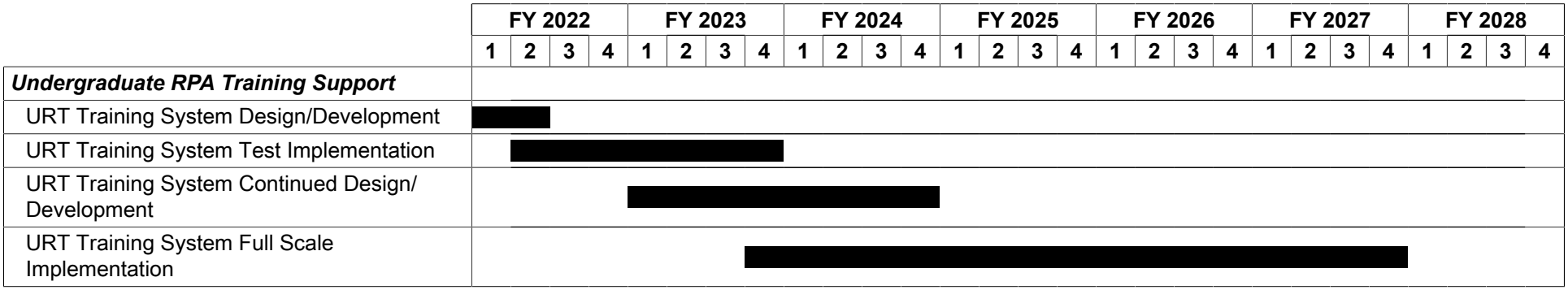

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*	**Project (Number/Name)** 674101 / *Undergraduate Remotely Piloted Aircraft Training*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Undergraduate RPA Training Support				
URT Training System Design/Development	1	2022	2	2022
URT Training System Test Implementation	2	2022	4	2023
URT Training System Continued Design/Development	1	2023	4	2024
URT Training System Full Scale Implementation	4	2023	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force			Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604233F / *Specialized Undergraduate Flight Training*	Project (Number/Name) 676035 / *T-6 Operational System Development*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
676035: *T-6 Operational System Development*	-	0.061	6.815	36.721	0.000	36.721	36.141	6.292	6.419	2.482	0.000	94.931
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

T-6 Operational System Development continues follow on development activities to Joint Primary Aircraft Training System (JPATS) including but not limited to studies and development efforts, instructional courseware, and logistics support to include Diminishing Manufacturing Sources (DMS) and development activities related to DMS. Included is development for the Next Generation On-Board Oxygen Generation System, Automatic Dependent Surveillance Broadcast Out (ADS-B Out), Crash Survivable Recorder, Avionics Replacement Program (ARP), Heads Up Display (HUD), Enhanced Mission Cockpit (EMC) and associated upgrades. There are currently 443 aircraft (442 AETC & one TA-D Test aircraft) in the Air Force inventory. Remaining service life is up to 39 years from the final delivery in May 2010.

Funding contained in this platform's documentation directly aids Air Education Training Command (AETC) flying training enterprise to continue its overall pilot production increase starting in FY2020 thus reducing the USAF Pilot Shortage.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Specialized Undergraduate T-6 Pilot Training weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program elements 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY 2022 $0.000 million was expended for civilian pay expenses in this program element, and in FY 2023 $1.016 million is forecast for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: T-6A JPATS Studies and Analysis	0.061	0.000	0.150	-	0.150
Description: T-6A JPATS studies and development activities including but not limited to: Engine Preservation/ Upgrade Development, On-Board Oxygen Generation System (OBOGS) Characterization Study, Next Generation On-Board Oxygen Generation System Study, Supplemental Oxygen System Study, Cockpit Environmental Monitoring/Analysis, and Physiological Events (PE) Analysis, and HUD/EMC Study/Analysis. Includes engineering and contractor support/services and Program Support Costs (PSC).					
FY 2023 Plans: N/A					
FY 2024 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*	**Project (Number/Name)** 676035 / *T-6 Operational System Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
ARP studies and analysis. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding increased due to ramp up of ARP studies and analysis activities.					
Title: T-6 Avionics Modernization (Avionics Replacement Program) ***Description:*** T-6A Avionics Replacement Program (ARP). Current T-6A avionics are comprised of analog and 1st generation digital components which are increasingly by DMSMS resulting in reduced Aircraft Availability (AA) and increased life-cycle sustainment costs. The current federated nature of the avionics suite compounds engineering and integration costs of replacement components. No less than 23 components impacts by DMSMS will be replaced by the ARP to improve reliability, availability and reduce system sustainment costs, via a modern, integrated, open-system avionics suite. The ARP will address DMSMS issues, current T-6A FAA compliance issues and fulfill outstanding safety recommendations. The solution will be incorporated into all 443 AETC aircraft and 80 Ground Based Trainers. ***FY 2023 Plans:*** Address DMSMS issues, current T-6A FAA compliance issues and fulfill outstanding safety recommendations. ***FY 2024 Base Plans:*** Contracting activities to award developmental contract for instrument panel integration; and other avionics suite engineering efforts. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding increase due to program ramp up of contracting activities and increased avionics suite engineering.	0.000	6.815	36.571	-	36.571
Accomplishments/Planned Programs Subtotals	0.061	6.815	36.721	-	36.721

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• APAF 06 Line Item 000999: *Initial Spares/Repair Parts*	0.000	0.000	0.000	-	0.000	11.047	10.280	10.547	10.822	0.000	42.696
• APAF 05 Line Item JPAT00: *T-6*	8.735	6.215	2.942	-	2.942	157.727	417.022	147.110	371.645	39.983	1,151.379

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*	**Project (Number/Name)** 676035 / *T-6 Operational System Development*

D. Acquisition Strategy

The Air Force is lead service for the T-6 Operational Systems Development program and currently manages upgrades to the entire family of systems for both the Air Force and Navy. T-6 Operational Systems Development acquisition strategy for satisfying emerging software and hardware requirements is designed to enable competition and control cost. Developmental requirements resulting from Diminishing Manufacturing Sources and Material Shortages research and reporting will be evaluated and implemented incrementally to efficiently deliver required capabilities to AETC.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*	**Project (Number/Name)** 676035 / *T-6 Operational System Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
T-6 Avionics Modernization (Avionics Replacement Program)	C/FFP	Not specified. : TBD	-	-		4.728	Jul 2023	33.259	Nov 2023	-		33.259	Continuing	Continuing	-
		Subtotal	-	-		4.728		33.259		-		33.259	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	C/CPAF	Not specified. : Tinker, OK	-	0.061	May 2022	-		0.215	Mar 2024	-		0.215	Continuing	Continuing	-
		Subtotal	-	0.061		-		0.215		-		0.215	Continuing	Continuing	N/A

Remarks

Continue Unknown Physiological Event's studies.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support Cost [PSC] Contract Services	C/FFP	Not specified. : TBD	-	-		1.020	Feb 2023	1.172	Feb 2024	-		1.172	Continuing	Continuing	-
Direct Cite Civ Pay	C/TBD	Not specified. : TBD	-	-		1.016	Mar 2023	1.742	Oct 2023	-		1.742	Continuing	Continuing	-
PSC Other Government Costs	Various	Not specified. : TBD	-	-		0.051		0.333		-		0.333	Continuing	Continuing	-
		Subtotal	-	-		2.087		3.247		-		3.247	Continuing	Continuing	N/A

	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	0.061		6.815		36.721		-		36.721	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force			Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604233F / *Specialized Undergraduate Flight Training*	Project (Number/Name) 676035 / *T-6 Operational System Development*	

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*	**Project (Number/Name)** 676035 / *T-6 Operational System Development*

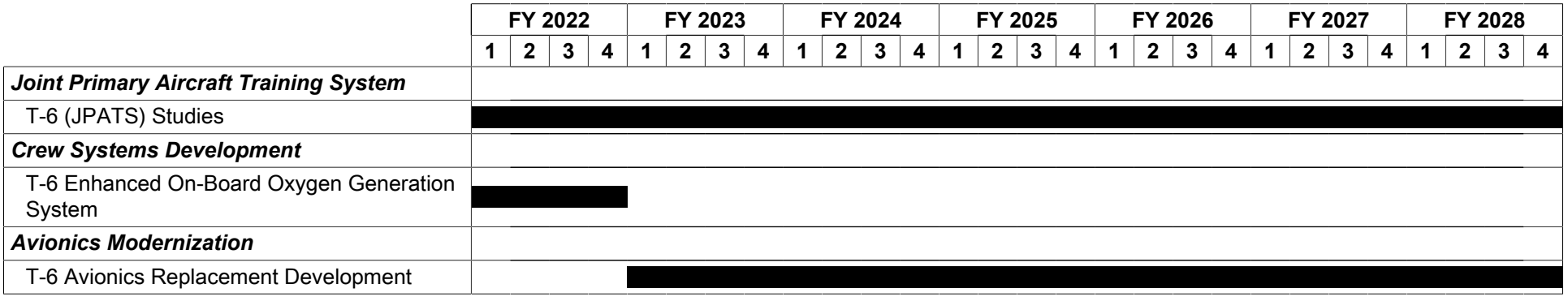

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*	**Project (Number/Name)** 676035 / *T-6 Operational System Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Joint Primary Aircraft Training System				
T-6 (JPATS) Studies	1	2022	4	2028
Crew Systems Development				
T-6 Enhanced On-Board Oxygen Generation System	1	2022	4	2022
Avionics Modernization				
T-6 Avionics Replacement Development	1	2023	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force			Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604233F / *Specialized Undergraduate Flight Training*	Project (Number/Name) 676037 / *T-38 Operational System Development*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
676037: *T-38 Operational System Development*	-	4.482	9.595	3.866	0.000	3.866	0.145	0.147	0.148	0.157	0.000	18.540
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The T-38 RDT&E budget is focused on modifications needed to overcome part obsolescence, aging of critical components, emerging safety concerns, and cybersecurity risks. Operational Flight Program (OFP) block upgrades incorporate software improvements for the aircraft and aircrew training devices (ATDs) to address flight safety issues, and to comply with new capabilities mandated by Department of Defense, Federal Aviation Administration, or National Airspace System. RDT&E include but are not limited to the following:

RDT&E requirements for the T-38C fleet are summarized below in the Terminal Avionics Replacement Program (TARP). This effort includes both RDT&E and Procurement funding to replace aging and obsolete avionics components that can no longer be repaired. Planned components include, but are not limited to, the Electronic Engine Display (EED), Multi-Function Display (MFD), Video Data Transfer Unit (VDTU), and Head-Up Display Camera (HUDC). Failure to fund these efforts will result in fleet-wide T-38C non-serviceability starting in Apr 2026.

RDT&E requirements for the T-38A/B fleet are summarized below in the Low-cost Avionics Modernization Program (LAMP). LAMP addresses high failure rates in T-38A/B navigation system components, which are currently causing a safety risk to pilot spatial orientation. Flight restrictions associated with this risk are impacting F-22, U-2, and B-2 readiness. Planned component replacements include, but are not limited to, the Attitude Director Indicator and the Horizontal Situation Indicator. Failure to fund this effort will result in ongoing safety risk for the T-38A/B fleet, and increased impact to F-22, U-2, and B-2 readiness.

The T-38 Studies and Development effort captures ongoing and emerging RDT&E requirements, to include budget for flight test, OFP updates, and emerging obsolescence or safety issues. Additional revisions may occur under this effort. Failure to fund these efforts will prevent the T-38 program from rapidly responding to emerging RDT&E requirements. Current requirements in work include but are not limited to, Block 11, Speed Brake, and Canopy Open Warning.

This requirement for T-38 programs support performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D "Audits: audit of financial statements of Department of Defense components by independent external auditors."

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Specialized Undergraduate T-38 Pilot Training weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program elements 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY 2022 $0.000 million was expended for civilian pay expenses in this program element, and in FY 2023 $0.000 million is forecast for civilian pay expenses in this program element.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*	**Project (Number/Name)** 676037 / *T-38 Operational System Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: T-38C Terminal Avionics Replacement Program (TARP) ***Description:*** TARP develops replacements for four T-38C avionics components facing obsolescence. TARP includes, but is not limited to: 1-2. Electronic Engine Display (EED) and Multi-Function Display (MFD) (T-38C Displays): Without a replacement, T-38C aircraft will be grounded once the repair contract for EED and MFD expires in Mar 2026. 3-4. Video Data Transfer Unit (VDTU) and Heads-Up Display Camera (HUDC) (T-38C Recording Devices): Compact Flash Cards that record flight data are no longer procurable, with inventory depleted in FY24. Without a functioning VDTU, the T-38C will be unsuitable for training purposes, with no ability to record flight data. Without a replacement, the current HUDC will no longer function after the repair contract expires in Mar 2026. The HUDC is essential to the T-38C training mission, as a critical tool for student/instructor feedback. ***FY 2023 Plans:*** Continue development of EED, MFD; begin test for EED and MFD; begin development of VDTU and HUDC. ***FY 2024 Base Plans:*** Continue test for EED and MFD; continue development of VDTU and HUDC. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding decreased due to reduced TARP developmental activities.	0.000	7.683	3.539	0.000	3.539
Title: T-38A/B Low-Cost Avionics Modification Program (LAMP) ***Description:*** LAMP will replace the current Attitude Director Indicator (ADI) and Horizontal Situation Indicator (HSI), which have low Mean Times Between Failure (MTBF). Ongoing LAMP activity may either refurbish or replace other navigation components, to include the Attitude Gyro Control Assembly, Rate Switching Gyro, Rate Gyro Transmitter, Servo-Amplifier, and Flight Director Computer. ***FY 2023 Plans:*** Integrate and test new primary flight references for the T-38A/B fleet. ***FY 2024 Base Plans:***	2.180	0.330	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*	**Project (Number/Name)** 676037 / *T-38 Operational System Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding decreased due to anticipated completion of LAMP efforts.					
Title: T-38 Studies and Development ***Description:*** Studies and development (including flight test) to support: 1. Engineering Change Proposals (ECP) to overcome part obsolescence issues, maintain system currency, or address emerging safety concerns. 2. T-38C Operational Flight Program (OFP) block upgrades for aircraft and aircrew training devices (ATDs) to implement interface improvements, cybersecurity enhancements, airspace mandates, or other user requirements. ***FY 2023 Plans:*** Execute emergent engineering change proposals, to include investigation into a speed brake warning indicator and canopy open warning for T-38A/B aircraft, and other safety modificaitons ***FY 2024 Base Plans:*** Execute emergent engineering change proposals, to include investigation into a speed brake warning indicator and canopy open warning for T-38A/B aircraft, and other safety modifications ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding decreased due to decrease of ECP requirements.	2.302	1.582	0.327	0.000	0.327
Accomplishments/Planned Programs Subtotals	4.482	9.595	3.866	0.000	3.866

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*	**Project (Number/Name)** 676037 / *T-38 Operational System Development*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• APAF 05 Line Item T03800: *T-38*	45.039	97.485	125.340	-	125.340	83.254	52.294	88.267	56.418	101.196	649.293

Remarks

D. Acquisition Strategy

The T-38 Platform Operations System Development acquisition strategy for satisfying emerging software and hardware requirements is designed to enable competition and cost control. Developmental requirements resulting from Diminishing Manufacturing Sources and Material Shortages research and reporting will be evaluated and implemented incrementally to efficiently deliver required capabilities to using commands. T-38C block upgrades will be required to maintain aircraft airworthiness and will be implemented based on Air Education and Training Command requirements. An appropriate level of technical data rights is required by all current support contracts.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force			Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*	**Project (Number/Name)** 676037 / *T-38 Operational System Development*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
T-38 Studies and Development	C/FFP	The Boeing Company : St. Louis, MO	-	1.334	May 2022	1.200	Jul 2023	-		-		-	0.000	2.534	-
TARP	C/FFP	The Boeing Company : St. Louis, MO	-	0.000		7.258	Feb 2023	3.539	Nov 2023	-		3.539	Continuing	Continuing	-
LAMP	C/FFP	The Boeing Company : St. Louis, MO	-	2.180	Jul 2022	0.330	Jan 2023	-		-		-	Continuing	Continuing	-
		Subtotal	-	3.514		8.788		3.539		-		3.539	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Flight Testing	PO	Not specified. : TBD	-	0.731		0.323		0.249		-		0.249	0.000	1.303	-
		Subtotal	-	0.731		0.323		0.249		-		0.249	0.000	1.303	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PSC Contract Services	C/FFP	Not specified. : NV	-	0.199	Dec 2021	0.000	Dec 2022	0.060		-		0.060	Continuing	Continuing	-
PSC Other Government Costs	Various	Not specified. : NV	-	0.038	Dec 2021	0.484		0.018		-		0.018	Continuing	Continuing	-
		Subtotal	-	0.237		0.484		0.078		-		0.078	Continuing	Continuing	N/A

	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	4.482		9.595		3.866		-		3.866	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force			Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604233F / *Specialized Undergraduate Flight Training*	Project (Number/Name) 676037 / *T-38 Operational System Development*	

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*	**Project (Number/Name)** 676037 / *T-38 Operational System Development*

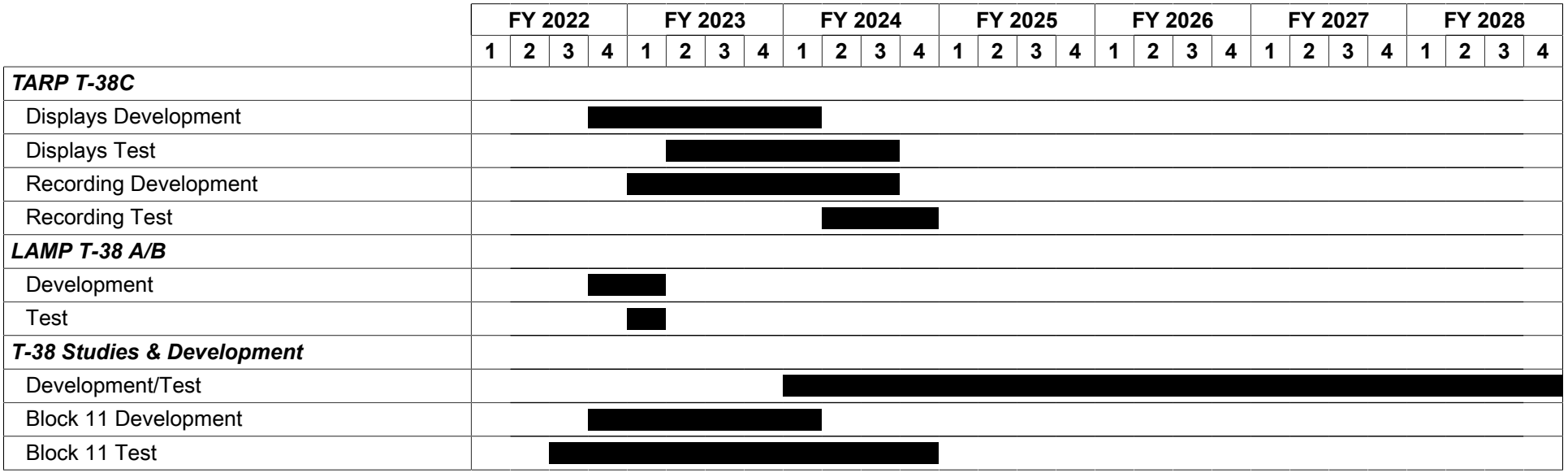

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604233F / *Specialized Undergraduate Flight Training*	**Project (Number/Name)** 676037 / *T-38 Operational System Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
TARP T-38C				
Displays Development	4	2022	1	2024
Displays Test	2	2023	3	2024
Recording Development	1	2023	3	2024
Recording Test	2	2024	4	2024
LAMP T-38 A/B				
Development	4	2022	1	2023
Test	1	2023	1	2023
T-38 Studies & Development				
Development/Test	1	2024	4	2028
Block 11 Development	4	2022	1	2024
Block 11 Test	3	2022	4	2024