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 0305116F / *Aerial Targets*							
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	-	1.488	1.365	6.915	0.000	6.915	7.672	5.089	1.764	1.828	Continuing	Continuing
675136: *Target Systems Development*	-	1.488	1.365	6.915	0.000	6.915	7.672	5.089	1.764	1.828	Continuing	Continuing

A. Mission Description and Budget Item Justification

Full-scale Aerial Targets (FSAT), Subscale Aerial Targets (SSAT), and companion Target Control Systems (TCS) assure the effectiveness and currency of warfighter weapon systems to combat real-world enemy fighters and cruise missiles. Aerial targets support adherence to Public Law Title 10, Section 2366, which requires major systems and munitions programs to conduct live fire survivability and lethality testing before full rate production. Targets are used to validate operational missile/weapon system effectiveness and fighter Operational Flight Program (OFP) updates. Targets are required for developmental/operational testing for all air-to-air and surface-to-air missiles, and for the F-22A, F-35, F-18, F-16, F-15, among other aircraft. Funding supports simulator development and improvements on the QF-16 FSAT, BQM-167A SSAT, and updates of Target Control Systems and specialized target payload subsystems for requirements such as: missile scoring, electronic attack (EA), infrared (IR) countermeasures, radar/IR signature augmentation, and chaff and flare dispensing systems. Enables analysis, development and prototyping of threat emulations/ simulations, and presentation of evolving threat scenarios and target area environments to prepare for emerging weapons development activities. Development is required to evolve aerial targets and target control capabilities to meet current and future threats. Air Force is the executive agent for full-scale aerial targets.

The Aerial Targets Program implements tenets of Open, Agile, and Digital acquisition for any new subsystem hardware or software development. Integrates the system in weapon portfolio tradespace studies by conducting trade studies, system engineering, test activities, and system modeling and simulation. Builds and refines a mission modeling framework by incorporating higher-fidelity weapon system designs and updates to the threat landscape to conduct ongoing assessment of weapon system performance against the authoritative threat. Invests in analytical, information management, data management, digital environments, and networks directly supporting development and sustainment of this program's capabilities, while leveraging DoD and DAF enterprise IT solutions.

Leverages Digital acquisition tenets of open, agile and digital. This may include providing funds to prime contractors; program office contract support; facility, security and IT upgrades; common component development with other weapon systems to reduce redundant costs.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY22 0.0M was expended for civilian pay expenses in this program element, and in FY23 0.0M is forecasted for civilian pay expenses in this program element.

The FY2024 funding request was reduced by 0.545 million to account for the availability of prior year execution balances.

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.

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 0305116F / *Aerial Targets*

B. Program Change Summary ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	1.528	1.365	1.646	0.000	1.646
Current President's Budget	1.488	1.365	6.915	0.000	6.915
Total Adjustments	-0.040	0.000	5.269	0.000	5.269
• 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	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.040	0.000	5.269	0.000	5.269

Change Summary Explanation

FY24 increase for enhancements required for the Target Control System (TCS) Upgrade

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 0305116F / *Aerial Targets*	Project (Number/Name) 675136 / *Target Systems 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
675136: *Target Systems Development*	-	1.488	1.365	6.915	0.000	6.915	7.672	5.089	1.764	1.828	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Full-scale Aerial Targets (FSAT), Subscale Aerial Targets (SSAT), and companion Target Control Systems (TCS) assure the effectiveness and currency of warfighter weapon systems to combat real-world enemy fighters and cruise missiles.

The BQM-167A Air Force Subscale Aerial Target (AFSAT) is a reusable jet-powered target aircraft measuring approximately 20 feet long with a mission to simulate threat aircraft for testing and evaluation of surface-to-air, ship-to-air, or air-to-air missiles. The target accomplishes this mission through the use of optional payloads including chaff and flare, electronic attack (EA), and infrared (IR) devices. Funding supports continued improvement of overall performance enhancement efforts to meet evolving threats. Funding supports development, improvements, and updates of target control systems and specialized target payload subsystems for requirements to include, but not limited to: missile scoring, EA and IR countermeasures, radar and IR signature augmentation, chaff and flare dispensing systems, and overall target threat emulation.

EA payload upgrades provide new techniques and capabilities critical to subscale, mid-scale, and full-scale targets to realistically emulate current and emerging foreign threat systems in support of weapons testing.

TCS provides a myriad of sub-systems that, together, deliver the capability to control and track mission aerial targets and to track a mix of other critical mission participants (to include relay platforms, shooters, and the missile system under test). In this role, TCS ensures an optimum integrated aerial target environment that enhances both weapon system assessments and companion aircrew skills, and the full safety of mission participants throughout the conduct and fulfillment of Test and Evaluation (T&E) objectives. Funding supports continued improvement of TCS capabilities to effectively meet the multi-service T&E demands of current and future warfighter weapon systems.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY22 0.0M was expended for civilian pay expenses in this program element, and in FY23 0.0M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 7, Operational System Development because this budget activity includes developmental 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 year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: AF Subscale Aerial Target (AFSAT) Development	0.976	0.888	1.157

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 0305116F / *Aerial Targets*	**Project (Number/Name)** 675136 / *Target Systems Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Description: Provide enhancements to AFSAT ability to emulate emerging threats in support of weapon testing. ***FY 2023 Plans:*** Continue system upgrades to support expanded AFSAT capabilities to support achieving emulation of emerging threat targets as our adversaries develop and expand their arsenals. ***FY 2024 Plans:*** Continue system upgrades to support expanded AFSAT capabilities to support achieving emulation of emerging threat targets as our adversaries develop and expand their arsenals. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding increase due to efforts associated with integrated flight controller.			
Title: Target Control System (TCS) ***Description:*** Provide system enhancements to Advance Airborne Threat Target Control System (AATTCS), formerly known as Gulf Range Drone Control System (GRDCS), for command and control and tracking of aerial targets. Funding may be utilized for development/augmentation/modification of control systems to fulfill gaps in functional capabilities identified in 2018 ACC Capabilities Analysis of target control systems. Gaps relate to creating the emulation of next generation enemy aircraft threats. ***FY 2023 Plans:*** Continue system upgrades to include, but not limited to, AATTCS software/hardware updates to support implementing QF-16, AFSAT, TCS enhancements and future TCS capability enhancements in order to close capability gaps identified by users. ***FY 2024 Plans:*** Continue system upgrades to include, but not limited to, AATTCS software/hardware updates to support implementing QF-16, AFSAT, TCS enhancements and future TCS capability enhancements in order to close capability gaps identified by users. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding increase to address frequency encroachment issues of commercial users and continue system modernization enhancements to include but not limited to the Advanced Aerial Threat Target Control System (AATTCS) software updates to support implementing QF-16 and AFSAT enhancements.	0.413	0.378	5.758
Title: Next Generation Aerial Target (NGAT) ***Description:*** NGAT seeks to conduct early systems engineering and risk reduction activities to identify and mitigate the major risks associated with developing a new aerial target for live fire surface-to-air, ship-to-air, and air-to-air missile tests. ***FY 2023 Plans:***	0.099	0.099	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 0305116F / *Aerial Targets*	**Project (Number/Name)** 675136 / *Target Systems Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Continue to conduct engineering analysis to identify candidate configurations and concepts that lead to early identification of technical risks in integrating advanced electronic attack systems in prototype airframes. Results of these studies will be used to select the most promising concepts for further evaluation and follow on detailed design, integration, ground and flight test of the candidate configurations. ***FY 2024 Plans:*** There are no NGAT activities planned for FY24. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding decreased due to no NGAT activities planned for FY24.			
Accomplishments/Planned Programs Subtotals	1.488	1.365	6.915

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 04 Line Item 10TRGT: *Target Drones*	112.443	128.906	74.543	-	74.543	61.181	55.043	51.562	53.309	0.000	536.987
• APAF 06 000999: *Initials Spares*	0.600	0.401	0.641	-	0.641	0.653	0.663	0.677	0.691	0.000	4.326
• APAF 07 000074: *War Consumables*	4.759	4.994	5.083	-	5.083	5.178	5.261	5.375	5.483	0.000	36.133
• APAF 07 Line Item 000075: *Other Production Charges*	16.450	17.188	17.493	-	17.493	17.812	18.105	18.497	18.867	0.000	124.412

Remarks

APAF, BA 04: Target Drones 10TRGT - Full Scale and Subscale Aerial Targets assure warfighters' weapon systems will perform effectively against real-world enemy fighters and cruise missiles. Adheres to Public Law title 10, Section 2366 "Live fire/Lethality" developmental/operational test requirements.

APAF, BA 06: Initial Spares/Repair Parts - Aircraft Initial Spares are required to fill the initial pipeline or inventory for all new aircraft systems, including modifications, support equipment, and other production categories. Initial spares include peculiar repairable and consumable components, assemblies, and sub-assemblies that must be available for issues at all levels of supply in time to support newly fielded end items.

APAF, BA 07: War Consumables - AFSAT Rocket-Assisted Take-Off (RATO) requirements executed at Hill AFB. A RATO is used in the initial launch phase to obtain appropriate speed and altitude.

APAF, BA 07: Other Production Charges - ALQ-167 and/or DLQ-9 Electronic Attack (EA) payloads for target drones including support equipment. Payloads emulate threat aircraft electronic countermeasures and jamming capabilities.

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 0305116F / *Aerial Targets*	**Project (Number/Name)** 675136 / *Target Systems Development*

D. Acquisition Strategy

The AFSAT acquisition strategy is a sole source follow-on contract. The Target Control System acquisition strategy includes several small projects to provide enhancements to TCS (to include AATTCS) and will be accomplished with other government agencies and contracts as needed. EA Payloads acquisition strategy includes several small projects managed by the US Navy program office to provide enhancements to the target payloads for aerial targets. Similarly, the acquisition strategy for NGAT includes multiple contract awards to various contractors as well as support from other government agencies.

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 0305116F / *Aerial Targets*	Project (Number/Name) 675136 / *Target Systems 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
Air Force Subscale Aerial Target (AFSAT) Product Improvements	SS/ Various	Various : CA	-	0.976	Aug 2022	0.886	Dec 2022	1.160	Dec 2023	-		1.160	Continuing	Continuing	-
Target Control System	Various	Eglin AFB : FL	-	0.413	Nov 2021	0.479	Nov 2022	5.755	Nov 2023	-		5.755	Continuing	Continuing	-
Next Generation Aerial Target (NGAT)	Various	Various : TBD	-	0.099	Mar 2022	0.000	Dec 2022	0.000		-		0.000	Continuing	Continuing	-
		Subtotal	-	1.488		1.365		6.915		-		6.915	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	-	1.488		1.365		6.915		-		6.915	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 0305116F / *Aerial Targets*	**Project (Number/Name)** 675136 / *Target Systems Development*

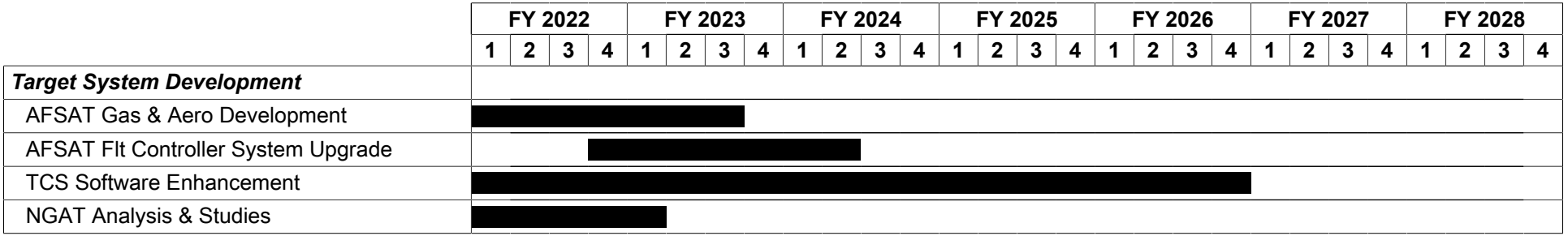

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305116F / *Aerial Targets*	**Project (Number/Name)** 675136 / *Target Systems Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Target System Development				
AFSAT Gas & Aero Development	1	2022	3	2023
AFSAT Flt Controller System Upgrade	4	2022	2	2024
TCS Software Enhancement	1	2022	4	2026
NGAT Analysis & Studies	1	2022	1	2023