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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force **Date:** April 2022

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 0605024F / <i>Anti-Tamper Technology Executive Agency</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	46.785	51.492	50.066	0.000	50.066	53.561	54.008	54.409	55.875	Continuing	Continuing
675066: <i>Anti-Tamper Technology Executive Agent</i>	-	46.785	51.492	50.066	0.000	50.066	53.561	54.008	54.409	55.875	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): N42

A. Mission Description and Budget Item Justification

The Anti-Tamper (AT) Technology Executive Agency budget funds activities related to the DoD Executive Agent for AT (ATEA) responsibilities required by DoD Directive 5200.47E, "Anti-Tamper (AT)." These responsibilities are unique to the DoD ATEA and the Air Force Component Office of Primary Responsibility (OPR) for AT. The DoD ATEA is responsible for developing and enforcing AT policy and guidance, assessing AT technologies (hardware and software), maintaining and developing new AT technology assessment capabilities, maintaining and maturing AT laboratory equipment and infrastructure, establishing and maintaining a library of AT technologies, providing security guidance and support mechanisms, providing outreach and education to the DoD AT community, providing intelligence support, and evaluating AT implementations across all DoD acquisition programs, foreign military sales (FMS), and direct commercial sales (DCS). The AF OPR for AT evaluates AT on applicable AF acquisition programs, FMS, and DCS as well as manages AF AT technology development.

AT directly enables CPI resiliency. AT protects critical program information (CPI) in U.S. weapon systems that are no longer under U.S. control (e.g., lost/left on the battlefield or sold to a foreign government) from hands-on, reverse engineering (RE) attacks. AT protections enable the U.S. to preserve its technological advantage and the combat capabilities of critical weapons systems while supporting the warfighters' mission requirements. Furthermore, AT adds longevity to DoD weapon systems by deterring or delaying RE attacks, and thus reducing an adversaries' ability to obtain the CPI and/or develop weapon countermeasures against the system. All DoD acquisition programs, FMS, and DCS with CPI require a validated AT Plan.

The AT program includes resources required for subject matter experts (SMEs) to evaluate AT Plans and conduct AT validation on all DoD Weapon Systems. Additionally, the AT program provides resources for SMEs to perform AT assessments of both commercial off the shelf (COTS) and government off the shelf (GOTS) products. As the COTS and GOTS technologies advance, the AT program includes the resources required to mature AT hardware/software assessment capabilities. These capabilities include the acquisition of specialized equipment, maintenance and/or renovations to support the integration of this equipment, and modifications to new and/or existing laboratory facilities to meet equipment and security requirements.

The DoD ATEA coordinates technology development among the DoD Services/Agencies, National Laboratories, and Industry. These technology development efforts fund development of new AT technology, as well as enhance existing AT technology efforts to increase the technology readiness level (TRL) and facilitate transition for programs to implement. The AT technology development and enhancement efforts include: advanced AT sensor hardware, secure processing, crypto-analysis, tamper penalties, modifying and developing technology to address vulnerability and susceptibility of fielded parts, and other AT enablers.

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The Air Force AT OPR conducts AT technology and product development to meet Air Force service needs to mature promising AT technologies to transition to Air Force weapons systems. Technology and product development priorities are given to those technologies/products that most benefit AF acquisition programs while aligning to the overall DoD ATEA technology and product development strategy. These activities are coordinated through the ATEA as a part of the ATEA technology and product development roadmap and to coordinate with Navy and Army AT technology development efforts.

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, 0605832F, 0605833F, 0605898F, 0606398F. In FY21 \$2.4M was expended for civilian pay expenses in this program element and in FY22 \$2.3M 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 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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	47.107	51.492	0.000	0.000	0.000
Current President's Budget	46.785	51.492	50.066	0.000	50.066
Total Adjustments	-0.322	0.000	50.066	0.000	50.066
• 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	-0.322	0.000			
• Other Adjustments	0.000	0.000	50.066	0.000	50.066

Change Summary Explanation

The FY 2022 President's Budget submittal did not reflect FY 2023 through FY 2026 funding. Therefore, an explanation of the change between the two budget positions for FY 2023 cannot be made in a relevant manner.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
Title: DoD Anti-Tamper Technology Executive Agent (DoD ATEA)	34.921	38.652	36.686
Description: AT technology and product coordination and evaluations, hardware/software vulnerability assessments, capability development, laboratory equipment and infrastructure improvements; outreach and education to the AT Community, AT implementation validation and evaluation as well as AT policy development.			

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>FY 2022 Plans: - Validate and evaluate AT implementations on all DoD Acquisition programs; conduct vulnerability assessments, develop advanced assessment capabilities, improve laboratory equipment and infrastructure, and provide intelligence support. Develop AT policy and continue to train the acquisition workforce on AT policy and technology.</p> <p>FY 2023 Plans: - Continue to validate and evaluate AT implementations on all DoD Acquisition programs; conduct vulnerability assessments, develop advanced assessment capabilities, improve laboratory equipment and infrastructure, and provide intelligence support. Develop AT policy and continue to train the acquisition workforce on AT policy and technology.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Funding decreased due to inflation adjustment</p>				
<p>Title: DoDATEA Program Management Support</p> <p>Description: Includes civilian pay, A&AS, outreach and education, travel, supplies, and AFLCMC/XA-AT support.</p> <p>FY 2022 Plans: Support program office efforts, including civilian pay, A&AS, intelligence support, outreach and education, travel, and supplies.</p> <p>FY 2023 Plans: Support program office efforts, including civilian pay, A&AS, intelligence support, outreach and education, travel, and supplies.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Funding increased due to inflation adjustment</p>		6.258	6.744	6.943
<p>Title: Air Force Anti-Tamper Office Technology and Product Development</p> <p>Description: The Air Force AT office conducts Anti-Tamper technology and product development to meet AF service needs to mature promising AT technologies to transition to AF weapon systems. The AF AT office will fund and manage new technology efforts to protect AF CPI. These new AT technology requirements will be obtained from AF programs and these new AT technologies will then transition to Air Force and DoD programs.</p> <p>The AT technology and product development and enhancement efforts include: advanced AT sensor hardware, secure processing, crypto-analysis, tamper penalties, and other AT enablers.</p> <p>FY 2022 Plans:</p>		5.606	6.096	6.437

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>The Air Force AT office conducts Anti-Tamper technology development to meet Air Force service needs to mature promising AT technologies to transition to Air Force weapons systems.</p> <p>FY 2023 Plans: The Air Force AT office conducts Anti-Tamper technology development to meet Air Force service needs to mature promising AT technologies to transition to Air Force weapons systems.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Funding increased due to inflation adjustment</p>				
Accomplishments/Planned Programs Subtotals		46.785	51.492	50.066
D. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
E. Acquisition Strategy				
<p>The DoD ATEA acquisition strategy is to coordinate DoD AT technology and product developments across the Services which fund development and assessments of new AT technology, as well as enhance existing AT technology efforts by increasing TRL. The ATEA will coordinate the Technology and Product Development Roadmap with major Prime vendors. Evaluating their AT CRADA projects is of major importance. The ATEA will also coordinate with the Service AT personnel to foster communication and understand what programs Services are developing for their AT implementation. Emerging research areas such as materials, cryptography and electronic circuits have the potential to bring new AT capabilities with increased processing power, reduced power draw, and smaller form factor. The goal of the research is to mature promising technologies to the point they can be transitioned to a program office or industry for implementation in DoD weapon systems. Priorities will be given to those technologies that most benefit the DoD AT community.</p> <p>The Air Force AT Office will fund and manage new technology and product efforts to protect Air Force critical program information. These new AT technology requirements will be obtained from AF programs and these new AT technologies will then transition to Air Force programs and be made available for use in other DoD weapon systems.</p>				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force												Date: April 2022			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)						Project (Number/Name)					
3600 / 7				PE 0605024F / Anti-Tamper Technology Executive Agency						675066 / Anti-Tamper Technology Executive Agent					
Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Force AT Technology and Product Development	Various	Not specified. : Dayton, OH	-	4.206	Oct 2020	6.096	Oct 2021	6.437	Oct 2022	-		6.437	Continuing	Continuing	-
Air Force Anti-Tamper Technology and Product Development	Various	Not specified. : Huntsville, AL	-	1.400	Oct 2020	-		-		-		-	Continuing	Continuing	-
Subtotal			-	5.606		6.096		6.437		-		6.437	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DoD Anti-Tamper Technology Executive Agent (DoD ATEA)	Various	Not specified. : Dayton, OH	-	8.185	Oct 2020	10.489	Oct 2021	8.558	Oct 2022	-		8.558	Continuing	Continuing	-
DoD ATEA Technology Executive Agent	Various	Not specified. : Huntsville, AL	-	7.629	Oct 2020	7.440	Oct 2021	7.688	Oct 2022	-		7.688	Continuing	Continuing	-
DoD AT Executive Agent Technology	Various	Not specified. : Crane, IN	-	7.961	Oct 2020	10.761	Oct 2021	8.715	Oct 2022	-		8.715	Continuing	Continuing	-
DoD Anti-Tamper Executive Agent	Various	Not specified. : Albuquerque, NM	-	10.770	Oct 2020	7.979	Oct 2021	9.097	Oct 2022	-		9.097	Continuing	Continuing	-
Subtotal			-	34.545		36.669		34.058		-		34.058	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DoDATEA Program Management Support	Various	Not specified. : Dayton, OH	-	6.258	Oct 2020	8.345	Oct 2021	9.183	Oct 2022	-		9.183	Continuing	Continuing	-
Air Force Tech Development Management Support	Various	Not specified. : Dayton, OH	-	0.376	Oct 2020	0.382	Oct 2021	0.388	Oct 2022	-		0.388	Continuing	Continuing	-
Subtotal			-	6.634		8.727		9.571		-		9.571	Continuing	Continuing	N/A

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Appropriation/Budget Activity 3600 / 7			R-1 Program Element (Number/Name) PE 0605024F / <i>Anti-Tamper Technology Executive Agency</i>				Project (Number/Name) 675066 / <i>Anti-Tamper Technology Executive Agent</i>				
	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals	-	46.785	51.492	50.066	-	50.066	Continuing	Continuing	N/A		

Remarks
Additional funding breakout and award dates are classified per the Anti-Tamper Security Classification Guide. Please contact the ATEA if additional information is required.

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0605024F / <i>Anti-Tamper Technology Executive Agency</i>	Project (Number/Name) 675066 / <i>Anti-Tamper Technology Executive Agent</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
ATEA				
ATEA Program Office	1	2021	4	2027
AT RDT&E	1	2021	4	2027
AT Technology Development	1	2021	4	2027