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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2022 Air Force **Date:** May 2021

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605024F / <i>Anti-Tamper Technology Executive Agency</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	-	46.934	47.107	51.492	0.000	51.492	-	-	-	-	-	-
675066: <i>Anti-Tamper Technology Executive Agent</i>	-	46.934	47.107	51.492	0.000	51.492	-	-	-	-	-	-
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 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 development to meet Air Force service needs to mature promising AT technologies to transition to Air Force weapons systems. Technology development priorities are given to those technologies that most benefit AF acquisition programs while aligning to the overall DoD ATEA technology development strategy. These activities are coordinated through the ATEA as a part of the ATEA technology 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 0605831F. In FY20 \$0 was expended for civilian pay expenses in this program element, and in FY21 \$0 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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
Previous President's Budget	47.193	50.508	52.241	0.000	52.241
Current President's Budget	46.934	47.107	51.492	0.000	51.492
Total Adjustments	-0.259	-3.401	-0.749	0.000	-0.749
• Congressional General Reductions	0.000	-0.086			
• Congressional Directed Reductions	0.000	-3.315			
• 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	-0.259	0.000			
• Other Adjustments	0.000	0.000	-0.749	0.000	-0.749

**Change Summary Explanation**

\$3.315M Congressional Directed Reduction for "lack of prior year execution data"  
 \$0.086M Congressional General Reduction for share of DAF RDT&E AF Undistributed Mark

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>
<b>Title:</b> DoD Anti-Tamper Technology Executive Agent (DoDATEA)	35.961	34.921	38.652
<b>Description:</b> AT technology 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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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>
<p><b>FY 2021 Plans:</b> - 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><b>FY 2022 Plans:</b> - 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><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> Funding increased due to inflation.</p>				
<p><b>Title:</b> DoDATEA Program Management Support</p> <p><b>Description:</b> Includes civilian pay, A&amp;AS, outreach and education, travel, supplies, and AFLCMC/XA-AT support.</p> <p><b>FY 2021 Plans:</b> Support program office efforts, including civilian pay, A&amp;AS, intelligence support, outreach and education, travel, and supplies.</p> <p><b>FY 2022 Plans:</b> Support program office efforts, including civilian pay, A&amp;AS, intelligence support, outreach and education, travel, and supplies.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> Funding increased due to inflation.</p>		5.873	6.580	6.744
<p><b>Title:</b> Air Force Anti-Tamper Office Technology Development</p> <p><b>Description:</b> The Air Force AT office conducts Anti-Tamper technology 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 development and enhancement efforts include: advanced AT sensor hardware, secure processing, crypto-analysis, tamper penalties, and other AT enablers.</p> <p><b>FY 2021 Plans:</b></p>		5.100	5.606	6.096

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>
<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><b>FY 2022 Plans:</b> 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><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> Funding increased due to inflation.</p>				
<b>Accomplishments/Planned Programs Subtotals</b>		46.934	47.107	51.492
<b>D. Other Program Funding Summary (\$ in Millions)</b>				
N/A				
<b>Remarks</b>				
<b>E. Acquisition Strategy</b>				
<p>The DoD ATEA acquisition strategy is to coordinate DoD AT technology 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 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 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 2022 Air Force** **Date:** May 2021

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0605024F / <i>Anti-Tamper Technology Executive Agency</i>	<b>Project (Number/Name)</b> 675066 / <i>Anti-Tamper Technology Executive Agent</i>
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<b>Product Development (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
Air Force Anti-Tamper Office Technology Development	Various	Not specified. : NV	-	5.100	Oct 2019	5.606	Oct 2020	6.096	Oct 2021	-		6.096	-	-	-
<b>Subtotal</b>			-	5.100		5.606		6.096		-		6.096	-	-	N/A

<b>Support (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
DoD Anti-Tamper Technology Executive Agent (DoDATEA)	Various	Not specified. : NV	-	35.961	Oct 2019	34.545	Oct 2020	38.270	Oct 2021	-		38.270	-	-	-
<b>Subtotal</b>			-	35.961		34.545		38.270		-		38.270	-	-	N/A

<b>Management Services (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
DoDATEA Program Management Support	Various	Not specified. : NV	-	5.503	Oct 2019	6.580	Oct 2020	6.744	Oct 2021	-		6.744	-	-	-
Air Force Tech Development Management Support	Various	Not specified. : NV	-	0.370	Oct 2019	0.376	Oct 2020	0.382	Oct 2021	-		0.382	-	-	-
<b>Subtotal</b>			-	5.873		6.956		7.126		-		7.126	-	-	N/A

			Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	46.934	47.107	51.492	-	51.492	-	-	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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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2022 Air Force</b>		<b>Date: May 2021</b>
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0605024F / <i>Anti-Tamper Technology Executive Agency</i>	<b>Project (Number/Name)</b> 675066 / <i>Anti-Tamper Technology Executive Agent</i>

	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	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
<b>ATEA</b>																												
ATEA Program Office																												
AT RDT&E																												
AT Technology Development																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2022 Air Force		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0605024F / <i>Anti-Tamper Technology Executive Agency</i>	<b>Project (Number/Name)</b> 675066 / <i>Anti-Tamper Technology Executive Agent</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>ATEA</b>				
ATEA Program Office	1	2020	4	2026
AT RDT&E	1	2020	4	2026
AT Technology Development	1	2020	4	2026