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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2021 Air Force **Date:** February 2020

<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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	32.182	47.193	50.508	0.000	50.508	52.241	49.907	53.636	54.406	Continuing	Continuing
675066: <i>Anti-Tamper Technology Executive Agent</i>	-	32.182	47.193	50.508	0.000	50.508	52.241	49.907	53.636	54.406	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, and direct commercial sales. The AF OPR for AT evaluates AT on applicable AF acquisition programs, FMS, and DCS as well as manages AF AT technology development.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Anti-Tamper Executive Agent weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

AT protects critical program information (CPI) in U.S. weapon systems that may be sold to foreign governments or that could possibly fall into enemy hands on the battlefield. AT protections permit 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 and critical technologies by deterring efforts to reverse engineer or develop weapon countermeasures against the system or system component.

All DoD acquisition programs, Foreign Military Sales, and Direct Commercial Sales with critical program information (CPI) require a validated AT Plan. The AT program includes resources required for subject matter experts (SMEs) to review AT Plans and conduct AT validation on all DoD Weapon Systems, and perform AT assessments of both commercial off the shelf and government off the shelf products. As technology advances, AT continues to perform 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. The DoD ATEA technology development strategy is to coordinate DoD AT technology development across the Services which fund development of new AT technology, as well as enhance existing AT

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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.

The Air Force AT OPR conducts Anti-Tamper 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. 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 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 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
Previous President's Budget	32.770	47.193	50.583	0.000	50.583
Current President's Budget	32.182	47.193	50.508	0.000	50.508
Total Adjustments	-0.588	0.000	-0.075	0.000	-0.075
• 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	-0.588	0.000	-0.075	0.000	-0.075

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<b>Title:</b> DoD Anti-Tamper Technology Executive Agent (DoDATEA)	22.646	35.403	37.787
<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 implementation of AT policy development.			
<b>FY 2020 Plans:</b> - Validate and evaluate AT implementations on all DoD Acquisition programs; conduct vulnerability assessments, improve laboratory equipment and infrastructure, and provide intelligence support. Develop AT policy and continue to train the acquisition workforce on AT policy and technology.			
<b>FY 2021 Plans:</b>			

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<p>- Validate and evaluate AT implementations on all DoD Acquisition programs; conduct vulnerability assessments, 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 2020 to FY 2021 Increase/Decrease Statement:</b> Funding increased due to additional laboratory recapitalization requirements in FY21.</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/WWG support.</p> <p><b>FY 2020 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 Plans:</b> Support program office efforts, including civilian pay, A&amp;AS, intelligence support, outreach and education, travel, and supplies.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Funding increased due to inflation.</p>		5.136	6.690	6.721
<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 Air Force service needs to mature promising AT technologies to transition to Air Force weapon systems.</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>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><b>FY 2020 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>		4.400	5.100	6.000

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2021 Air Force		<b>Date:</b> February 2020		
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<p>The AT technology development and enhancement efforts include: advanced AT sensor hardware, secure processing, crypto-analysis, tamper penalties, and other AT enablers. Technology development priorities will be given to those technologies that most benefit AF acquisition programs.</p> <p><b>FY 2021 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>The AT technology development and enhancement efforts include: advanced AT sensor hardware, secure processing, crypto-analysis, tamper penalties, and other AT enablers. Technology development priorities will be given to those technologies that most benefit AF acquisition programs.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Funding increased due to program ramp-up.</p>				
<b>Accomplishments/Planned Programs Subtotals</b>		32.182	47.193	50.508
<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 our 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.</p>				

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force** **Date:** February 2020

<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 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Product Development	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-
Air Force Anti-Tamper Office Technology Development	Various	Not specified. : NV	-	4.400		5.100		6.000		-		6.000	Continuing	Continuing	-
<b>Subtotal</b>			-	4.400		5.100		6.000		-		6.000	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Support	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-
DoD Anti-Tamper Technology Executive Agent (DoDATEA)	Various	Not specified. : NV	-	22.646		35.403		37.787		-		37.787	Continuing	Continuing	-
<b>Subtotal</b>			-	22.646		35.403		37.787		-		37.787	Continuing	Continuing	N/A

**Remarks**  
This funding is to support DoD ATEA requirements. However, funding is broken out between DoD ATEA and Air Force AT requirements.

<b>Management Services (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Management Services	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-
DoDATEA Program Management Support	Various	Not specified. : NV	-	5.136		6.690		6.721		-		6.721	Continuing	Continuing	-
<b>Subtotal</b>			-	5.136		6.690		6.721		-		6.721	Continuing	Continuing	N/A

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>		-	32.182	47.193	50.508	-	50.508	Continuing	Continuing	N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2021 Air Force							<b>Date:</b> February 2020			
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	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	

**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:</b> PB 2021 Air Force		<b>Date:</b> February 2020
<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 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
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	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Air Force		<b>Date:</b> February 2020
<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	2019	4	2025
AT RDT&E	1	2019	4	2025