

<b>Exhibit R-2, RDT&amp;E Budget Item Justification</b>	DATE <b>May 2009</b>
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<b>BUDGET ACTIVITY</b> <b>07 Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0605024F Anti-Tamper Technology Executive Agent</b>
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Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	12.399	20.912	47.276	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
5066 Anti-Tamper Technology Executive Agent	12.399	20.912	47.276	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

**(U) A. Mission Description and Budget Item Justification**

The Air Force is the DoD Anti-Tamper Executive Agent (ATEA). The ATEA is responsible for implementing Anti-Tamper (AT) policy, coordinating and providing financial support for AT technology development, establishing and maintaining a data bank/library, providing proper security mechanisms, conducting effective validation and assessing AT implementations. The purpose of developing AT techniques is to protect critical technologies in U.S. weapon systems that may be sold to foreign governments or that could possibly fall into enemy hands. AT technology will permit the U.S. to preserve its critical weapons systems lead while also satisfying customer needs. Furthermore, AT will add longevity to critical technologies by deterring efforts to reverse engineer or develop weapon countermeasures against a system or system component.

As the DoD Anti-Tamper Executive Agent, the Air Force will coordinate the technology development enhancement among the Services, DoD Agencies, and laboratories, and with industry. The DoD ATEA will not issue contracts for AT technology development but will plus-up existing Anti-Tamper technology projects to increase their technology readiness level. Priorities will be given to technologies that benefit the majority of the AT community. The Anti-Tamper technology enhancement will occur in the following areas: advanced sensor hardware, generic electronic hardware, signature control, access detection & denial, software, and effectiveness. The program management activities will coordinate the technology development and establish the Anti-Tamper data bank/library.

Anti-Tamper validation is a significant responsibility assigned to the Air Force. All DoD acquisition programs, Foreign Military Sales, and Direct Commercial Sales with critical technology/critical information are required to have an Anti-Tamper plan with appropriate validation. The resources required to review Anti-Tamper plans and conduct Anti-Tamper validation began to increase in late FY03. Based on Anti-Tamper validation requirement projections, the number of Anti-Tamper experts needs to expand.

Beginning in FY09 additional funding has been dedicated to the technical development of new AT capabilities. Emerging research in the areas of materials, cryptography and electronic circuits has the potential to bring new AT capabilities that have reduced power needs, a smaller form factor, and less detectability by nation class adversary using state of the art reverse engineering tools. The goal of the research is to mature promising technologies to the point that they can be transitioned to a program office or industry prime for implementation in our weapons systems.

This program is in Budget Activity 07, Operational System Development, because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding.

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BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0605024F Anti-Tamper Technology Executive Agent

(U) **B. Program Change Summary (\$ in Millions)**

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Previous President's Budget	12.399	20.912	47.276
(U) Current PBR/President's Budget	12.399	20.912	47.276
(U) Total Adjustments	0.000	0.000	
(U) Congressional Program Reductions			
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer			
(U) <u>Significant Program Changes:</u>			
None			

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>	DATE <b>May 2009</b>
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<b>BUDGET ACTIVITY</b> 07 Operational System Development				<b>PE NUMBER AND TITLE</b> 0605024F Anti-Tamper Technology Executive Agent				<b>PROJECT NUMBER AND TITLE</b> 5066 Anti-Tamper Technology Executive Agent		
Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
5066 Anti-Tamper Technology Executive Agent	12.399	20.912	47.276	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) **A. Mission Description and Budget Item Justification**

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Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY <b>07 Operational System Development</b>	PE NUMBER AND TITLE <b>0605024F Anti-Tamper Technology Executive Agent</b>	PROJECT NUMBER AND TITLE <b>5066 Anti-Tamper Technology Executive Agent</b>
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(U) <b><u>B. Accomplishments/Planned Program (\$ in Millions)</u></b>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) AFRL/SNT Management	1.723	2.213	2.419
(U) ATEA Other - Outsource	0.722	0.410	0.550
(U) Anti-Tamper Verification & Validation	3.142	4.347	4.340
(U) Anti-Tamper Assessments	5.181	3.088	5.660
(U) Anti-Tamper Technology Development	1.631	10.854	34.307
(U)			
(U) Total Cost	12.399	20.912	47.276

(U) <b><u>C. Other Program Funding Summary (\$ in Millions)</u></b>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) N/A										

(U) **D. Acquisition Strategy**  
 The DoD ATEA technology development enhancement funding will be used to support existing AT technology development contracts. This funding will be used to increase the technology readiness level for that particular AT technology so as to reduce the risk to programs wanting to implement this AT technology. The DoD ATEA conducts yearly evaluations of technologies, provided by the AT Tri-Service community.

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**Exhibit R-3, RDT&E Project Cost Analysis**

DATE

**May 2009**

BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE			
<b>07 Operational System Development</b>				<b>0605024F Anti-Tamper Technology Executive Agent</b>					<b>5066 Anti-Tamper Technology Executive Agent</b>			
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) <u>AFRL/SNT Management</u>												
Program Oversight				0.822		1.280		1.043		Continuing	TBD	TBD
Security/Infrastructure				0.223		0.257		0.265		Continuing	TBD	TBD
Databases and websight				0.355		0.460		0.701		Continuing	TBD	
Education and Outreach				0.323		0.216		0.410		Continuing	TBD	
Subtotal AFRL/SNT Management			0.000	1.723		2.213		2.419		Continuing	TBD	TBD
Remarks:												
(U) <u>A TEA Other Outsource</u>												
Conference outsource				0.068		0.060		0.050		Continuing	TBD	TBD
AFRL/AT-SPI	Allot			0.017		0.065		0.075		Continuing	TBD	TBD
AT Course				0.138		0.125		0.055		Continuing	TBD	TBD
DAU Course				0.000		0.068		0.065		Continuing	TBD	TBD
Sandia National Lab				0.500		0.092		0.305		Continuing	TBD	TBD
Subtotal ATEA Other Outsource			0.000	0.723		0.410		0.550		Continuing	TBD	TBD
Remarks:												
(U) <u>Anti-Tamper Verification &amp; Validation</u>												
Army	MIPR			0.800		0.800		0.810		Continuing	TBD	
Navy	MIPR			0.475		0.800		0.810		Continuing	TBD	
Air Force	MIPR			0.800		0.800		0.810		Continuing	TBD	
Sandia	MIPR			0.678		0.648		0.720		Continuing	TBD	
AT-SPI SW AT support				0.115		0.324		0.354			0.793	
AT-SPI IRCM AT Support				0.274		0.000					0.274	
V&V Contingency				0.000		0.975		0.100			1.075	
Network Training				0.000		0.000		0.056			0.056	
Sandia V&V Training	MIPR			0.000		0.000		0.680			0.680	
Subtotal Anti-Tamper Verification & Validation			0.000	3.142		4.347		4.340		Continuing	TBD	0.000
Remarks:												
(U) <u>Anti-Tamper Assessments</u>												
Air Force AT Field Agent (412 TW/EWF)	MIPR										0.000	
AFRL/SND				0.400							0.400	
NAWC CRANE (Navy)	MIPR			0.630		0.425		0.975			2.030	
Army AT Field Agent (Aviation & Missile Cmd/Redstone)	MIPR							0.560			0.560	
DoD Executive Agent Field Agent (AFRL/AT-SPI)	Allot										0.000	
Sandia National Lab	MIPR			4.151		2.580		2.900		Continuing	TBD	
Assessment Contract Activities				0.000		0.083		1.225			1.308	
Subtotal Anti-Tamper Assessments			0.000	5.181		3.088		5.660		Continuing	TBD	0.000

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Project 5066

Exhibit R-3 (PE 0605024F)

Exhibit R-3, RDT&E Project Cost Analysis

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BUDGET ACTIVITY <b>07 Operational System Development</b>	PE NUMBER AND TITLE <b>0605024F Anti-Tamper Technology Executive Agent</b>	PROJECT NUMBER AND TITLE <b>5066 Anti-Tamper Technology Executive Agent</b>
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Remarks: <u>Anti-Tamper Technology Development</u>										
(U)	<u>Enhancements</u>									
	AFRL/AT-SPI	PRDA								0.000
	Sandia National Lab	MIPR								0.000
	Technology Contract Activities		1.630	10.854	34.307					46.791
	Subtotal Anti-Tamper Technology Development Enhancements		0.000	1.630	10.854	34.307	0.000	46.791	0.000	
Remarks:										
(U)	<u>New Activity Funds</u>									
	New Activity Funds		0.000				Continuing	TBD		
	Subtotal New Activity Funds		0.000	0.000	0.000	0.000	Continuing	TBD	0.000	
Remarks:										
(U)	Total Cost		0.000	12.399	20.912	47.276	Continuing	TBD	TBD	

Exhibit R-4, RDT&E Schedule Profile

DATE

May 2009

BUDGET ACTIVITY  
07 Operational System Development

PE NUMBER AND TITLE  
0605024F Anti-Tamper Technology  
Executive Agent

PROJECT NUMBER AND TITLE  
5066 Anti-Tamper Technology  
Executive Agent

PE 0605024F - Anti-Tamper Executive Agency

FUNCTIONS	FY08				FY09				FY10			
	1	2	3	4	1	2	3	4	1	2	3	4
<b>ATEA Field Office</b>												
Databases & Website Updates & Maintenance												
Education & Outreach												
<b>ATEA Other</b>												
AT Conference			▲				▲					▲
<b>V&amp;V</b>												
Program V&V Evaluations												
<b>Assessment</b>												
Review Assessment Proposals												
Tri-Service Coordination												
Reviews												
<b>Technology Enhancement</b>												
Review Technology Proposals												
Tri-Service Coordination												
Reviews												

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<b>Exhibit R-4a, RDT&amp;E Schedule Detail</b>	DATE <b>May 2009</b>
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<b>BUDGET ACTIVITY</b> <b>07 Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0605024F Anti-Tamper Technology Executive Agent</b>	<b>PROJECT NUMBER AND TITLE</b> <b>5066 Anti-Tamper Technology Executive Agent</b>
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	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) <b><u>Schedule Profile</u></b>			
(U) ATEA Field Office	1-4Q	1-4Q	1-4Q
(U) Database and Website Updates & Maintenance	1-4Q	1-4Q	1-4Q
(U) Education & Outreach	1-4Q	1-4Q	1-4Q
(U) AT Conference	2-3Q	2-3Q	2-3Q
(U) Program V&V Evaluations	1-4Q	1-4Q	1-4Q
(U) Assessments	2-3Q	2-3Q	2-3Q
(U) --Assessment Proposal Reviews	2Q	2Q	2Q
(U) --Assessment Tri-Service Coordination	3Q	3Q	3Q
(U) Anti-Tamper Technology Development Enhancement	1-4Q	1-4Q	1-4Q
(U) --Tech. Proposal Reviews	2Q	2Q	2Q
(U) --Technology Tri-Service Coordination	3Q	3Q	3Q
(U) --Tech Reviews	4Q	4Q	4Q