

UNCLASSIFIED

PE NUMBER: 0605024F

PE TITLE: Anti-Tamper Technology Executive Agent

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2007
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0605024F Anti-Tamper Technology Executive Agent
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Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	10.029	7.984	10.930	11.161	15.634	15.756	15.975	16.143	Continuing	TBD
5066 Anti-Tamper Technology Executive Agent	10.029	7.984	10.930	11.161	15.634	15.756	15.975	16.143	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 from OSD. 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 ramp-up in late FY03. Based on Anti-Tamper validation requirement projections, the number of Anti-Tamper experts needs to expand.

A new thrust for the DoD Anti-Tamper Executive Agent, starting in FY06, is Anti-Tamper assessments. Anti-Tamper assessments involve the process of evaluating how well AT is implemented on weapon systems. Tri-Service reverse engineers and other government agencies will conduct the assessments. Assessments will answer the question as to how well the DoD Anti-Tamper community is doing in designing and implementing AT protection on DoD systems. Conducting Anti-Tamper assessments will also benefit the Anti-Tamper government community as a training tool for new AT reverse engineers.

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2007

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 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	7.529			
(U) Current PBR/President's Budget	10.029	7.984	10.930	11.161
(U) Total Adjustments	2.500			
(U) Congressional Program Reductions				
Congressional Rescissions				
Congressional Increases				
Reprogrammings	2.500			
SBIR/STTR Transfer				
(U) <u>Significant Program Changes:</u>				
None				

Exhibit R-2a, RDT&E Project Justification

DATE
February 2007

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		
Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
5066 Anti-Tamper Technology Executive Agent	10.029	7.984	10.930	11.161	15.634	15.756	15.975	16.143	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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A new thrust for the DoD Anti-Tamper Executive Agent, starting in FY06, is Anti-Tamper assessments. Anti-Tamper assessments involve the process of evaluating how well AT is implemented on weapon systems. Tri-Service reverse engineers and other government agencies will conduct the assessments. Assessments will answer the question as to how well the DoD Anti-Tamper community is doing in designing and implementing AT protection on DoD systems. Conducting Anti-Tamper assessments will also benefit the Anti-Tamper government community as a training tool for new AT reverse engineers.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Accomplishments/Planned Program	0.000	0.000		
(U) Anti-Tamper Technology Development	1.815	0.632	2.000	2.100
(U) Anti-Tamper Verification & Validation	3.827	3.119	3.500	3.556
(U) Education, Out-Reach and other Support	0.472	1.053	0.577	0.636

Exhibit R-2a, RDT&E Project Justification

DATE
February 2007

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
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(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Anti-Tamper Assessments	3.247	1.714	3.436	3.436
(U) AFRL/SNT Management	0.668	1.466	1.417	1.433
(U) Total Cost	10.029	7.984	10.930	11.161

(U) <u>C. Other Program Funding Summary (\$ in Millions)</u>	<u>FY 2006</u>	<u>FY 2007</u>	<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>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.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE
February 2007

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
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(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2006 Cost</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
<u>Anti-Tamper Technology Development</u>														
(U) <u>Enhancements</u>														
AFRL/AT-SPI	PRDA			0.000		0.000		0.000		0.000		Continuing	TBD	TBD
Sandia National Lab	MIPR			0.000		0.000						Continuing	TBD	TBD
Technology Contract Activities				1.815		0.632		2.000		2.100		Continuing	TBD	TBD
Subtotal Anti-Tamper Technology Development Enhancements			0.000	1.815		0.632		2.000		2.100		Continuing	TBD	TBD
Remarks:														
(U) <u>Anti-Tamper Verification & Validation</u>														
Air Force AT Field Agent (412 TW/EWF)	MIPR			0.450		0.600		0.800		0.800		Continuing	TBD	TBD
Navy AT Field Agent (PMR-51)	MIPR			0.600		0.600		0.800		0.800		Continuing	TBD	TBD
Army AT Field Agent (Aviation & Missile Cmd/Redstone)	MIPR			1.000		0.600		0.800		0.800		Continuing	TBD	TBD
DoD Executive Agent Field Agent (AFRL/AT-SPI)	Allot			1.427		0.519		0.200		0.241		Continuing	TBD	TBD
Sandia National Lab	MIPR			0.350		0.400		0.700		0.715		Continuing	TBD	TBD
Contingency Planning				0.000		0.400		0.200		0.200		Continuing	TBD	TBD
Subtotal Anti-Tamper Verification & Validation			0.000	3.827		3.119		3.500		3.556		Continuing	TBD	TBD
Remarks:														
(U) <u>Education, Out-Reach, and other support</u>														
AFMC/A9S				0.000		0.000						Continuing	TBD	TBD
AFRL/AT-SPI	Allot			0.352		0.548		0.551		0.580		Continuing	TBD	TBD
AT Course				0.000		0.400		0.001		0.001		Continuing	TBD	TBD
DAU Course				0.050		0.025		0.025		0.025		Continuing	TBD	TBD
Sandia National Lab				0.070		0.080				0.030		Continuing	TBD	TBD
Subtotal Education, Out-Reach, and other support			0.000	0.472		1.053		0.577		0.636		Continuing	TBD	TBD
Remarks:														
(U) <u>Anti-Tamper Assessments</u>														
Air Force AT Field Agent (412 TW/EWF)	MIPR											Continuing	TBD	TBD
AFRL/SND				0.150								Continuing	TBD	TBD
Navy AT Field Agent (PMR-51)	MIPR			0.275								Continuing	TBD	TBD
Army AT Field Agent (Aviation & Missile Cmd/Redstone)	MIPR											Continuing	TBD	TBD
DoD Executive Agent Field Agent (AFRL/AT-SPI)	Allot											Continuing	TBD	TBD
Sandia National Lab	MIPR			2.700								Continuing	TBD	TBD

R-1 Line Item No. 118

Page-5 of 8

Project 5066

Exhibit R-3 (PE 0605024F)

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE
February 2007

BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT NUMBER AND TITLE		
07 Operational System Development			0605024F Anti-Tamper Technology Executive Agent			5066 Anti-Tamper Technology Executive Agent		
Assessment Contract Activities		0.122	1.714	3.436	3.436	Continuing	TBD	TBD
Subtotal Anti-Tamper Assessments	0.000	3.247	1.714	3.436	3.436	Continuing	TBD	TBD
Remarks:								
(U) <u>AFRL/SNT Management</u>								
Program Oversight		0.668	0.823	0.805	0.810	Continuing	TBD	TBD
Security/Infrastructure			0.255	0.256	0.260	Continuing	TBD	TBD
Databases and websight			0.348	0.316	0.323	Continuing	TBD	TBD
Conference			0.040	0.040	0.040	Continuing	TBD	TBD
Subtotal AFRL/SNT Management	0.000	0.668	1.466	1.417	1.433	Continuing	TBD	TBD
Remarks:								
(U) Total Cost	0.000	10.029	7.984	10.930	11.161	Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2007

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	FY06				FY07				FY08				FY09				FY10				FY11				FY12				FY13			
	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	1	2	3	4
ATEA Field Office																																
Databases & Website Updates & Maintenance																																
Education & Outreach																																
ATEA Other																																
AT Conference			▲				▲				▲				▲				▲				▲				▲				▲	
V&V																																
Program V&V Evaluations																																
Assessment																																
Review Assessment Proposals			◆				◆				◆				◆				◆				◆				◆				◆	
Tri-Service Coordination			◆				◆				◆				◆				◆				◆				◆				◆	
Reviews	▶			▶	▶			▶	▶			▶	▶			▶	▶			▶	▶			▶	▶			▶	▶			▶
Technology Enhancement																																
Review Technology Proposals			◆				◆				◆				◆				◆				◆				◆				◆	
Tri-Service Coordination			◆				◆				◆				◆				◆				◆				◆				◆	
Reviews	▶			▶	▶			▶	▶			▶	▶			▶	▶			▶	▶			▶	▶			▶	▶			▶

UNCLASSIFIED

Exhibit R-4a, RDT&E Schedule Detail	DATE February 2007
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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
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(U) <u>Schedule Profile</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) ATEA Field Office	1-4Q	1-4Q	1-4Q	1-4Q
(U) Database and Website Updates & Maintenance	1-4Q	1-4Q	1-4Q	1-4Q
(U) Education & Outreach	1-4Q	1-4Q	1-4Q	1-4Q
(U) AT Conference	2-3Q	2-3Q	2-3Q	2-3Q
(U) Program V&V Evaluations	1-4Q	1-4Q	1-4Q	1-4Q
(U) Assessments	2-3Q	2-3Q	2-3Q	2-3Q
(U) --Assessment Proposal Reviews	2Q	2Q	2Q	2Q
(U) --Assessment Tri-Service Coordination	3Q	3Q	3Q	3Q
(U) Anti-Tamper Technology Development Enhancement	1-4Q	1-4Q	1-4Q	1-4Q
(U) --Tech. Proposal Reviews	2Q	2Q	2Q	2Q
(U) --Technology Tri-Service Coordination	3Q	3Q	3Q	3Q
(U) --Tech Reviews	4Q	4Q	4Q	4Q