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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force **Date:** March 2014

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| 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> |
|--|--|

| COST (\$ in Millions) | Prior Years | FY 2013 | FY 2014 | FY 2015 Base | FY 2015 OCO # | FY 2015 Total | FY 2016 | FY 2017 | FY 2018 | FY 2019 | Cost To Complete | Total Cost |
|---|-------------|---------|---------|--------------|---------------|---------------|---------|---------|---------|---------|------------------|------------|
| Total Program Element | - | 30.413 | 26.541 | 34.815 | - | 34.815 | 29.895 | 28.308 | 28.823 | 29.369 | Continuing | Continuing |
| 675066: <i>Anti-Tamper Technology Executive Agent</i> | - | 30.413 | 26.541 | 34.815 | - | 34.815 | 29.895 | 28.308 | 28.823 | 29.369 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Air Force is the DoD Anti-Tamper Executive Agent (ATEA). The ATEA is responsible for developing and implementing Anti-Tamper (AT) policy, coordinating and providing financial support for AT technology development and evaluations, hardware/software vulnerability assessments, laboratory infrastructure, establishing and maintaining a data bank/library of Anti-Tamper technologies, providing proper security mechanisms, and conducting effective validation and verification of AT implementations. The purpose of AT is to protect critical program information in U.S. weapon systems that may be sold to foreign governments or that could possibly fall into enemy hands. AT protections will permit the U.S. to preserve its technological advantage of critical weapons systems while supporting the warfighters mission requirements. Furthermore, AT will add longevity to DoD critical technologies by deterring efforts to reverse engineer or develop weapon countermeasures against a system or system component.

The DoD ATEA will coordinate technology development and enhancement efforts among the DoD Services/Agencies, National Laboratories, and industry. The DoD ATEA acquisition strategy is to fund development of new AT technology, as well as enhancing existing AT technology efforts to increase the technology readiness level (TRL). The AT technology development and enhancement efforts will occur in multiple areas, including the following: Advanced sensor hardware, secure processing, crypto-analysis, tamper penalties, and power solutions. Emerging research in the areas of materials, cryptography and electronic circuits has the potential to bring new AT capabilities that have reduced power needs and smaller form factor. The goal of the research is to mature promising technologies to the point that they can be transitioned to a program office or industry for implementation in our weapons systems. Priorities will be given to those technologies that most benefit the DoD AT community.

All DoD acquisition programs, Foreign Military Sales, and Direct Commercial Sales with critical program information (CPI) and/or resident-critical program information (R-CPI) require a validated AT Plan. The AT program includes resources required for the subject matter experts (SMEs) to review AT Plans and conduct AT validation, and perform AT assessments of both commercial off the shelf and government of the shelf products. To maintain its advantage, the AT program continues to improve its 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.

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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| B. Program Change Summary (\$ in Millions) | FY 2013 | FY 2014 | FY 2015 Base | FY 2015 OCO | FY 2015 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget | 17.037 | 32.086 | 39.830 | - | 39.830 |
| Current President's Budget | 30.413 | 26.541 | 34.815 | - | 34.815 |
| Total Adjustments | 13.376 | -5.545 | -5.015 | - | -5.015 |
| • Congressional General Reductions | -0.049 | - | | | |
| • Congressional Directed Reductions | - | -5.545 | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | 20.000 | - | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | -5.470 | - | | | |
| • SBIR/STTR Transfer | -0.531 | - | | | |
| • Other Adjustments | -0.574 | - | -5.015 | - | -5.015 |

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 675066: *Anti-Tamper Technology Executive Agent*

Congressional Add: *Alternative Power Sources*

| | FY 2013 | FY 2014 |
|---|----------------|----------------|
| | 20.000 | - |
| Congressional Add Subtotals for Project: 675066 | 20.000 | - |
| Congressional Add Totals for all Projects | 20.000 | - |

Change Summary Explanation

FY13: Reduction in other adjustments for sequestration; reprogrammed funds due to higher Air Force priorities.

FY14: Congressional Directed Reduction due to forward financing.

FY15: Reduction due to higher Air Force priorities.

C. Accomplishments/Planned Programs (\$ in Millions)

| | FY 2013 | FY 2014 | FY 2015 |
|--|----------------|----------------|----------------|
| Title: Anti-Tamper Technology | 7.913 | 23.706 | 31.865 |
| Description: Continue development of AT technology development and evaluations, hardware/software vulnerability assessments, laboratory infrastructure, alternate power sources, conduct effective validation and verification of AT implementation as well as implementation of AT policy. | | | |
| FY 2013 Accomplishments: | | | |

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|--|--|

| C. Accomplishments/Planned Programs (\$ in Millions) | FY 2013 | FY 2014 | FY 2015 |
|--|----------------|----------------|----------------|
| Continue development of AT technology development and evaluations, hardware/software vulnerability assessments, laboratory infrastructure, alternate power sources, conduct effective validation and verification of AT implementation as well as implementation of AT policy. FY 2014 Plans: Continue advanced Anti-Tamper Technology Executive Agent activities including: AFRL/Ryw Management, ATEA outsourcing, Anti-Tamper Verification and Validation, Assessments and Technology Development. FY 2015 Plans: Continue development of AT technology development and evaluations, hardware/software vulnerability assessments, laboratory infrastructure, alternate power sources, conduct effective validation and verification of AT implementation as well as implementation of AT policy. | | | |
| Title: Program Management Support Description: Includes A&AS, travel, supplies, civilian pay, AFLCMC/WWG support FY 2013 Accomplishments: Includes A&AS, travel, supplies, civilian pay, AFLCMC/WWG support FY 2014 Plans: Includes A&AS, travel, supplies, civilian pay, AFLCMC/WWG support FY 2015 Plans: Includes A&AS, travel, supplies, civilian pay, AFLCMC/WWG support | 2.500 | 2.835 | 2.950 |
| Accomplishments/Planned Programs Subtotals | 10.413 | 26.541 | 34.815 |

| | FY 2013 | FY 2014 |
|---|----------------|----------------|
| Congressional Add: Alternative Power Sources FY 2013 Accomplishments: Alternative power sources for anti-tamper technology | 20.000 | - |
| Congressional Adds Subtotals | 20.000 | - |

| D. Other Program Funding Summary (\$ in Millions) | FY 2013 | FY 2014 | FY 2015 Base | FY 2015 OCO | FY 2015 Total | FY 2016 | FY 2017 | FY 2018 | FY 2019 | Cost To Complete | Total Cost |
|--|----------------|----------------|---------------------|--------------------|----------------------|----------------|----------------|----------------|----------------|-------------------------|-------------------|
| • NONE: N/A | - | - | - | - | - | - | - | - | - | - | - |

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|--|--|

D. Other Program Funding Summary (\$ in Millions)

| <u>Line Item</u> | <u>FY 2013</u> | <u>FY 2014</u> | <u>FY 2015</u> <u>Base</u> | <u>FY 2015</u> <u>OCO</u> | <u>FY 2015</u> <u>Total</u> | <u>FY 2016</u> | <u>FY 2017</u> | <u>FY 2018</u> | <u>FY 2019</u> | <u>Cost To</u> <u>Complete</u> | <u>Total Cost</u> |
|------------------|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|
|------------------|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|

Remarks

E. Acquisition Strategy

The DoD ATEA acquisition strategy is to fund development and assessments of new AT technology, as well as enhance existing AT technology efforts by increasing TRL. The AT technology development and enhancement efforts will occur in multiple areas, including the following: Advanced sensor hardware, secure processing, crypto-analysis, tamper penalties, and power solutions. Emerging research in the areas of materials, cryptography and electronic circuits has the potential to bring new AT capabilities that have reduced power needs and smaller form factor. The goal of the research is to mature promising technologies to the point that they can be transitioned to a program office or industry for implementation in our weapons systems. Priorities will be given to those technologies that most benefit the DoD AT community.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force

Date: March 2014

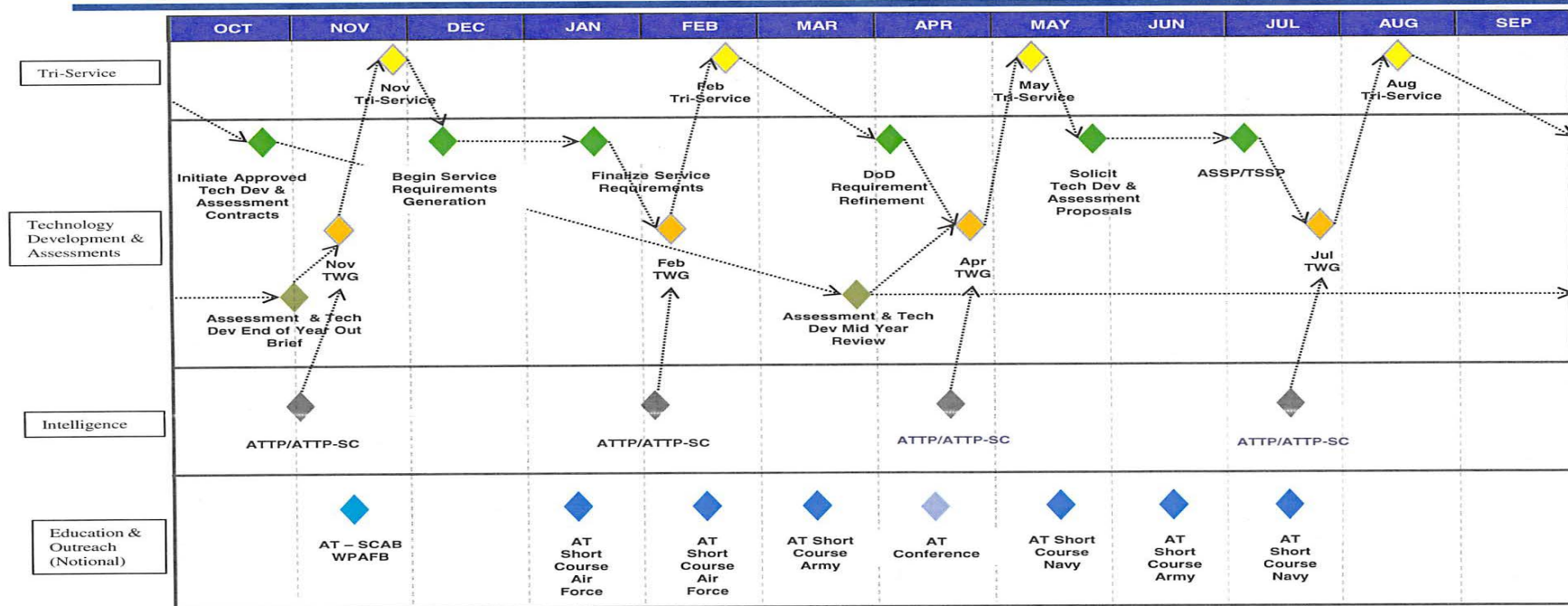
Appropriation/Budget Activity
3600 / 7

R-1 Program Element (Number/Name)
PE 0605024F / Anti-Tamper Technology
Executive Agency

Project (Number/Name)
675066 / Anti-Tamper Technology Executive
Agent



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(U)AT Battle Rhythm Chart



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