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| Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force | | | | | | | | | | Date: February 2015 | | |
|-----------------------------------------------------------------------------------------------------------------------|-------------|---------|---------|--------------|--------------------------------------------------|---------------|---------|---------|---------|---------------------|------------------|------------|
| Appropriation/Budget Activity | | | | | R-1 Program Element (Number/Name) | | | | | | | |
| 3600: Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P) | | | | | PE 0603830F I Space Security and Defense Program | | | | | | | |
| COST (\$ in Millions) | Prior Years | FY 2014 | FY 2015 | FY 2016 Base | FY 2016 OCO | FY 2016 Total | FY 2017 | FY 2018 | FY 2019 | FY 2020 | Cost To Complete | Total Cost |
| Total Program Element | - | 23.986 | 31.613 | 30.771 | - | 30.771 | 32.722 | 31.786 | 31.250 | 31.810 | Continuing | Continuing |
| 64A025: Space Protection Program | - | 23.986 | 31.613 | 30.771 | - | 30.771 | 32.722 | 31.786 | 31.250 | 31.810 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

A. Mission Description and Budget Item Justification

This Program Element funds the DoD/Air Force component of the Space Security and Defense Program (SSDP). The SSDP is a Joint Department of Defense (DoD) and Office of the Director of National Intelligence (ODNI) organization established to function as the center of excellence for options and strategies (materiel, non-materiel, cross-Title, cross-domain) leading to a more resilient and enduring National Security Space (NSS) Enterprise. The SSDP Operates under the authority of the Deputy Secretary of Defense (DEPSECDEF) and Principal Deputy Director of National Intelligence (PDDNI) to lead and collaborate on space protection vulnerability, susceptibility, and mitigation assessments of NSS services for the purpose of identifying and introducing protection recommendations into existing requirements, budgeting, acquisition, and operational development processes. This unique mission provides an ongoing and crucial core protection competency that advances specific projects/activities (including cyber) to deliver comprehensive, economical and actionable solutions for both programmatic and operational domains.

The SSDP scope spans multiple space missions and stakeholders including the DoD, Intelligence Community (IC), civil, commercial, and international space entities that support NSS missions in both peacetime and throughout all phases of conflict. The program works within existing processes spanning requirements, budgeting, acquisition, and operational development to carry-out its protection mission. It is focused on being responsive to NSS stakeholders in providing technical and operational assessments of emergent threat concepts, and developing near- and far-term plans to address strategies, threats, and vulnerabilities. In the context of its projects and activities, the SSDP employs a cooperative, objective, and enterprise-level approach to implement the capabilities, plans and options to deter, defend against, and if necessary, defeat efforts to interfere with or attack U.S. or allied space systems in an increasingly constrained and hostile environment.

SSDP projects/activities center on identifying solutions to current space protection needs with a common sense approach to balancing near-term results with long-term acquisition, architecture, and strategic objectives. Given the ever-changing elements of the space protection landscape, the SSDP is designed to remain flexible and responsive to fluctuating NSS priorities and objectives. Protection projects/activities in one year are typically dependent upon or advised by the results/findings or progress made on tasks in the preceding FY, and must remain responsive to annual DEPSECDEF and PDDNI - approved SSDP Work Plans that take such variability into consideration. As such, SSDP's FY16 projects/activities will be structured to address the priorities and objectives of the SSDP Work Plan and meet the Nation's space survivability and protection needs as directed by the DEPSECDEF and PDDNI. In order to ensure resiliency in a contested space environment, FY16 efforts will leverage available resources to support NSS survivability requirements and address protection issues, options, and strategies in the priority articulated in the annual SSDP Work Plan; extending beyond space defense strategies, techniques, and solutions to include offensive space control and active defense. SSDP will translate resilience, protection, endurance, and survivability into protection strategy/policy and threat mitigation projects and/or activities in specific mission areas to inform/impact budget and program formulation, influence the development of system or segment requirements, provide technical parameters to systems and capabilities, improve

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| Appropriation/Budget Activity | | R-1 Program Element (Number/Name) | | | | |
| 3600: Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P) | | PE 0603830F I Space Security and Defense Program | | | | |
| CONOPS / TTPs for operational systems, shape and inform protection-related policies, and identify areas for additional collection and/or analysis by the IC to feed threat mitigation efforts. | | | | | | |
| The FY16 President's Budget request represents the resources required to operate and execute a synchronized and effective space protection effort for the Nation; fulfilling a unique, objective and independent role that considers comprehensive, enterprise-level, space and non-space, material and non-material solutions across NSS systems and architectures. The FY16 request preserves the skill-set, knowledge base and multi-organizational construct required to remain ahead of the threat and to evolve programmatic direction and operational CONOPS across multiple orbital regimes in a way that minimizes duplication and inefficiency. This essentially enables the SSDP to deliver the research, analysis, studies, tools and capabilities necessary to identify, prioritize, develop, and implement the most effective and economical solutions to preserve NSS capabilities. | | | | | | |
| This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment. | | | | | | |
| The FY2016 funding request was reduced by \$2.326 million to account for the availability of prior execution balances. | | | | | | |
| B. Program Change Summary (\$ in Millions) | | FY 2014 | FY 2015 | FY 2016 Base | FY 2016 OCO | FY 2016 Total |
| Previous President's Budget | | 24.764 | 32.313 | 33.302 | - | 33.302 |
| Current President's Budget | | 23.986 | 31.613 | 30.771 | - | 30.771 |
| Total Adjustments | | -0.778 | -0.700 | -2.531 | - | -2.531 |
| • Congressional General Reductions | | - | - | | | |
| • Congressional Directed Reductions | | - | -0.700 | | | |
| • Congressional Rescissions | | - | - | | | |
| • Congressional Adds | | - | - | | | |
| • Congressional Directed Transfers | | - | - | | | |
| • Reprogrammings | | - | - | | | |
| • SBIR/STTR Transfer | | - | - | | | |
| • Other Adjustments | | -0.778 | - | -2.531 | - | -2.531 |
| Change Summary Explanation | | | | | | |
| The FY2016 funding request was reduced by \$2.326 million to account for the availability of prior execution balances. | | | | | | |
| C. Accomplishments/Planned Programs (\$ in Millions) | | | | FY 2014 | FY 2015 | FY 2016 |
| Title: Threat Mitigation Project and Activities | | | | 14.436 | 25.904 | 25.957 |
| Description: Entails the prioritized, project-specific technical efforts and activities supporting SSDP mission objectives. Encompasses all SSDP efforts to deliver and implement actionable solutions based on methodical, data-driven systems | | | | | | |

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| Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i> | | R-1 Program Element (Number/Name) PE 0603830F / <i>Space Security and Defense Program</i> | | |
| C. Accomplishments/Planned Programs (\$ in Millions) | | FY 2014 | FY 2015 | FY 2016 |
| engineering and technical analysis to inform/impact both programmatic and operational domains. Includes associated program support/infrastructure and operating costs to sustain a coherent program effort and adhere to the legal demands/requirements of executing a program-specific baseline. | | | | |
| FY 2014 Accomplishments: Engaged in a disciplined methodology to prioritize efforts and execute priority protection projects under a limited budget baseline. Completed efforts resulting in the delivery and implementation of actionable solutions for key mission areas: Operations, Satellite Communication (SATCOM), Position-Navigation and Timing (PNT), Missile Warning, Cyber/Non-Kinetic Operations, Space Situational Awareness (SSA), Indications and Warning (I&W), and Intelligence - Surveillance - Reconnaissance (ISR). Successfully increased the existing program's scope and capability to execute a more comprehensive National protection mission and make further progress on systematically developing, reviewing and integrating protection-specific measures into policy, requirements, acquisitions and operations. Specifically, SSDP delivered analysis and solutions to the Joint Space Operations Center (JSpOC) for a functional Electromagnetic Interference (EMI) architecture, implemented Cyber support to defensive space alternatives, delivered cyber protection threat assessments, provided assessments and solutions for hosted sensors, developed and delivered validated response options to Combatant Commanders (COCOMs) for various threats, provided strategic messages for a variety of key DoD and IC activities, supported key wargames and exercises to refine Tactics, Techniques, and Procedures (TTPs) and Concept of Operations (CONOPS) for space-protection tenets, and developed/integrated rapid prototyping capabilities for key mission areas. | | | | |
| FY 2015 Plans: FY15 projects/activities are structured to address the priorities and objectives of the SSDP work plan and meet the Nation's space survivability and protection needs as directed by the DEPSECDEF and the PDDNI. The targeted objective of FY15 projects/activities is to increase emphasis on addressing a wider domain of capabilities and enhance the focus on offensive and active defense issues; but still retaining the program's vital role in the preservation of space missions through the optimal combination of offensive and defensive techniques. Increased project capacity in FY15 is directed at applying existing processes/methodology to address additional priority space protection issues for Advanced Space Combat Tactics, Counter Network Exploitation Analysis, Wideband Global SATCOM (WGS) Defense Exploration, and Geosynchronous Earth Orbit (GEO) Catalog Expansion. FY15 projects/activities will provide effective and timely deliverables that approach space protection today as if we are in tomorrow's conflict, offer solutions to real problems in a methodical way consistent with National guidance, maintain appropriate balance between mitigating near-term threats and pursuing foundational analytical activities, and operate within DoD and ODNI authorities to provide value added injections into existing and future processes. | | | | |
| FY 2016 Plans: FY16 projects/activities will be prioritized to be consistent with the annual work plan that represents the NSS community's interests, priorities, and equities as well as the priorities articulated by the DEPSECDEF and PDDNI. The program will continue | | | | |

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| C. Accomplishments/Planned Programs (\$ in Millions) | | FY 2014 | FY 2015 | FY 2016 |
| to address high-priority space protection issues and apply existing processes/methodology to address protection priorities within specific mission areas including Operations, Satellite Communication (SATCOM), Position-Navigation and Timing (PNT), Missile Warning, Cyber/Non-Kinetic, Space Situational Awareness (SSA), Indications and Warning (I&W), and Intelligence - Surveillance - Reconnaissance (ISR). The entire compliment of planned FY16 projects will be flexible and responsive to the evolving protection needs and priorities throughout the NSS Enterprise; focused on meeting the demands for operational planning, ongoing coordination of Title 10/50 activities, and the advancement of specific efforts to actionable solutions that have operational and/or programmatic impact. Advanced Space Combat Tactics, Counter Network Exploitation Analysis, WGS Defense Exploration, and GEO Catalog Expansion will continue to be program priorities in FY16. | | | | |
| Title: Strategic Protection Activities and Products Description: Efforts within this category were identified in the SSDP charter as a specific thrust area beginning in FY14. This encompasses the program's strategic efforts to develop and support protection-related policy, influence and advocate for protection requirements, analyze impacts of various policy recommendations on mitigation options, and inform/assist policy-makers on opportunities to leverage policy actions to enhance the space protection posture across the NSS Enterprise. Strategic Protection efforts also provide essential data, support and insight to the program's Threat Mitigation Projects and Activities; enhancing and advancing those efforts for more efficient and effective implementation of those solutions for the Nation. FY 2014 Accomplishments: Engaged in amplified strategic protection efforts for the SSDP with a focus on establishing integrated activities to support space survivability and protection objectives across policy, requirements, threat analysis, and architecture evaluation regimes. Specifically, SSDP provided specialized technical support to assess, propose, inform/influence and develop policies and strategic communication relating to defensive space control and resilience. Additionally, the program formalized its function and process to recommend policy considerations related to space protection and analyze the impacts of such proposals on mitigation development options. Related to this effort, the SSDP also delivered a variety of strategic communication recommendations. FY 2015 Plans: Continue dedicated strategic protection and policy integration efforts across all facets of the NSS Enterprise. Complete the evolution of this function to be fully integrated into the strategic protection aspect of all SSDP stakeholder processes and responsibilities. Focus in FY15 will evolve to provide more comprehensive technical assistance, advice, and strategic solutions in support of policy-related processes across the NSS Enterprise. Moreover, SSDP will inform and assist policy-makers at every level on opportunities to shape policy to enhance space protection posture. Policy-makers will also receive specialized technical assistance, protection-specific data/findings, and validated recommendations regarding the impacts that policy/strategy changes may/can have on our protection of NSS capabilities. FY 2016 Plans: | | 3.550 | 3.909 | 3.939 |

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| C. Accomplishments/Planned Programs (\$ in Millions) | | FY 2014 | FY 2015 | FY 2016 |
| With a fully-functional and integrated Strategic Protection capability by FY16, the SSDP plans to further impact policy across a broader range of DoD, IC and Civil space operations. With continued strategic protection and policy integration efforts across all facets of the NSS Enterprise, SSDP will also seek to provide operational actions/solutions that directly support the implementation of space strategies, policies or strategic communication actions; offering a higher level of in-depth data/findings as well as proven recommendations to enhance the Nation's space protection posture. Technical assistance, advice and strategic solution support in FY16 will also extend to COCOM decision support systems/workgroups and Lead Integrator decision processes. | | | | |
| Title: SATCOM Resiliency Enhancement | | 6.000 | 1.800 | 0.875 |
| Description: This is a protection-related enhancement funded through and advised/informed by the SSDP. It is a four-year incremental effort to enhance the ground-based software and associated operating/processing procedures used to plan WGS operations. It will leverage current system capabilities and planned software updates to improve code that will make a manually-intensive build cycle more automated/responsive. | | | | |
| FY 2014 Accomplishments: Kicked-off an incremental effort to implement a software code improvement to the ground based software used to plan WGS operations. With SSDP direction and oversight, Project Manager Defense Communications and Army Transmission Systems (PM DCATS) initiated development of specific software code improvements (within the framework of the existing system) to process data more efficiently. These improvements (within the scope of the current ground processing contract) enhance existing code to automate aspects of the planning software to make it more tactically responsive. The revised software passed Preliminary Qualification Testing (PQT) and Formal Qualification Testing in late FY14 as well as incorporating warfighter function requests into the design and operation. | | | | |
| FY 2015 Plans: Efforts in FY15 will lead to an initial software code update in Dec 14 and implementation of the enhancement (to include revised operational techniques) by FY17. FY15 activities will encompass post Functional Qualification Test (FQT) testing, initial implementation tasks, amending the proposed code, and ongoing efforts to seamlessly integrate the enhancement into the ground-based WGS planning process. FY15 efforts will also entail technique development and operational integration through the wideband architecture by exploring enabling infrastructure such as spectrum monitoring for electromagnetic interference | | | | |
| FY 2016 Plans: FY16 activities will continue implementation of the enhancement as well as the development and validation of revised techniques to fully operationalize the enhancement by FY17. In order to ensure operational effectiveness, SSDP will test the enhancement and inject it into a variety of relevant exercises. Additionally, the program will work to tie-in the functions of the new software | | | | |

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| C. Accomplishments/Planned Programs (\$ in Millions) | | | | | | | | | | FY 2014 | FY 2015 | FY 2016 |
| more-directly with key decision-makers and consider implementation of added features to further enhance the accuracy and effectiveness of the system; accounting for variables not originally identified/known in the original development efforts | | | | | | | | | | | | |
| Accomplishments/Planned Programs Subtotals | | | | | | | | | | 23.986 | 31.613 | 30.771 |
| D. Other Program Funding Summary (\$ in Millions) | | | | | | | | | | | | |
| <u>Line Item</u> | <u>FY 2014</u> | <u>FY 2015</u> | <u>FY 2016 Base</u> | <u>FY 2016 OCO</u> | <u>FY 2016 Total</u> | <u>FY 2017</u> | <u>FY 2018</u> | <u>FY 2019</u> | <u>FY 2020</u> | <u>Cost To Complete</u> | <u>Total Cost</u> | |
| • NA: NA | - | - | - | - | - | - | - | - | - | - | - | |
| Remarks | | | | | | | | | | | | |
| Note: The AF/DoD portion of the SSDP is funded entirely from this Program Element. Funding to support the complimentary/partnership National Reconnaissance Office (NRO) activities (as part of the joint/integrated program effort between AFSPC and the NRO) are programmed in the NRO classified funding request. | | | | | | | | | | | | |
| E. Acquisition Strategy | | | | | | | | | | | | |
| All contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible. The program consists of numerous small projects. | | | | | | | | | | | | |
| 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-3, RDT&E Project Cost Analysis: PB 2016 Air Force | | | | | | | | | | | | Date: February 2015 | | | |
| Appropriation/Budget Activity 3600 / 4 | | | | | | R-1 Program Element (Number/Name) PE 0603830F / Space Security and Defense Program | | | | Project (Number/Name) 64A025 / Space Protection Program | | | | | |
| Product Development (\$ in Millions) | | | | FY 2014 | | FY 2015 | | FY 2016 Base | | FY 2016 OCO | | FY 2016 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| Threat Mitigation Projects and Activities | Various | Various : Various, | - | 11.556 | Nov 2013 | 23.391 | Nov 2014 | 23.401 | Nov 2015 | - | | 23.401 | Continuing | Continuing | TBD |
| Strategic Protection Activities and Products | Various | Various : Various, | - | 3.450 | Nov 2013 | 3.587 | Nov 2014 | 3.600 | Nov 2015 | - | | 3.600 | Continuing | Continuing | TBD |
| SATCOM Resiliency Enhancement | Various | Various : Various, | - | 6.000 | Nov 2013 | 1.800 | Nov 2015 | 0.875 | Nov 2015 | - | | 0.875 | Continuing | Continuing | TBD |
| Subtotal | | | - | 21.006 | | 28.778 | | 27.876 | | - | | 27.876 | - | - | - |
| Support (\$ in Millions) | | | | FY 2014 | | FY 2015 | | FY 2016 Base | | FY 2016 OCO | | FY 2016 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| Subtotal | | | - | - | | - | | - | | - | | - | - | - | - |
| Test and Evaluation (\$ in Millions) | | | | FY 2014 | | FY 2015 | | FY 2016 Base | | FY 2016 OCO | | FY 2016 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| Subtotal | | | - | - | | - | | - | | - | | - | - | - | - |
| Management Services (\$ in Millions) | | | | FY 2014 | | FY 2015 | | FY 2016 Base | | FY 2016 OCO | | FY 2016 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| Program Support and Infrastructure (Gov't PMA) | Various | Various : Various, | - | 0.955 | Dec 2013 | 0.985 | Nov 2014 | 0.999 | Nov 2015 | - | | 0.999 | Continuing | Continuing | - |
| Oversight, Advisory and other Technical Support (Contractor PMA) | Various | Various : Various, | - | 2.025 | Dec 2013 | 1.850 | Nov 2014 | 1.896 | Nov 2015 | - | | 1.896 | Continuing | Continuing | TBD |
| Subtotal | | | - | 2.980 | | 2.835 | | 2.895 | | - | | 2.895 | - | - | - |

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force | | | | | | | | | | | Date: February 2015 | | | | |
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| | | | Prior Years | FY 2014 | | FY 2015 | | FY 2016 Base | | FY 2016 OCO | | FY 2016 Total | Cost To Complete | Total Cost | Target Value of Contract |
| Project Cost Totals | | | - | 23.986 | | 31.613 | | 30.771 | | - | | 30.771 | - | - | - |

Remarks

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| Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force | | | Date: February 2015 | | |
| Appropriation/Budget Activity 3600 / 4 | | R-1 Program Element (Number/Name) PE 0603830F / <i>Space Security and Defense Program</i> | | Project (Number/Name) 64A025 / <i>Space Protection Program</i> | |

| | FY 2014 | | | | FY 2015 | | | | FY 2016 | | | | FY 2017 | | | | FY 2018 | | | | FY 2019 | | | | FY 2020 | | | |
|--------------------------------------------------------------------------------------------------|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| | 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 |
| Missile Warning Defensive Protection Initiatives (Resiliency Project) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missile Warning Defensive Protection Initiatives (System Investigations) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missile Warning Defensive Protection Initiatives (MW Initiative) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missile Warning Assessments and Solutions (Alt TTPs, Protection Solutions and Implementation) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PNT Assessment and Solutions (GPS Threat Impact Assessment, Characterization and Implementation) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PNT Assessments and Solutions (Future Vulnerability Assessments) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PNT Assessments and Solutions (Survivability Option Refinement and Proof of Concept) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SATCOM Solution Implementation (WGS Enhancement) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SATCOM Solution Implementation (Project Dolly, EMI, Commercial, Wideband, EHF and UHF) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SATCOM Vulnerability Assessments/Mitigation Solutions (Commercial SATCO, EMI and UHF) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SATCOM Assured Communications (Resiliency and Counterspace Techniques) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ops Engagement Wargame and Exercises (up to 5 events per year) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force

Date: February 2015

Appropriation/Budget Activity

3600 / 4

R-1 Program Element (Number/Name)

PE 0603830F / Space Security and Defense Program

Project (Number/Name)

64A025 / Space Protection Program

| | FY 2014 | | | | FY 2015 | | | | FY 2016 | | | | FY 2017 | | | | FY 2018 | | | | FY 2019 | | | | FY 2020 | | | |
|-------------------------------------------------------------------------------------------------|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| | 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 |
| Ops Engagement COCOM Operational Planning (OPPlans, ConPlans and Joint Warfighter Support) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operational Products and Analytical Engagement (Dark Horizons Tactics, COAs and Implementation) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cyber Protection of Blue Space Capabilities (Protection Projects) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cyber Protection of Blue Space Capabilities (Risk Assessments, Testing and Solutions) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cyber Prevention of Adversary Space Threats (Threat and Demo) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cyber Prevention of Adversary Space Threats (Defense Initiatives) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SSA Enterprise Requirements (Low Hanging Fruit) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SSA Enterprise Requirements (Survivability, Protection-Level Rqts and Metrics/Analysis) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SSA Defensive Protection Initiatives (Priority Initiative and Implementation) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SSA Assessments and Solutions (Hosted Sensor, Cross-Cuing, Other Sensors, etc) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SSA Indications and Warning (GEO Catalog Expansion) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SSA Indications and Warning (Data Fusion, Sensor Employment, Joint Integration) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Strategic Protection Policy and Strategy | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Strategic Protection Defensive Space Control Material Options | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|---------------------------------------------------------------|--|--|--|--|--|--|--|--|--|---------------------------------------------------------------------------------------|---|---|---|---------|---|---|---|------------------------------------------------------------|---|---------------------|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force | | | | | | | | | | | | | | | | | | | | Date: February 2015 | | | | | | | | | | | | | | | | | |
| Appropriation/Budget Activity 3600 / 4 | | | | | | | | | | R-1 Program Element (Number/Name) PE 0603830F / Space Security and Defense Program | | | | | | | | Project (Number/Name) 64A025 / Space Protection Program | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | FY 2014 | | | | FY 2015 | | | | FY 2016 | | | | FY 2017 | | | | FY 2018 | | | | FY 2019 | | | | FY 2020 | | | |
| | | | | | | | | | | 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 |
| Strategic Protection Requirements and Acquisition Integration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Strategic Protection Resiliency Options and Solutions | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Exhibit R-4A, RDT&E Schedule Details: PB 2016 Air Force | | | Date: February 2015 |
| Appropriation/Budget Activity 3600 / 4 | R-1 Program Element (Number/Name) PE 0603830F / <i>Space Security and Defense Program</i> | Project (Number/Name) 64A025 / <i>Space Protection Program</i> | |

Schedule Details

| Events | Start | | End | |
|--------------------------------------------------------------------------------------------------|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| Missile Warning Defensive Protection Initiatives (Resiliency Project) | 1 | 2014 | 2 | 2016 |
| Missile Warning Defensive Protection Initiatives (System Investigations) | 3 | 2016 | 1 | 2019 |
| Missile Warning Defensive Protection Initiatives (MW Initiative) | 2 | 2019 | 4 | 2020 |
| Missile Warning Assessments and Solutions (Alt TTPs, Protection Solutions and Implementation) | 2 | 2014 | 4 | 2020 |
| PNT Assessment and Solutions (GPS Threat Impact Assessment, Characterization and Implementation) | 1 | 2014 | 2 | 2019 |
| PNT Assessments and Solutions (Future Vulnerability Assessments) | 2 | 2019 | 4 | 2020 |
| PNT Assessments and Solutions (Survivability Option Refinement and Proof of Concept) | 3 | 2014 | 4 | 2020 |
| SATCOM Solution Implementation (WGS Enhancement) | 1 | 2014 | 4 | 2017 |
| SATCOM Solution Implementation (Project Dolly, EMI, Commercial, Wideband, EHF and UHF) | 1 | 2015 | 3 | 2020 |
| SATCOM Vulnerability Assessments/Mitigation Solutions (Commercial SATCO, EMI and UHF) | 1 | 2014 | 1 | 2020 |
| SATCOM Assured Communications (Resiliency and Counterspace Techniques) | 1 | 2014 | 3 | 2020 |
| Ops Engagement Wargame and Exercises (up to 5 events per year) | 1 | 2014 | 4 | 2020 |
| Ops Engagement COCOM Operational Planning (OPlans, ConPlans and Joint Warfighter Support) | 1 | 2014 | 4 | 2020 |
| Operational Products and Analytical Engagement (Dark Horizons Tactics, COAs and Implementation) | 1 | 2014 | 4 | 2020 |
| Cyber Protection of Blue Space Capabilities (Protection Projects) | 1 | 2014 | 4 | 2020 |
| Cyber Protection of Blue Space Capabilities (Risk Assessments, Testing and Solutions) | 2 | 2014 | 4 | 2020 |
| Cyber Prevention of Adversary Space Threats (Threat and Demo) | 1 | 2014 | 3 | 2020 |
| Cyber Prevention of Adversary Space Threats (Defense Initiatives) | 1 | 2014 | 4 | 2020 |

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Air Force **Date:** February 2015

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|--------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Appropriation/Budget Activity 3600 / 4 | R-1 Program Element (Number/Name) PE 0603830F / <i>Space Security and Defense Program</i> | Project (Number/Name) 64A025 / <i>Space Protection Program</i> |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|

| Events | Start | | End | |
|----------------------------------------------------------------------------------------|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| SSA Enterprise Requirements (Low Hanging Fruit) | 1 | 2014 | 3 | 2020 |
| SSA Enterprise Requirements (Survivability, Protection-Level Rqts and Metrics/Analysis | 2 | 2014 | 4 | 2020 |
| SSA Defensive Protection Initiatives (Priority Initiative and Implementation) | 1 | 2014 | 3 | 2020 |
| SSA Assessments and Solutions (Hosted Sensor, Cross-Cuing, Other Sensors, etc) | 1 | 2014 | 3 | 2020 |
| SSA Indications and Warning (GEO Catalog Expansion) | 2 | 2015 | 1 | 2020 |
| SSA Indications and Warning (Data Fusion, Sensor Employment, Joint Integration) | 2 | 2014 | 4 | 2020 |
| Strategic Protection Policy and Strategy | 2 | 2014 | 4 | 2020 |
| Strategic Protection Defensive Space Control Material Options | 2 | 2014 | 4 | 2020 |
| Strategic Protection Requirements and Acquisition Integration | 1 | 2014 | 4 | 2020 |
| Strategic Protection Resiliency Options and Solutions | 2 | 2014 | 4 | 2020 |