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| Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force                                                                                         |                 |         |                      |              |                                                                      |               |         |         |         | DATE: April 2013 |                  |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|----------------------|--------------|----------------------------------------------------------------------|---------------|---------|---------|---------|------------------|------------------|------------|
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 4: Advanced Component Development & Prototypes (ACD&P) |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0603830F: Space Protection Program (SPP) |               |         |         |         |                  |                  |            |
| COST (\$ in Millions)                                                                                                                                   | All Prior Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014 Base | FY 2014 OCO <sup>##</sup>                                            | FY 2014 Total | FY 2015 | FY 2016 | FY 2017 | FY 2018          | Cost To Complete | Total Cost |
| Total Program Element                                                                                                                                   | -               | 7.074   | 10.429               | 28.764       | -                                                                    | 28.764        | 21.717  | 22.687  | 20.902  | 20.383           | Continuing       | Continuing |
| 64A025: Space Protection Program                                                                                                                        | -               | 7.074   | 10.429               | 28.764       | -                                                                    | 28.764        | 21.717  | 22.687  | 20.902  | 20.383           | Continuing       | Continuing |
| Quantity of RDT&E Articles                                                                                                                              |                 | 0       | 0                    | 0            |                                                                      | 0             | 0       | 0       | 0       | 0                |                  |            |

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

## **A. Mission Description and Budget Item Justification**

This Program Element funds the DoD/Air Force component of the Space Protection Program (SPP) which provides alternatives, establishes focus and energizes programs across the DoD and National Security Space (NSS) to implement mission resilience strategies that ensure the Nation has a comprehensive space protection approach in our intelligence, acquisition, and operational communities. As designed, the SPP 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. While the AF and National Reconnaissance Organization (NRO) each contribute to their portion of the SPP mission from separate funding sources, the SPP continues to focus both partners on a common objective and remains the critical element that leverages the best efforts of the DoD and Intelligence Community (IC) to proactively plan for and respond to threats against a majority of the National Space Enterprise.

Within this Program Element, the SPP is focused on targeted objectives to support Air Force Space Command (AFSPC), AF and DoD mission priorities and, in tandem, carry out the broader joint SPP mission. This unique mission provides an ongoing and necessary core protection competency that advances specific projects/activities (including cyber) to deliver comprehensive, economical and actionable solutions for both programmatic and operational domains. SPP alternatives and solutions are leveraged to inform/impact budget and program formulation; develop system or segment requirements; provide technical performance parameters to programs; improve Concepts of Operations (CONOPS) and Tactics, Techniques, and Procedures (TTPs) for operational systems; and identify areas that need additional collection and/or analysis by the IC.

Based on recommendations from the Assessment of National Space Control Capabilities study and the effectiveness of the SPP to date, the DoD is further expanding the current posture in FY14 to better meet the evolving threat and provide enduring support to the entire NSS Enterprise. The FY14 request increases the resources required to operate and execute an enhanced, 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 (cross-cutting, cross-domain and integrated measures/recommendations). The FY14 request accelerates the timeline to accomplish threat mitigation projects in key mission areas and expands program responsibilities to represent the whole of government in developing, reviewing and integrating protection-specific measures into policy, requirements, acquisitions and operations. Through this enhancement, the DoD and IC are able to fully address offensive and defensive space control capabilities on an enduring basis; looking to the SPP as the center of excellence and analytical focal point for options and strategies (materiel, non-materiel, cross-Title, cross-domain) leading to a more resilient and effective NSS Enterprise. The FY14 request also preserves the skill-set, knowledge base and multi-organizational construct required to remain

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| Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |                                                                      | DATE: April 2013 |              |             |               |         |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 4: Advanced Component Development & Prototypes (ACD&P)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  | R-1 ITEM NOMENCLATURE<br>PE 0603830F: Space Protection Program (SPP) |                  |              |             |               |         |
| ahead of the threat and to evolve programmatic direction and operational CONOPS across multiple orbital regimes in a way that minimizes duplication and inefficiency. To that end, the SPP will provide a central focus for unifying and integrating Title 10/50 roles and responsibilities (AF and NRO efforts) to deliver research, analysis, studies, tools and capabilities necessary to identify, prioritize, develop, and implement the most effective and economical solutions to preserve NSS capabilities.                                                                                                                                                                                                                                                      |  |  |                                                                      |                  |              |             |               |         |
| As part of the ongoing role of the program to develop and implement (when appropriate) protection solutions for the Nation, the FY14 request also includes \$10M in support of an incremental project to upgrade the ground-based software used to plan Satellite Communications (SATCOM) operations. The SPP will manage this project and deliver on a tactically-responsive upgrade that is operationally integrated through the wideband architecture by FY17. The majority of the remaining increase in FY14 request will be used to initiate strategic protection efforts focusing on establishing integrated activities supporting space survivability and protection objectives across policy, requirements, threat analysis and architecture evaluation regimes. |  |  |                                                                      |                  |              |             |               |         |
| 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  |                                                                      |                  |              |             |               |         |
| B. Program Change Summary (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  | FY 2012                                                              | FY 2013          | FY 2014 Base | FY 2014 OCO | FY 2014 Total |         |
| Previous President's Budget                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  | 7.299                                                                | 10.429           | 11.464       | -           | 11.464        |         |
| Current President's Budget                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  | 7.074                                                                | 10.429           | 28.764       | -           | 28.764        |         |
| Total Adjustments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  | -0.225                                                               | 0.000            | 17.300       | -           | 17.300        |         |
| • Congressional General Reductions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  | -                                                                    | 0.000            |              |             |               |         |
| • Congressional Directed Reductions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  | -                                                                    | 0.000            |              |             |               |         |
| • Congressional Rescissions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  | 0.000                                                                | 0.000            |              |             |               |         |
| • Congressional Adds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  | -                                                                    | 0.000            |              |             |               |         |
| • Congressional Directed Transfers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  | -                                                                    | 0.000            |              |             |               |         |
| • Reprogrammings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  | 0.000                                                                | 0.000            |              |             |               |         |
| • SBIR/STTR Transfer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  | -0.225                                                               | 0.000            |              |             |               |         |
| • Other Adjustments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  | 0.000                                                                | 0.000            | 17.300       | -           | 17.300        |         |
| Change Summary Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |                                                                      |                  |              |             |               |         |
| FY12: -\$0.225M for SBIR Reduction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  |                                                                      |                  |              |             |               |         |
| FY14: +\$17.300M for core program changes to enhance the current SPP effort to represent the whole of the US government in protecting US Space enterprise.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |                                                                      |                  |              |             |               |         |
| C. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                                                      |                  |              | FY 2012     | FY 2013       | FY 2014 |
| Title: Threat Mitigation Project and Activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |                                                                      |                  |              | 5.320       | 8.214         | 12.124  |

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| <b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2014 Air Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | <b>DATE:</b> April 2013                                                            |                |                |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603830F: <i>Space Protection Program (SPP)</i> |                |                |
| <b>C. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | <b>FY 2012</b>                                                                     | <b>FY 2013</b> | <b>FY 2014</b> |
| <p><b>Description:</b> Entails the prioritized, project-specific technical efforts and activities supporting SPP mission objectives. Encompasses all SPP efforts to deliver and implement actionable solutions based on methodical, data-driven systems engineering and technical analysis to inform/impact both programmatic and operational domains.</p> <p><b>FY 2012 Accomplishments:</b><br/>Engaged in a disciplined methodology to prioritize efforts and execute priority protection projects; completed efforts resulting in the delivery and implementation of actionable solutions for key mission areas. Identified materiel and TTP changes that will enable two major DoD and IC systems to buy back significant mission in a threat environment. Concluded the first community-wide Space Situational Awareness (SSA) study to determine specific requirements and gaps; critical for supporting U.S. responses to threats. Delivered the Capabilities and Dependencies Database (C&amp;DD) to Joint Forces Component Commander (JFCC)-Space, enabling the operational community to determine consequence of loss across the spectrum of space effects. Supported several wargames and exercises to help refine TTPs and CONOPS; including those developed by SPP to give AFSPC, JFCC-Space and USSTRATCOM a more robust set of response options to specific threats.</p> <p><b>FY 2013 Plans:</b><br/>SPP is pursuing the critical projects/efforts identified through the prioritization process with increased emphasis on addressing a wider domain of capabilities and determining the broader role cyber can play in space protection. The program is increasing efforts to address specific mission areas (Operations, Satellite Communication (SATCOM), Position, Navigation and Timing (PNT), Missile Warning, Cyber, SSA, and Indications and Warning (I&amp;W)) with targeted objectives to better understand and deliver what is expected from the national security space community with regard to the protection of space-enabled capabilities. Projects continue to be 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.</p> <p><b>FY 2014 Plans:</b><br/>Based on the detailed methodology to identify and prioritize the most critical protection needs, specific projects will continue to increase the scope and capability of the program 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. The program will continue its focus on addressing protection within key mission areas and plans to increase its focus on enterprise-level assessments and on influencing national space capability providers to make protection a strategic, operational and resource priority. The program will also continue its operational intelligence efforts and responsibilities to represent the whole of government in developing, reviewing and integrating protection-specific measures into policy, requirements, acquisitions and operations.</p> |  |                                                                                    |                |                |
| <b>Title:</b> Strategic Protection Activities and Products                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | 0.000                                                                              | 0.000          | 3.550          |

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| <b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2014 Air Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | <b>DATE:</b> April 2013                                                            |                |                |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603830F: <i>Space Protection Program (SPP)</i> |                |                |
| <b>C. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | <b>FY 2012</b>                                                                     | <b>FY 2013</b> | <b>FY 2014</b> |
| <p><b>Description:</b> Encompasses the strategic efforts to evaluate architectures, develop and support protection-related policy, influence and integrate protection requirements, and conduct long term threat assessments and evaluations. These efforts provide critical data and support to the Threat Mitigation Projects and Activities efforts.</p> <p><b>FY 2012 Accomplishments:</b><br/>N/A</p> <p><b>FY 2013 Plans:</b><br/>N/A</p> <p><b>FY 2014 Plans:</b><br/>Initiate strategic protection efforts for the SPP with a first year focus on establishing integrated activities to support space survivability and protection objectives across policy, requirements, threat analysis and architecture evaluation regimes. Specifically, the SPP will provide specialized technical support to assess, propose, inform/influence and/or develop (if necessary) policies relating to defensive space control and resilience. Additionally, the program will formalize a specific activity to work with architecture, analysis, modeling and requirements personnel in Services, agencies and organizations related to NSS services; supporting the direct development of enterprise and system-level requirements to address prioritized vulnerabilities. The SPP will also establish a space vulnerability assessment activity to conduct targeted assessments and evaluations that integrate finished intelligence with engineering assessments to project the possible attributes (technical and operational) of evolving threats. Strategic Protection activities in FY14 will also include a dedicated program component to provide threat resiliency evaluation capability for architectures; assessing, analyzing and evaluating NSS architectures as they relate to the threat and the integration of capabilities into a survivability architecture picture.</p> |  |                                                                                    |                |                |
| <p><b>Title:</b> SATCOM Resiliency Enhancement</p> <p><b>Description:</b> A four-year incremental effort, managed by the SPP, to upgrade the ground-based software used to plan SATCOM operations</p> <p><b>FY 2012 Accomplishments:</b><br/>N/A</p> <p><b>FY 2013 Plans:</b><br/>N/A</p> <p><b>FY 2014 Plans:</b><br/>Starts a four-year incremental effort (managed by the SPP) to upgrade the ground based software used to plan SATCOM operations. The effort encompasses development, integration and fielding of this incremental upgrade and the implementation</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | 0.000                                                                              | 0.000          | 10.000         |

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| <b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2014 Air Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | <b>DATE:</b> April 2013                                                            |                |                |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603830F: <i>Space Protection Program (SPP)</i> |                |                |
| <b>C. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | <b>FY 2012</b>                                                                     | <b>FY 2013</b> | <b>FY 2014</b> |
| will include automating aspects of the planning software and associated wideband hardware to make it more tactically responsive. The effort will also entail technique development and operational integration through the wideband architecture by exploring enabling infrastructure such as spectrum monitoring for electromagnetic interference. FY14 efforts will lead to a planned initial software capability in early FY15 and planned full implementation of the enhancement (to include revised techniques) by FY17.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                    |                |                |
| <b>Title:</b> Program Support & Infrastructure/Government PMA<br><b>Description:</b> Government Program Support and Infrastructure Operating Costs<br><br><b>FY 2012 Accomplishments:</b><br>Provided program support and infrastructure operations to include facilities, government travel, computer systems and equipment (including specialized classified systems and program-specific internal/closed systems), equipment maintenance, communications, and general office supplies & equipment.<br><br><b>FY 2013 Plans:</b><br>Provides for program support and infrastructure operating costs to include facilities, government travel, computer systems and equipment (including specialized classified systems and program-specific internal/closed systems), equipment maintenance, communications, and general office supplies & equipment.<br><br><b>FY 2014 Plans:</b><br>Provides projected program support and infrastructure operations to include facilities, government travel, computer systems and equipment (including specialized classified systems and program-specific internal/closed systems), equipment maintenance, communications, and general office supplies & equipment. |  | 0.472                                                                              | 0.610          | 0.995          |
| <b>Title:</b> Program Oversight and Advisory Support / Contractor PMA<br><b>Description:</b> Contractor management, oversight and senior technical advisory support.<br><br><b>FY 2012 Accomplishments:</b><br>Provided the key management/oversight and advisory support as well as technical support in day-to-day and strategic programming/planning activities including security, PPBE, program control, personnel management, administrative, policy, and senior technical advisor support.<br><br><b>FY 2013 Plans:</b><br>Provides for key management/oversight and advisory support as well as technical support in day-to-day and strategic programming/planning activities including security, PPBE, program control, personnel management, administrative, policy, and senior technical advisor support.<br><br><b>FY 2014 Plans:</b>                                                                                                                                                                                                                                                                                                                                                          |  | 1.282                                                                              | 1.605          | 2.095          |

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| <b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2014 Air Force                                                                                                                                                                                                                                                                                        |                |                |                         |                        |                                                                                    |                |                |                |                | <b>DATE:</b> April 2013     |                   |                |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>                                                                                                                                                                          |                |                |                         |                        | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603830F: <i>Space Protection Program (SPP)</i> |                |                |                |                |                             |                   |                |
| <b>C. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                       |                |                |                         |                        |                                                                                    |                |                |                |                | <b>FY 2012</b>              | <b>FY 2013</b>    | <b>FY 2014</b> |
| Provides for key management/oversight and advisory support as well as technical support in day-to-day and strategic programming/planning activities including security, PPBE, program control, personnel management, administrative, policy, and senior technical advisor support.                                                                                |                |                |                         |                        |                                                                                    |                |                |                |                |                             |                   |                |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                                                                                 |                |                |                         |                        |                                                                                    |                |                |                |                | 7.074                       | 10.429            | 28.764         |
| <b>D. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                          |                |                |                         |                        |                                                                                    |                |                |                |                |                             |                   |                |
| <b>Line Item</b>                                                                                                                                                                                                                                                                                                                                                  | <b>FY 2012</b> | <b>FY 2013</b> | <b>FY 2014<br/>Base</b> | <b>FY 2014<br/>OCO</b> | <b>FY 2014<br/>Total</b>                                                           | <b>FY 2015</b> | <b>FY 2016</b> | <b>FY 2017</b> | <b>FY 2018</b> | <b>Cost To<br/>Complete</b> | <b>Total Cost</b> |                |
| • none: N/A                                                                                                                                                                                                                                                                                                                                                       | 0.000          | 0.000          | 0.000                   |                        | 0.000                                                                              | 0.000          | 0.000          | 0.000          | 0.000          | Continuing                  | Continuing        |                |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                    |                |                |                         |                        |                                                                                    |                |                |                |                |                             |                   |                |
| Note: The AF/DoD portion of the Space Protection Program is funded entirely from this Program Element. Funding to support the complimentary/partnership National Reconnaissance Office (NRO) Space Protection Program activities (as part of the joint/integrated program effort between AFSPC and the NRO) are programmed in the NRO classified funding request. |                |                |                         |                        |                                                                                    |                |                |                |                |                             |                   |                |
| <b>E. Acquisition Strategy</b>                                                                                                                                                                                                                                                                                                                                    |                |                |                         |                        |                                                                                    |                |                |                |                |                             |                   |                |
| 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.                                                                                                                                                                                        |                |                |                         |                        |                                                                                    |                |                |                |                |                             |                   |                |
| <b>F. Performance Metrics</b>                                                                                                                                                                                                                                                                                                                                     |                |                |                         |                        |                                                                                    |                |                |                |                |                             |                   |                |
| 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 2014 Air Force                                                                                             |                        |                                |                 |         |            |                                                                      |            |              |            |                                             |            | DATE: April 2013 |                  |            |                          |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 4: Advanced Component Development & Prototypes (ACD&P) |                        |                                |                 |         |            | R-1 ITEM NOMENCLATURE<br>PE 0603830F: Space Protection Program (SPP) |            |              |            | PROJECT<br>64A025: Space Protection Program |            |                  |                  |            |                          |
| Product Development (\$ in Millions)                                                                                                                    |                        |                                |                 | FY 2012 |            | FY 2013                                                              |            | FY 2014 Base |            | FY 2014 OCO                                 |            | FY 2014 Total    |                  |            |                          |
| Cost Category Item                                                                                                                                      | Contract Method & Type | Performing Activity & Location | All 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,               | -               | 5.320   | Nov 2011   | 8.214                                                                | Nov 2012   | 12.124       | Nov 2013   | -                                           |            | 12.124           | Continuing       | Continuing | TBD                      |
| Strategic Protection Activities and Products                                                                                                            | Various                | Various:Various,               | -               | 0.000   |            | 0.000                                                                |            | 3.550        | Nov 2013   | -                                           |            | 3.550            | Continuing       | Continuing | TBD                      |
| SATCOM Resiliency Enhancement                                                                                                                           | Various                | Various:Various,               | -               | 0.000   |            | 0.000                                                                |            | 10.000       | Nov 2013   | -                                           |            | 10.000           | Continuing       | Continuing | TBD                      |
| Subtotal                                                                                                                                                |                        |                                | 0.000           | 5.320   |            | 8.214                                                                |            | 25.674       |            | 0.000                                       |            | 25.674           |                  |            |                          |
| Support (\$ in Millions)                                                                                                                                |                        |                                |                 | FY 2012 |            | FY 2013                                                              |            | FY 2014 Base |            | FY 2014 OCO                                 |            | FY 2014 Total    |                  |            |                          |
| Cost Category Item                                                                                                                                      | Contract Method & Type | Performing Activity & Location | All 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                                                                                                                                                |                        |                                | 0.000           | 0.000   |            | 0.000                                                                |            | 0.000        |            | 0.000                                       |            | 0.000            | 0.000            | 0.000      | 0.000                    |
| Test and Evaluation (\$ in Millions)                                                                                                                    |                        |                                |                 | FY 2012 |            | FY 2013                                                              |            | FY 2014 Base |            | FY 2014 OCO                                 |            | FY 2014 Total    |                  |            |                          |
| Cost Category Item                                                                                                                                      | Contract Method & Type | Performing Activity & Location | All 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                                                                                                                                                |                        |                                | 0.000           | 0.000   |            | 0.000                                                                |            | 0.000        |            | 0.000                                       |            | 0.000            | 0.000            | 0.000      | 0.000                    |
| Management Services (\$ in Millions)                                                                                                                    |                        |                                |                 | FY 2012 |            | FY 2013                                                              |            | FY 2014 Base |            | FY 2014 OCO                                 |            | FY 2014 Total    |                  |            |                          |
| Cost Category Item                                                                                                                                      | Contract Method & Type | Performing Activity & Location | All 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,               | -               | 0.472   | Nov 2011   | 0.610                                                                | Nov 2012   | 0.995        | Dec 2013   | -                                           |            | 0.995            | Continuing       | Continuing |                          |
| Oversight, Advisory and other Technical Support (Contractor PMA)                                                                                        | Various                | Various:Various,               | -               | 1.282   | Nov 2011   | 1.605                                                                | Nov 2012   | 2.095        | Dec 2013   | -                                           |            | 2.095            | Continuing       | Continuing | TBD                      |
| Subtotal                                                                                                                                                |                        |                                | 0.000           | 1.754   |            | 2.215                                                                |            | 3.090        |            | 0.000                                       |            | 3.090            |                  |            |                          |

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|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|--|---------|----------------------------------------------------------------------|--------------|--|-------------|--|---------------------------------------------|------------------|------------|--------------------------|--|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force                                                                                             |                 |         |  |         |                                                                      |              |  |             |  | DATE: April 2013                            |                  |            |                          |  |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 4: Advanced Component Development & Prototypes (ACD&P) |                 |         |  |         | R-1 ITEM NOMENCLATURE<br>PE 0603830F: Space Protection Program (SPP) |              |  |             |  | PROJECT<br>64A025: Space Protection Program |                  |            |                          |  |
|                                                                                                                                                         | All Prior Years | FY 2012 |  | FY 2013 |                                                                      | FY 2014 Base |  | FY 2014 OCO |  | FY 2014 Total                               | Cost To Complete | Total Cost | Target Value of Contract |  |
| Project Cost Totals                                                                                                                                     | 0.000           | 7.074   |  | 10.429  |                                                                      | 28.764       |  | 0.000       |  | 28.764                                      |                  |            |                          |  |

Remarks



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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

## APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force  
BA 4: Advanced Component Development & Prototypes (ACD&P)

## R-1 ITEM NOMENCLATURE

PE 0603830F: Space Protection Program (SPP)

## PROJECT

64A025: Space Protection Program

### SPACE PROTECTION PROGRAM (SPP) SCHEDULE (Part I)

| Mission Area    | ACTIVITY/EVENT                                 | FY12                                                                                   | FY13                                                 | FY14                                                          | FY15                                                              | FY16                | FY17 | FY18 |
|-----------------|------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------|---------------------|------|------|
| Ops Engagement  | Wargames & Exercises                           | Planning, Participation & COA Implementation for Two Events per FY                     |                                                      |                                                               |                                                                   |                     |      |      |
|                 | COCOM Operational Planning                     | COCOM OPlans/ConPlans                                                                  |                                                      |                                                               |                                                                   |                     |      |      |
|                 | Operational Products and Analytical Engagement | Analytical COA Development / Delivery of Tailored COCOM Products                       |                                                      |                                                               |                                                                   |                     |      |      |
|                 |                                                | Ongoing MSM Dev   COA Analysis/Dev   Consequence of Loss Analysis   Mitigation Options |                                                      |                                                               |                                                                   |                     |      |      |
| Satellite Comm  | WGS Protection Ops/Implementation              | DEMO                                                                                   | Ops & TTPs                                           | Testing & Validation                                          |                                                                   |                     |      |      |
|                 | Threat Geo Location & Requirements             |                                                                                        | Geo Loc't'n → Rqt's Dev.                             | Follow-on Threat/Vulnerability Assessments & Rqt's Dev.       |                                                                   |                     |      |      |
|                 | EHF/UHF Vulnerability Assessments & Solutions  |                                                                                        | MUOS Study<br>EHF Eval                               | DEMO<br>Mitigation                                            |                                                                   |                     |      |      |
|                 | SATCOM Resiliency Upgrade to Ground-Based S/W  |                                                                                        |                                                      | SW Dev<br>Initial Capability                                  | Test, Integration, Automation<br>Technique Dev & Implementation   | Full Implementation |      |      |
|                 | Future SatComm Projects                        |                                                                                        |                                                      | Future Projects TBD Based on Emerging Threat & Msn Priorities |                                                                   |                     |      |      |
| PNT             | In-Depth PNT Analysis/Solutions                |                                                                                        | Vulnerability → Mitigation → Imp.                    |                                                               |                                                                   |                     |      |      |
|                 | Future PNT Projects                            |                                                                                        |                                                      |                                                               | Future Projects TBD Based on Emerging Threat & Mission Priorities |                     |      |      |
| Missile Warning | MW Assessments and Alternatives                | Mitigation Options                                                                     | Vulnerability Study<br>Study/Analysis & Options Dev. | DEMO                                                          |                                                                   |                     |      |      |
|                 | Future Missile Warning Projects                |                                                                                        |                                                      |                                                               | Future Projects TBD Based on Emerging Threat & Mission Priorities |                     |      |      |

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|------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------|------------------|----------------------------------|--|
| Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force                                                                 |  |                                             | DATE: April 2013 |                                  |  |
| <b>APPROPRIATION/BUDGET ACTIVITY</b>                                                                                   |  | <b>R-1 ITEM NOMENCLATURE</b>                |                  | <b>PROJECT</b>                   |  |
| 3600: Research, Development, Test & Evaluation, Air Force<br>BA 4: Advanced Component Development & Prototypes (ACD&P) |  | PE 0603830F: Space Protection Program (SPP) |                  | 64A025: Space Protection Program |  |

**SPACE PROTECTION PROGRAM (SPP) SCHEDULE (Part II)**

| Mission Area         | ACTIVITY/EVENT                                                    | FY12      | FY13                       | FY14                                                                      | FY15                                                  | FY16                                                             | FY17            | FY18 |
|----------------------|-------------------------------------------------------------------|-----------|----------------------------|---------------------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------------|-----------------|------|
| Cyber                | Cyber Operations (Studies/Alternatives)                           |           | Cyber Project #1           |                                                                           |                                                       | Implementation                                                   | Cyber Project#3 |      |
|                      |                                                                   |           | Cyber Project #2           |                                                                           |                                                       | Implementation                                                   | Cyber Project#4 |      |
|                      | Defense Protection Initiatives                                    | Study     | Demo & Ops                 | Tool R&D / Updates                                                        | Next Initiative ID, Study, Analysis                   |                                                                  | Demo & Ops      |      |
| SSA and I&W          | SSA Enterprise Requirements and Acquisition                       | GEO Study | GEO KPPs                   | SSA Enterprise Rpt's                                                      |                                                       | Ongoing SSA Evaluations and Mission-Specific Project Efforts TBD |                 |      |
|                      |                                                                   |           | Joint SSA Payload Strategy |                                                                           |                                                       |                                                                  |                 |      |
|                      | SSA/I&W Optimization Projects                                     |           | SSA Cross-Cuing & CONOPS   |                                                                           | Next Project TBD                                      |                                                                  |                 |      |
|                      |                                                                   |           | SSA Data Integration       |                                                                           | Based on SSA/I&W Evolution and Mission Prioritization |                                                                  |                 |      |
|                      | OPINTEL Effort                                                    |           | Phase I                    | Phase II                                                                  | Phase III                                             | COA-Related Spt                                                  |                 |      |
| Strategic Protection | Space Protection Policy & Strategy                                |           |                            | Technical Spt for Policies/Strategies Relating to Nat'l Space Protection  |                                                       |                                                                  |                 |      |
|                      |                                                                   |           |                            | Bi-Annual Updates to Space Protection Strategy                            |                                                       |                                                                  |                 |      |
|                      | Protection Requirements                                           |           |                            | DSC ICD                                                                   |                                                       |                                                                  |                 |      |
|                      |                                                                   |           |                            | Spt for Enterprise & System Level Requirements to Address Vulnerabilities |                                                       |                                                                  |                 |      |
|                      | Space Vulnerability Assessments                                   |           |                            | Establish activity → Conduct Vulnerability Assessments & Evals            |                                                       |                                                                  |                 |      |
|                      |                                                                   |           |                            | Integrate finished intel w/engineering assessments                        |                                                       |                                                                  |                 |      |
|                      | Architecture Evaluation & Threat Resiliency Evaluation Capability |           |                            | TREC: Develop Library → Validate Architectures → Maintain → Apply         |                                                       |                                                                  |                 |      |
|                      |                                                                   |           |                            | Architecture Analyses and Assessments                                     |                                                       |                                                                  |                 |      |
|                      |                                                                   |           |                            | Build/Maintain NSS Survivability Architectures                            |                                                       |                                                                  |                 |      |

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------|
| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Air Force                                                                                                                       |                                                                                    |                                                           | <b>DATE:</b> April 2013 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603830F: <i>Space Protection Program (SPP)</i> | <b>PROJECT</b><br>64A025: <i>Space Protection Program</i> |                         |

## Schedule Details

| Events                                                                                                             | Start   |      | End     |      |
|--------------------------------------------------------------------------------------------------------------------|---------|------|---------|------|
|                                                                                                                    | Quarter | Year | Quarter | Year |
| Wargame & Exercises                                                                                                | 1       | 2012 | 4       | 2018 |
| Combatant Commander (COCOM) Operational Planning                                                                   | 4       | 2012 | 4       | 2018 |
| Operational Products & Analytical Engagement                                                                       | 1       | 2012 | 4       | 2018 |
| Wideband Global SATCOM (WGS) Protection Ops and Implementation                                                     | 1       | 2012 | 1       | 2016 |
| Geo Location of Threat and Corresponding Mitigation Requirements Development                                       | 1       | 2013 | 4       | 2018 |
| Extremely High Frequency (EHF) & Ultra High Frequency (UHF) Vulnerability Assessments and Development of Solutions | 1       | 2013 | 2       | 2015 |
| Future SatComm Projects                                                                                            | 4       | 2014 | 4       | 2018 |
| PNT Analysis & Solutions                                                                                           | 3       | 2013 | 3       | 2015 |
| Missile Warning (MW) Assessments & Alternatives                                                                    | 1       | 2012 | 2       | 2015 |
| Cyber Operations                                                                                                   | 4       | 2012 | 4       | 2018 |
| Defense Protection Initiatives                                                                                     | 1       | 2012 | 4       | 2018 |
| SSA Enterprise Requirements & Acquisition                                                                          | 1       | 2012 | 4       | 2018 |
| SSA/I&W Optimization                                                                                               | 1       | 2013 | 4       | 2018 |
| Operations Intelligence (OPINTEL) Support to Operations                                                            | 4       | 2012 | 4       | 2017 |
| Space Protection Policy & Strategy                                                                                 | 1       | 2014 | 4       | 2018 |
| Protection Requirements                                                                                            | 1       | 2014 | 4       | 2018 |
| Space Vulnerability Assessment Activity                                                                            | 1       | 2014 | 4       | 2018 |
| Architecture Evaluation (Threat Resiliency Evaluation Capability)                                                  | 1       | 2014 | 4       | 2018 |
| SATCOM Resiliency Enhancement                                                                                      | 1       | 2014 | 4       | 2017 |