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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2014 Air Force **DATE:** April 2013

|                                                                                                                                                                           |                                                                                       |
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| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: <i>Space Situation Awareness Systems</i> |
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| 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                               | 1,336.090       | 216.212 | 267.252              | 400.258      | -                         | 400.258       | 385.881 | 218.900 | 108.600 | 0.000   | Continuing       | Continuing |
| 65A006: <i>Space Based Space Surveillance</i>       | 968.453         | 0.000   | 2.071                | 2.000        | -                         | 2.000         | 0.000   | 0.000   | 0.000   | 0.000   | Continuing       | Continuing |
| 65A009: <i>Space Fence</i>                          | 252.280         | 178.174 | 252.578              | 377.700      | -                         | 377.700       | 378.700 | 218.900 | 108.600 | 0.000   | Continuing       | Continuing |
| 65A012: <i>Net-centric Sensors and Data Sources</i> | 43.709          | 9.584   | 12.603               | 12.018       | -                         | 12.018        | 7.181   | 0.000   | 0.000   | 0.000   | Continuing       | Continuing |
| 65A026: <i>C-Band Radar</i>                         | 0.000           | 0.000   | 0.000                | 8.540        | -                         | 8.540         | 0.000   | 0.000   | 0.000   | 0.000   | Continuing       | Continuing |
| 65A038: <i>SSA Environmental Monitoring</i>         | 71.648          | 28.454  | 0.000                | 0.000        | -                         | 0.000         | 0.000   | 0.000   | 0.000   | 0.000   | Continuing       | Continuing |

**MDAP/MAIS Code(s):** 328,438

<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**

Space Situational Awareness (SSA) is knowledge of all aspects of space related to operations. As the foundation for space control, SSA encompasses intelligence on adversary space operations; surveillance of all space objects and activities; detailed reconnaissance of specific space assets; monitoring space environmental conditions; monitoring cooperative space assets; and conducting integrated command, control, communications, processing, analysis, dissemination, and archiving activities. This program element develops new Air Force sensors, and improved information capabilities for integration across the SSA network; it also includes developmental planning and technology forecasting for future blocks and emerging needs.

A companion program element, 0305940F, Space Situational Awareness Operations, fields, upgrades, operates, and sustains existing sensors and information integration capabilities within the SSA network. An additional companion program element, 0305614F, JSpOC Mission System, processes surveillance of all space objects and activities, maintains detailed reconnaissance of space assets, fuses space data, maintains awareness of cooperative space assets, and allows JFCC-Space to conduct integrated C2 of space forces.

Development activities are necessary to deploy new advanced sensors capable of searching for, tracking, and identifying the expanding number of debris objects on orbit as well as the increasing number of satellites launched by other nations, of which many are smaller and more capable than previous spacecraft. These activities are also required to better integrate the disparate elements of SSA in order to enable rapid, responsive space operations.

The efforts in PE 0604425 are in Budget Activity 5, System Development and Demonstration, because they are conducting development tasks aimed at meeting validated requirements prior to full-rate production.

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| Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force                |  |                                                |         | DATE: April 2013 |             |               |
| APPROPRIATION/BUDGET ACTIVITY                                                  |  | R-1 ITEM NOMENCLATURE                          |         |                  |             |               |
| 3600: Research, Development, Test & Evaluation, Air Force                      |  | PE 0604425F: Space Situation Awareness Systems |         |                  |             |               |
| BA 5: System Development & Demonstration (SDD)                                 |  |                                                |         |                  |             |               |
| B. Program Change Summary (\$ in Millions)                                     |  | FY 2012                                        | FY 2013 | FY 2014 Base     | FY 2014 OCO | FY 2014 Total |
| Previous President's Budget                                                    |  | 238.261                                        | 267.252 | 340.905          | -           | 340.905       |
| Current President's Budget                                                     |  | 216.212                                        | 267.252 | 400.258          | -           | 400.258       |
| Total Adjustments                                                              |  | -22.049                                        | 0.000   | 59.353           | -           | 59.353        |
| • 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                                                               |  | -9.220                                         | 0.000   |                  |             |               |
| • SBIR/STTR Transfer                                                           |  | -12.829                                        | 0.000   |                  |             |               |
| • Other Adjustments                                                            |  | 0.000                                          | 0.000   | 59.353           | -           | 59.353        |
| Change Summary Explanation                                                     |  |                                                |         |                  |             |               |
| FY12: -\$9.22M reprogramming from Space Fence for higher Department priorities |  |                                                |         |                  |             |               |
| FY12: -\$12.829 SBIR                                                           |  |                                                |         |                  |             |               |
| FY14: -\$6.0M SBSS Follow-On cancelled                                         |  |                                                |         |                  |             |               |
| FY14: +\$56.8M add funds for Space Fence                                       |  |                                                |         |                  |             |               |
| FY14: +\$8.54M C-Band Radar New Start                                          |  |                                                |         |                  |             |               |
| FY14: +\$.06M add funds for NCSDS                                              |  |                                                |         |                  |             |               |

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|----------------------|--------------|-------------------------------------------------------------------------|---------------|---------|---------|---------------------------------------------------|------------------|------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |                      |              |                                                                         |               |         |         |                                                   | DATE: April 2013 |                  |            |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0604425F: Space Situation Awareness Systems |               |         |         | PROJECT<br>65A006: Space Based Space Surveillance |                  |                  |            |
| 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 |
| 65A006: Space Based Space Surveillance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 968.453         | 0.000   | 2.071                | 2.000        | -                                                                       | 2.000         | 0.000   | 0.000   | 0.000                                             | 0.000            | Continuing       | Continuing |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | 0       | 0                    | 0            |                                                                         | 0             | 0       | 0       | 0                                                 | 0                |                  |            |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |         |                      |              |                                                                         |               |         |         |                                                   |                  |                  |            |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |                      |              |                                                                         |               |         |         |                                                   |                  |                  |            |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                         |               |         |         |                                                   |                  |                  |            |
| The Space-Based Space Surveillance (SBSS) Block 10 satellite (launched on 25 September 2010) builds upon the success of the Space-Based Visible (SBV) technology demonstration, which proved the utility of conducting space object surveillance from space. SBSS provides the capability to search, detect, and track objects primarily in deep space. It accomplishes this via collecting and processing space object identification and satellite metric data, then communicating it to command and control nodes. Surveillance from space augments existing ground sensors with timely 24-hour, all-weather, all-geography object search capabilities. In conjunction with information from other Space Situational Awareness (SSA) network sensors, SBSS data enables more timely detection and tracking of space objects, particularly those in deep space. |                 |         |                      |              |                                                                         |               |         |         |                                                   |                  |                  |            |
| The SBSS Follow-on program was terminated in FY14 and beyond to pay for higher department priorities. Current FY14 funding will pay for a Lawrence Livermore National Laboratory (LLNL) initiative called Space-based Telescopes for Actionable Refinement of Ephemeris (STARE). The project will study the potential for a constellation of low Earth orbiting nano satellites to observe objects in deep space.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |         |                      |              |                                                                         |               |         |         |                                                   |                  |                  |            |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                         |               |         |         | FY 2012                                           | FY 2013          | FY 2014          |            |
| Title: Program Support and Management Services                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |         |                      |              |                                                                         |               |         |         | 0.000                                             | 2.071            | 2.000            |            |
| Description: Program management support for space-based space surveillance activities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |         |                      |              |                                                                         |               |         |         |                                                   |                  |                  |            |
| FY 2013 Plans:<br>Conducting acquisition strategy planning and Space Situational Awareness (SSA) architecture analysis to support future generation space-based SSA capabilities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |         |                      |              |                                                                         |               |         |         |                                                   |                  |                  |            |
| FY 2014 Plans:<br>LLNL will study the potential for using STARE to observe deep space objects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |         |                      |              |                                                                         |               |         |         |                                                   |                  |                  |            |
| Accomplishments/Planned Programs Subtotals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |         |                      |              |                                                                         |               |         |         | 0.000                                             | 2.071            | 2.000            |            |
| C. Other Program Funding Summary (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |         |                      |              |                                                                         |               |         |         |                                                   |                  |                  |            |
| N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |         |                      |              |                                                                         |               |         |         |                                                   |                  |                  |            |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force                                                                                                                                                                                                                                                                                                                                                        |                                                                                       | DATE: April 2013                                                |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                                                                                                                                                                                           | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: <i>Space Situation Awareness Systems</i> | <b>PROJECT</b><br>65A006: <i>Space Based Space Surveillance</i> |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |                                                                 |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                       |                                                                 |
| <b>D. Acquisition Strategy</b><br>The SBSS Block 10 system is currently operational. The SBSS Follow-On program is terminated in the FY14 PB. Architectural studies are being conducted in FY13 to determine the best way to provide any future space-based space surveillance beyond the life of the current system. LLNL will study the potential for STARE to supplement deep space catalog maintenance in FY14. |                                                                                       |                                                                 |
| <b>E. Performance Metrics</b><br>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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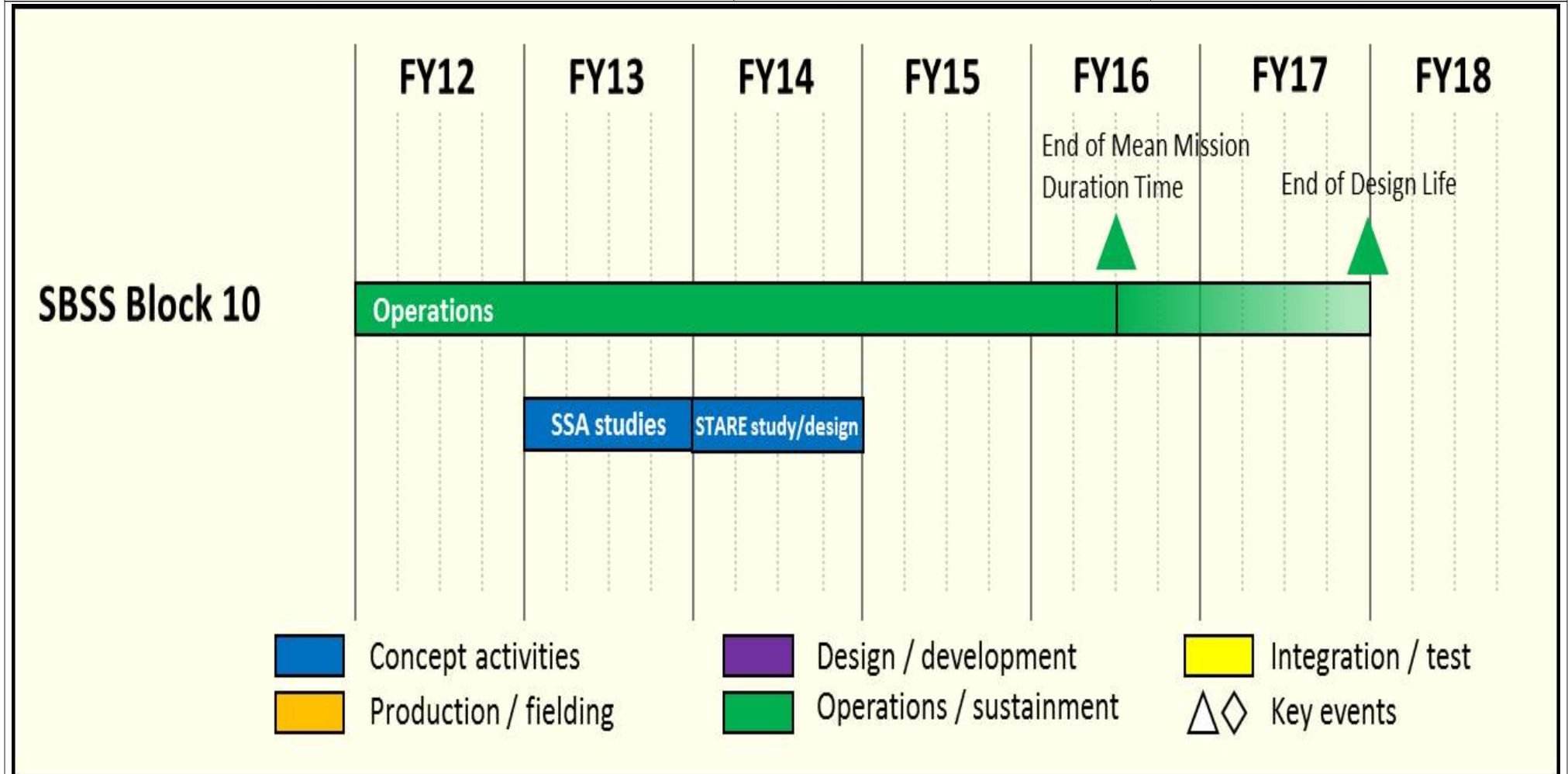
|                                                                                                                                                                           |                                   |                                                        |                        |                |                   |                                                                                       |                   |                     |                   |                    |                   |                                                                 |                         |                   |                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------------------------|------------------------|----------------|-------------------|---------------------------------------------------------------------------------------|-------------------|---------------------|-------------------|--------------------|-------------------|-----------------------------------------------------------------|-------------------------|-------------------|---------------------------------|
| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</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 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                                        |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: <i>Space Situation Awareness Systems</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>65A006: <i>Space Based Space Surveillance</i> |                         |                   |                                 |
| <b>Product Development (\$ in Millions)</b>                                                                                                                               |                                   |                                                        |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                        |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                            |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                                 | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>              | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                           | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                     | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Block 10 design and development                                                                                                                                           | C/CPAF                            | Northrop Grumman:Redondo Beach, CA                     | 549.291                | 0.000          |                   | 0.000                                                                                 |                   | 0.000               |                   | -                  |                   | 0.000                                                           | 0.000                   | 549.291           |                                 |
| Block 10 Technical risk reduction, mission planning & mission data processing                                                                                             | SS/CPFF                           | MIT Lincoln Laboratory:Lexington, MA                   | 29.271                 | 0.000          |                   | 0.000                                                                                 |                   | 0.000               |                   | -                  |                   | 0.000                                                           | 0.000                   | 29.271            |                                 |
| Block 10 Launch vehicle integration                                                                                                                                       | MIPR                              | Space and Missile Systems Center Det.:Kirtland AFB, NM | 85.644                 | 0.000          |                   | 0.000                                                                                 |                   | 0.000               |                   | -                  |                   | 0.000                                                           | 0.000                   | 85.644            |                                 |
| Block 10 contractor ops & Interim Contract Support                                                                                                                        | SS/CPAF                           | Boeing:Huntington Beach, CA                            | 152.223                | 0.000          |                   | 0.000                                                                                 |                   | 0.000               |                   | -                  |                   | 0.000                                                           | 0.000                   | 152.223           |                                 |
| SBSS Follow-on Design & Development                                                                                                                                       | Various                           | Various:Various,                                       | 8.430                  | 0.000          |                   | 0.000                                                                                 |                   | 0.000               |                   | -                  |                   | 0.000                                                           | 0.000                   | 8.430             |                                 |
| SSA risk reduction and technology transfer                                                                                                                                | Various                           | Various:Various,                                       | 33.247                 | 0.000          |                   | 0.000                                                                                 |                   | 0.000               |                   | -                  |                   | 0.000                                                           | 0.000                   | 33.247            |                                 |
| STARE Study and Design work                                                                                                                                               | MIPR                              | Lawrence Livermore National Laboratory:Livermore, CA   | 0.000                  | 0.000          |                   | 0.000                                                                                 |                   | 2.000               | Oct 2013          | -                  |                   | 2.000                                                           | 0.000                   | 2.000             |                                 |
| <b>Subtotal</b>                                                                                                                                                           |                                   |                                                        | 858.106                | 0.000          |                   | 0.000                                                                                 |                   | 2.000               |                   | 0.000              |                   | 2.000                                                           | 0.000                   | 860.106           |                                 |
| <b>Support (\$ in Millions)</b>                                                                                                                                           |                                   |                                                        |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                        |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                            |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                                 | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>              | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                           | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                     | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Program Office Support, FFRDC                                                                                                                                             | SS/CPFF                           | Aerospace:Los Angeles, CA                              | 43.773                 | 0.000          |                   | 0.977                                                                                 | Oct 2012          | 0.000               |                   | -                  |                   | 0.000                                                           | 0.000                   | 44.750            |                                 |
| Engineering and Technical Services                                                                                                                                        | C/FFP                             | AT&T Government Solutions, Inc:Los Angeles, CA         | 21.310                 | 0.000          |                   | 0.708                                                                                 | Dec 2012          | 0.000               |                   | -                  |                   | 0.000                                                           | 0.000                   | 22.018            |                                 |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Air Force</b>                                                                              |                                   |                                           |                        |                |                   |                                                                                |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                                  |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 5: System Development & Demonstration (SDD) |                                   |                                           |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: Space Situation Awareness Systems |                   |                     |                   |                    |                   | <b>PROJECT</b><br>65A006: Space Based Space Surveillance |                         |                   |                                 |
| <b>Support (\$ in Millions)</b>                                                                                                                     |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                     |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                           | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                              | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Other Support Activities                                                                                                                            | Various                           | Various:Los Angeles, CA                   | 30.708                 | 0.000          |                   | 0.265                                                                          | Oct 2012          | 0.000               |                   | -                  |                   | 0.000                                                    | 0.000                   | 30.973            |                                 |
| <b>Subtotal</b>                                                                                                                                     |                                   |                                           | 95.791                 | 0.000          |                   | 1.950                                                                          |                   | 0.000               |                   | 0.000              |                   | 0.000                                                    | 0.000                   | 97.741            |                                 |
| <b>Test and Evaluation (\$ in Millions)</b>                                                                                                         |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                     |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                           | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                              | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| <b>Subtotal</b>                                                                                                                                     |                                   |                                           | 0.000                  | 0.000          |                   | 0.000                                                                          |                   | 0.000               |                   | 0.000              |                   | 0.000                                                    | 0.000                   | 0.000             | 0.000                           |
| <b>Management Services (\$ in Millions)</b>                                                                                                         |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                     |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                           | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                              | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Program Management Activities (other PMA)                                                                                                           | Various                           | Various:Los Angeles, CA                   | 9.718                  | 0.000          |                   | 0.021                                                                          | Dec 2012          | 0.000               |                   | -                  |                   | 0.000                                                    | 0.000                   | 9.739             |                                 |
| SMC Financial Services                                                                                                                              | C/FFP                             | Tecolote Research, Inc:Los Angeles, CA    | 4.838                  | 0.000          |                   | 0.100                                                                          |                   | 0.000               |                   | -                  |                   | 0.000                                                    | 0.000                   | 4.938             |                                 |
| <b>Subtotal</b>                                                                                                                                     |                                   |                                           | 14.556                 | 0.000          |                   | 0.121                                                                          |                   | 0.000               |                   | 0.000              |                   | 0.000                                                    | 0.000                   | 14.677            |                                 |
|                                                                                                                                                     |                                   |                                           | <b>All Prior Years</b> | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                     | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| <b>Project Cost Totals</b>                                                                                                                          |                                   |                                           | 968.453                | 0.000          |                   | 2.071                                                                          |                   | 2.000               |                   | 0.000              |                   | 2.000                                                    | 0.000                   | 972.524           |                                 |
| <b>Remarks</b>                                                                                                                                      |                                   |                                           |                        |                |                   |                                                                                |                   |                     |                   |                    |                   |                                                          |                         |                   |                                 |

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| <b>Exhibit R-4, RDT&amp;E Schedule Profile:</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 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: <i>Space Situation Awareness Systems</i> | <b>PROJECT</b><br>65A006: <i>Space Based Space Surveillance</i> |



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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 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: <i>Space Situation Awareness Systems</i> | <b>PROJECT</b><br>65A006: <i>Space Based Space Surveillance</i> |

Schedule Details

| Events                             | Start   |      | End     |      |
|------------------------------------|---------|------|---------|------|
|                                    | Quarter | Year | Quarter | Year |
| Block 10 Ops                       | 1       | 2012 | 4       | 2017 |
| Space Based SSA alternatives study | 1       | 2013 | 4       | 2013 |
| STARE Work                         | 1       | 2014 | 4       | 2014 |

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|----------------------|--------------|-------------------------------------------------------------------------|---------------|---------|---------|--------------------------------|------------------|------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |         |                      |              |                                                                         |               |         |         |                                | DATE: April 2013 |                  |            |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0604425F: Space Situation Awareness Systems |               |         |         | PROJECT<br>65A009: Space Fence |                  |                  |            |
| 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 |
| 65A009: Space Fence                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 252.280         | 178.174 | 252.578              | 377.700      | -                                                                       | 377.700       | 378.700 | 218.900 | 108.600                        | 0.000            | Continuing       | Continuing |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | 0       | 0                    | 0            |                                                                         | 0             | 0       | 0       | 0                              | 0                |                  |            |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |         |                      |              |                                                                         |               |         |         |                                |                  |                  |            |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |         |                      |              |                                                                         |               |         |         |                                |                  |                  |            |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |         |                      |              |                                                                         |               |         |         |                                |                  |                  |            |
| The Space Fence effort will develop a system of ground-based sensors to improve upon the aging Air Force Space Surveillance System (AFSSS), a Very High Frequency (VHF) radar operational since 1961. The Space Fence will provide more accurate and timely detection of smaller orbiting objects, primarily in low-earth orbit (LEO). The system will use co-located higher frequency radar transmitters and receivers at globally dispersed sites. As a result, it will greatly expand the uncued detection and tracking capacity of the Space Surveillance Network, from around 20,000 to up to 100,000 objects, while working in concert with other network sensors. |                 |         |                      |              |                                                                         |               |         |         |                                |                  |                  |            |
| The efforts for this project are in Budget Activity 5, System Development and Demonstration, because they are conducting development tasks aimed at meeting validated requirements prior to full-rate production.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |         |                      |              |                                                                         |               |         |         |                                |                  |                  |            |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |         |                      |              |                                                                         |               |         |         | FY 2012                        | FY 2013          | FY 2014          |            |
| Title: Space Fence                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |         |                      |              |                                                                         |               |         |         | 178.174                        | 252.578          | 377.700          |            |
| Description: Space Fence contractors completed Phase A prototyping activities and the program conducted a Preliminary Design Review. The Air Force is proceeding through acquisition Milestone B activities and released a Request for Proposal (RFP) for the final system development and production contract to be awarded in the third quarter of FY13.                                                                                                                                                                                                                                                                                                               |                 |         |                      |              |                                                                         |               |         |         |                                |                  |                  |            |
| FY 2012 Accomplishments:<br>The two contractors completed a Preliminary Design Review and risk reduction activities, including a 60% facilities design and end-to-end prototype demonstration of design approaches.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |                      |              |                                                                         |               |         |         |                                |                  |                  |            |
| The Milestone Decision Authority (MDA) approved the Space Fence Acquisition Strategy to support Milestone B.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |         |                      |              |                                                                         |               |         |         |                                |                  |                  |            |
| FY 2013 Plans:<br>MDA authorizing release of the RFP for the Engineering and Manufacturing Development (EMD) contract in first quarter of FY13. The program is conducting source selection and is receiving Milestone B approval and awarding the contract and in third quarter of FY13. Space Fence is securing Air Force approval of its candidate Critical Technology Elements (CTEs) and concurrence on the Preliminary Technology Readiness Assessment.                                                                                                                                                                                                             |                 |         |                      |              |                                                                         |               |         |         |                                |                  |                  |            |
| FY 2014 Plans:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              |                                                                         |               |         |         |                                |                  |                  |            |

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|-------------------------|------------------------|---------------------------------------------------------------------------------------|----------------|----------------|----------------|----------------|----------------------------------------------|-------------------|---------|
| Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |                |                         |                        |                                                                                       |                |                |                |                | DATE: April 2013                             |                   |         |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |                         |                        | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: <i>Space Situation Awareness Systems</i> |                |                |                |                | <b>PROJECT</b><br>65A009: <i>Space Fence</i> |                   |         |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |                |                         |                        |                                                                                       |                |                |                |                | FY 2012                                      | FY 2013           | FY 2014 |
| The contractor will conduct EMD, Production and Deployment activities in support of Integrated System Design culminating in a Critical Design Review, Systems Engineering & Integration and technical and program support. The contractor will begin site 1 construction.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |                         |                        |                                                                                       |                |                |                |                |                                              |                   |         |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                |                         |                        |                                                                                       |                |                |                |                | 178.174                                      | 252.578           | 377.700 |
| <b>C. 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> |         |
| • OPAF: BA03: 836790: <i>Space Mods Space</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.000          | 0.000          | 0.000                   |                        | 0.000                                                                                 | 0.000          | 0.000          | 0.000          | 49.100         | Continuing                                   | Continuing        |         |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |                |                         |                        |                                                                                       |                |                |                |                |                                              |                   |         |
| <b>D. Acquisition Strategy</b><br>Lockheed Martin and Raytheon successfully completed contracts for development through Preliminary Design Review (PDR). In FY13, A final full and open competition will conclude and a single Engineering and Manufacturing Development (EMD), Production and Deployment contract will be awarded. The contract will take a single contractor through Critical Design Review (CDR), fabrication, integration, test, production and deployment, with up to two years of Interim Contractor Support (ICS). The program will utilize a two increment approach. Increment 1/Initial Operational Capability (IOC) will consist of successful operations at the first radar site located in the Kwajalein Atoll. Milestone B for Increment 1 is planned for FY13. Increment 2/Full Operational Capability (FOC) is planned for FY20 and will include completion of the second radar at a location which is still under negotiations with the proposed host nation. |                |                |                         |                        |                                                                                       |                |                |                |                |                                              |                   |         |
| <b>E. Performance Metrics</b><br>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 5: System Development & Demonstration (SDD) |                        |                                           |                 |         |            |         |            | R-1 ITEM NOMENCLATURE<br>PE 0604425F: Space Situation Awareness Systems |            |             |            | PROJECT<br>65A009: Space Fence |                  |            |                          |
| 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 |
| Design and development (Lockheed Martin)                                                                                                     | C/FFP                  | Lockheed Martin:Moorestown, NJ            | 30.000          | 0.000   |            | 0.000   |            | 0.000                                                                   |            | -           |            | 0.000                          | 0.000            | 30.000     | 30.000                   |
| Design and development (Northrop Grumman)                                                                                                    | C/FFP                  | Northrop Grumman:Linthicum Heights, MD    | 15.922          | 0.000   |            | 0.000   |            | 0.000                                                                   |            | -           |            | 0.000                          | 0.000            | 15.922     | 15.922                   |
| Design and development (Raytheon)                                                                                                            | C/FFP                  | Raytheon:Sudbury, MA                      | 30.000          | 0.000   |            | 0.000   |            | 0.000                                                                   |            | -           |            | 0.000                          | 0.000            | 30.000     | 30.000                   |
| System design and prototyping (Lockheed Martin)                                                                                              | C/FFP                  | Lockheed Martin:Moorestown, NJ            | 62.567          | 49.167  | Oct 2011   | 0.000   |            | 0.000                                                                   |            | -           |            | 0.000                          | 0.000            | 111.734    | 111.734                  |
| System design and prototyping (Raytheon)                                                                                                     | C/FFP                  | Raytheon:Sudbury, MA                      | 63.266          | 48.349  | Oct 2011   | 0.000   |            | 0.000                                                                   |            | -           |            | 0.000                          | 0.000            | 111.615    | 111.615                  |
| System development                                                                                                                           | Various                | TBD:TBD,                                  | 0.000           | 66.627  | Apr 2013   | 236.419 | Apr 2013   | 362.666                                                                 | Oct 2013   | -           |            | 362.666                        | 671.894          | 1,337.606  | 1,363.606                |
| Subtotal                                                                                                                                     |                        |                                           | 201.755         | 164.143 |            | 236.419 |            | 362.666                                                                 |            | 0.000       |            | 362.666                        | 671.894          | 1,636.877  | 1,662.877                |
| 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 |
| Various (Independent Program Assessment, site survey, travel)                                                                                | Various                | Various:Various,                          | 0.000           | 1.086   | Oct 2011   | 0.459   | Oct 2012   | 0.465                                                                   | Oct 2012   | -           |            | 0.465                          | 1.209            | 3.219      | 3.219                    |
| Design Oversight and Management (Software Engineering Institute)                                                                             | SS/FP                  | Carnegie Mellon University:Pittsburgh, PA | 0.000           | 0.130   | Jul 2012   | 0.000   |            | 0.000                                                                   |            | -           |            | 0.000                          | 0.000            | 0.130      | 0.130                    |
| Design Oversight and Management (Mitre)                                                                                                      | SS/FP                  | Mitre Corp:Bedford, MA                    | 10.066          | 3.946   | Nov 2011   | 4.679   | Nov 2012   | 3.916                                                                   | Nov 2013   | -           |            | 3.916                          | 8.110            | 30.717     | 30.717                   |
| Design Oversight and Management (MIT/LL)                                                                                                     | SS/FP                  | MIT Lincoln Laboratory:Lexington, MA      | 10.825          | 3.300   | Nov 2011   | 3.642   | Nov 2012   | 1.766                                                                   | Nov 2013   | -           |            | 1.766                          | 3.654            | 23.187     | 23.187                   |
| Subtotal                                                                                                                                     |                        |                                           | 20.891          | 8.462   |            | 8.780   |            | 6.147                                                                   |            | 0.000       |            | 6.147                          | 12.973           | 57.253     | 57.253                   |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Air Force</b>                                                                                                    |                                   |                                                       |                        |                |                   |                                                                                       |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                      |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                                       |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: <i>Space Situation Awareness Systems</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>65A009: <i>Space Fence</i> |                         |                   |                                 |
| <b>Test and Evaluation (\$ in Millions)</b>                                                                                                                               |                                   |                                                       |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                        |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                         |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                                 | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>             | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                           | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                  | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Test - 46th Test Group                                                                                                                                                    | PO                                | 46th Test Group:Eglin AFB, FL                         | 0.000                  | 0.259          | Feb 2012          | 0.741                                                                                 | Jan 2013          | 0.935               | Jan 2014          | -                  |                   | 0.935                                        | 5.045                   | 6.980             | 6.980                           |
| Test - Joint Interoperability Test Command                                                                                                                                | MIPR                              | Joint Interoperability Test Command:Fort Huachuca, AZ | 0.000                  | 0.023          | May 2012          | 0.024                                                                                 | Jan 2013          | 0.024               | Jan 2014          | -                  |                   | 0.024                                        | 0.393                   | 0.464             | 0.464                           |
| <b>Subtotal</b>                                                                                                                                                           |                                   |                                                       | 0.000                  | 0.282          |                   | 0.765                                                                                 |                   | 0.959               |                   | 0.000              |                   | 0.959                                        | 5.438                   | 7.444             | 7.444                           |
| <b>Management Services (\$ in Millions)</b>                                                                                                                               |                                   |                                                       |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                        |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                         |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                                 | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>             | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                           | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                  | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Program Office Support (Infrastructure) (PMA)                                                                                                                             | Various                           | Various:Various,                                      | 12.205                 | 1.307          | Oct 2011          | 2.300                                                                                 | Dec 2012          | 3.740               | Oct 2013          | -                  |                   | 3.740                                        | 6.522                   | 26.074            | 26.074                          |
| Program Office Support, Technical Studies and Analysis, Systems Engineering and Integration Management (PMA)                                                              | Various                           | Various:Various,                                      | 5.114                  | 0.556          | Oct 2011          | 0.665                                                                                 | Oct 2012          | 0.670               | Oct 2013          | -                  |                   | 0.670                                        | 2.062                   | 9.067             | 9.067                           |
| Development Review and Management (Odyssey) (PMA)                                                                                                                         | C/CPFF                            | Odyssey Systems:Wakefield, MA                         | 5.364                  | 1.984          | Feb 2012          | 1.789                                                                                 | Nov 2012          | 1.396               | Dec 2013          | -                  |                   | 1.396                                        | 2.675                   | 13.208            | 13.208                          |
| Development Review and Management (Jacobs) (PMA)                                                                                                                          | C/CPFF                            | Jacobs Technology:Tullehoma, TN                       | 6.951                  | 1.440          | Jan 2012          | 1.860                                                                                 | Dec 2012          | 2.122               | Dec 2013          | -                  |                   | 2.122                                        | 4.636                   | 17.009            | 17.009                          |
| <b>Subtotal</b>                                                                                                                                                           |                                   |                                                       | 29.634                 | 5.287          |                   | 6.614                                                                                 |                   | 7.928               |                   | 0.000              |                   | 7.928                                        | 15.895                  | 65.358            | 65.358                          |
| <b>Project Cost Totals</b>                                                                                                                                                |                                   |                                                       | 252.280                | 178.174        |                   | 252.578                                                                               |                   | 377.700             |                   | 0.000              |                   | 377.700                                      | 706.200                 | 1,766.932         | 1,792.932                       |
| <b>Remarks</b>                                                                                                                                                            |                                   |                                                       |                        |                |                   |                                                                                       |                   |                     |                   |                    |                   |                                              |                         |                   |                                 |

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

DATE: April 2013

## APPROPRIATION/BUDGET ACTIVITY

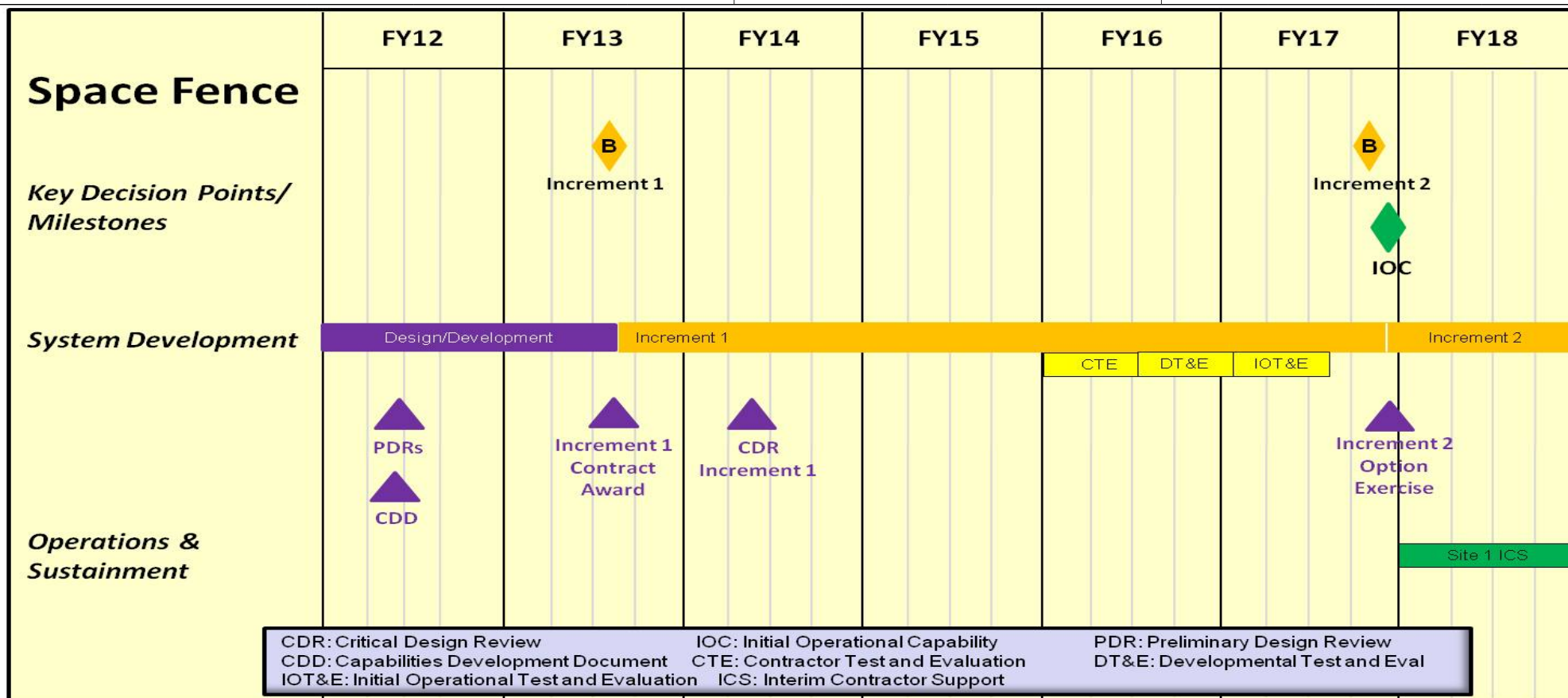
3600: Research, Development, Test & Evaluation, Air Force  
BA 5: System Development & Demonstration (SDD)

## R-1 ITEM NOMENCLATURE

PE 0604425F: Space Situation Awareness Systems

## PROJECT

65A009: Space Fence



 Engineering/Manufacturing/  
Development, Production and  
Deployment

 Design/development  
 Operations/sustainment

 Integration/test  
  Key events

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|                                                                                                                                                                           |                                                                                       |                                              |                         |
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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 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: <i>Space Situation Awareness Systems</i> | <b>PROJECT</b><br>65A009: <i>Space Fence</i> |                         |

## Schedule Details

| Events                                           | Start   |      | End     |      |
|--------------------------------------------------|---------|------|---------|------|
|                                                  | Quarter | Year | Quarter | Year |
| Capabilities Development Document                | 2       | 2012 | 2       | 2012 |
| Preliminary Design Review (PDR)                  | 2       | 2012 | 2       | 2012 |
| Milestone B Increment 1                          | 3       | 2013 | 3       | 2013 |
| Contract Award Increment 1                       | 3       | 2013 | 3       | 2013 |
| Critical Design Review (CDR) Increment 1         | 2       | 2014 | 2       | 2014 |
| Milestone B Increment 2                          | 4       | 2017 | 4       | 2017 |
| Initial Operational Capability (IOC) Increment 1 | 4       | 2017 | 4       | 2017 |
| Option Exercise Increment 2                      | 4       | 2017 | 4       | 2017 |

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|----------------------|--------------|-------------------------------------------------------------------------|---------------|---------|---------|---------------------------------------------------------|------------------|------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              |                                                                         |               |         |         |                                                         | DATE: April 2013 |                  |            |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0604425F: Space Situation Awareness Systems |               |         |         | PROJECT<br>65A012: Net-centric Sensors and Data Sources |                  |                  |            |
| 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 |
| 65A012: Net-centric Sensors and Data Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 43.709          | 9.584   | 12.603               | 12.018       | -                                                                       | 12.018        | 7.181   | 0.000   | 0.000                                                   | 0.000            | Continuing       | Continuing |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 | 0       | 0                    | 0            |                                                                         | 0             | 0       | 0       | 0                                                       | 0                |                  |            |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |                      |              |                                                                         |               |         |         |                                                         |                  |                  |            |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              |                                                                         |               |         |         |                                                         |                  |                  |            |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |         |                      |              |                                                                         |               |         |         |                                                         |                  |                  |            |
| Net-centric Sensors and Data Sources efforts migrate the space surveillance network, non-traditional SSA sensors and data sources for use by any entity (primarily the JSpOC) into a net-centric enterprise, enabling more rapid distribution of data to the warfighter based on an AFSPC provided prioritization list. This effort will define and implement the technical architecture, and support the concept to provide the foundational data necessary to enable rapid, responsive decisions by the Commander, US Strategic Command's Joint Functional Component Commander for Space and other national capability users to detect, evaluate, attribute space events. This effort builds upon and operationalizes the successful Extended Space Sensor Architecture Advanced Concept Technology Demonstration (ESSA ACTD) and prototypes how disparate and legacy space sensor network data can be translated into a net-centric operating environment. Data will be exposed as defined by published DoD and community interface standards to ensure technical interoperability. |                 |         |                      |              |                                                                         |               |         |         |                                                         |                  |                  |            |
| These efforts are in Budget Activity 5, System Development & Demonstration, because they develop and demonstrate validated requirements for better integration of SSA data.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |         |                      |              |                                                                         |               |         |         |                                                         |                  |                  |            |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |         |                      |              |                                                                         |               |         |         |                                                         | FY 2012          | FY 2013          | FY 2014    |
| Title: SENSOR & DATA INTEGRATION & EXPOSURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |         |                      |              |                                                                         |               |         |         |                                                         | 7.532            | 9.208            | 8.258      |
| Description: Providing Data Exposure and Data Source Integation Net-Centrically for consumption and use by the JSpOC and other users                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |         |                      |              |                                                                         |               |         |         |                                                         |                  |                  |            |
| FY 2012 Accomplishments:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |         |                      |              |                                                                         |               |         |         |                                                         |                  |                  |            |
| Delivered version 2 Roadmap resulting in program re-baselining. Transitioned Cheyenne Mountain Processor Space (CPS) Service Oriented Architecture (SOA) Server (CS^3) system to JSpOC Mission System (JMS). Completed Air Force Satellite Control Network (AFSCN) Link Protection System (ALPS) and first instantiation of the common data model.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |         |                      |              |                                                                         |               |         |         |                                                         |                  |                  |            |

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|-----------------|----------------|-------------------------------------------------------------------------|---------|---------|---------------------------------------------------------|---------|---------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |         |                 |                |                                                                         |         |         | DATE: April 2013                                        |         |                     |            |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |         |                 |                | R-1 ITEM NOMENCLATURE<br>PE 0604425F: Space Situation Awareness Systems |         |         | PROJECT<br>65A012: Net-centric Sensors and Data Sources |         |                     |            |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |         |                 |                |                                                                         |         |         | FY 2012                                                 | FY 2013 | FY 2014             |            |
| Delivered version 2 data source roadmapping. Developed a sustainable version of the sidecar for deployment at GEODSS Socorro in 3QFY13. Developed operational version of Blue Force Status (BFS) which reports on the Wideband Global SATCOM (WGS) system. Acquired ops acceptance for ALPS.<br><b>FY 2013 Plans:</b><br>Deliver version 3 data source road mapping. Deliver sustainable sidecar to GEODSS sites (Socorro, Maui, and Diego Garcia). Initiate data exposure of Defense Special Missile and Astronautics Center Daily Anticipated Activity Reports (DEFSMAC DAAR) , and Space Tracking and Surveillance System (STSS). Deploy BFS operational version which reports on WGS with ops acceptance. Begin health and status net-centric effort on ALPS and continue maturation of the common data model.<br><b>FY 2014 Plans:</b><br>Deliver version 4 data source road mapping. Initiate data exposure of two classified data sources, SIGINT for SSA (S3A), and Space Surveillance Telescope (SST). Deploy operational version of BFS on ALPS and acquire ops acceptance. Begin health and status net centric effort on Global Positioning System (GPS) and continue maturation of the common data model. |         |         |                 |                |                                                                         |         |         |                                                         |         |                     |            |
| <b>Title:</b> PROGRAM OFFICE SUPPORT<br><b>Description:</b> Program Office support and related support activities<br><br><b>FY 2012 Accomplishments:</b><br>Program office support and related activities such as technical studies and analysis, systems engineering and integration, and advanced concept technology demonstrations (ACTDs), including continuation of Blue Force status effort<br><b>FY 2013 Plans:</b><br>Program office support and related activities such as technical studies and analysis, systems engineering and integration, and advanced concept technology demonstrations (ACTDs), including continuation of Blue Force Status effort on new systems<br><b>FY 2014 Plans:</b><br>Program office support and related activities such as technical studies and analysis, systems engineering and integration, and advanced concept technology demonstrations (ACTDs), including continuation of Blue Force Status effort on new systems                                                                                                                                                                                                                                                   |         |         |                 |                |                                                                         |         |         | 2.052                                                   | 3.395   | 3.760               |            |
| Accomplishments/Planned Programs Subtotals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |         |                 |                |                                                                         |         |         | 9.584                                                   | 12.603  | 12.018              |            |
| C. Other Program Funding Summary (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |         |                 |                |                                                                         |         |         |                                                         |         |                     |            |
| Line Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | FY 2012 | FY 2013 | FY 2014<br>Base | FY 2014<br>OCO | FY 2014<br>Total                                                        | FY 2015 | FY 2016 | FY 2017                                                 | FY 2018 | Cost To<br>Complete | Total Cost |
| • OPAF: BA03: 836790: Space<br>Mods Space                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.000   | 4.480   | 4.720           |                | 4.720                                                                   | 4.618   | 4.597   | 0.000                                                   | 0.000   | 0.000               | 19.110     |

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| <b>Exhibit R-2A, RDT&amp;E Project 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 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                          |                |                |                | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: <i>Space Situation Awareness Systems</i> |                |                |                | <b>PROJECT</b><br>65A012: <i>Net-centric Sensors and Data Sources</i> |                |                         |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                           |                |                |                |                                                                                       |                |                |                |                                                                       |                |                         |                   |
|                                                                                                                                                                                                                                                    |                |                | <u>FY 2014</u> | <u>FY 2014</u>                                                                        | <u>FY 2014</u> |                |                |                                                                       |                | <u>Cost To</u>          |                   |
| <u>Line Item</u>                                                                                                                                                                                                                                   | <u>FY 2012</u> | <u>FY 2013</u> | <u>Base</u>    | <u>OCO</u>                                                                            | <u>Total</u>   | <u>FY 2015</u> | <u>FY 2016</u> | <u>FY 2017</u>                                                        | <u>FY 2018</u> | <u>Complete</u>         | <u>Total Cost</u> |
| <u>Remarks</u>                                                                                                                                                                                                                                     |                |                |                |                                                                                       |                |                |                |                                                                       |                |                         |                   |
| <b>D. Acquisition Strategy</b>                                                                                                                                                                                                                     |                |                |                |                                                                                       |                |                |                |                                                                       |                |                         |                   |
| Sensor and data sources activities utilize existing engineering and study contracts and a competitively selected system engineering team.                                                                                                          |                |                |                |                                                                                       |                |                |                |                                                                       |                |                         |                   |
| <b>E. 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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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------------|------------------------|----------------|-------------------|---------------------------------------------------------------------------------------|-------------------|---------------------|-------------------|--------------------|-------------------|-----------------------------------------------------------------------|-------------------------|-------------------|---------------------------------|
| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Air Force</b>                                                                                                    |                                   |                                                 |                        |                |                   |                                                                                       |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                                               |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                                 |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: <i>Space Situation Awareness Systems</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>65A012: <i>Net-centric Sensors and Data Sources</i> |                         |                   |                                 |
| <b>Product Development (\$ in Millions)</b>                                                                                                                               |                                   |                                                 |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                        |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                                  |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                                 | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>       | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                           | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                           | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Sensor Data Exposure - Sidecar Development                                                                                                                                | C/Various                         | MIT/LL:Lexington, MA                            | 10.119                 | 1.450          | Jan 2012          | 0.000                                                                                 |                   | 0.000               |                   | -                  |                   | 0.000                                                                 | 0.000                   | 11.569            | 11.569                          |
| Net-Centric Capability Development and Data Exposure                                                                                                                      | Various                           | Various:Various,                                | 14.117                 | 0.950          | Jan 2012          | 8.608                                                                                 | Jan 2013          | 7.958               | Jan 2014          | -                  |                   | 7.958                                                                 | 4.909                   | 36.542            | 36.317                          |
| Systems Engineering and Integration                                                                                                                                       | C/CPFF                            | Lockheed Martin Integrated Systems:Endicott, NY | 10.563                 | 4.737          | Jan 2012          | 0.000                                                                                 |                   | 0.000               |                   | -                  |                   | 0.000                                                                 | 0.000                   | 15.300            | 15.300                          |
| <b>Subtotal</b>                                                                                                                                                           |                                   |                                                 | 34.799                 | 7.137          |                   | 8.608                                                                                 |                   | 7.958               |                   | 0.000              |                   | 7.958                                                                 | 4.909                   | 63.411            | 63.186                          |
| <b>Support (\$ in Millions)</b>                                                                                                                                           |                                   |                                                 |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                        |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                                  |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                                 | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>       | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                           | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                           | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| <b>Subtotal</b>                                                                                                                                                           |                                   |                                                 | 0.000                  | 0.000          |                   | 0.000                                                                                 |                   | 0.000               |                   | 0.000              |                   | 0.000                                                                 | 0.000                   | 0.000             | 0.000                           |
| <b>Test and Evaluation (\$ in Millions)</b>                                                                                                                               |                                   |                                                 |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                        |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                                  |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                                 | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>       | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                           | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                           | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Test and Evaluation Activities                                                                                                                                            | RO                                | 46th Test Squadron:Eglin AFB, FL                | 0.493                  | 0.120          | Jan 2012          | 0.600                                                                                 | Jan 2013          | 0.300               | Jan 2014          | -                  |                   | 0.300                                                                 | 0.200                   | 1.713             | 1.713                           |
| <b>Subtotal</b>                                                                                                                                                           |                                   |                                                 | 0.493                  | 0.120          |                   | 0.600                                                                                 |                   | 0.300               |                   | 0.000              |                   | 0.300                                                                 | 0.200                   | 1.713             | 1.713                           |

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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 5: System Development & Demonstration (SDD) |                        |                                 |                 |         |            | R-1 ITEM NOMENCLATURE<br>PE 0604425F: Space Situation Awareness Systems |            |              |            | PROJECT<br>65A012: Net-centric Sensors and Data Sources |            |                  |                  |            |                          |
| 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 office Engineering Support (FFRDC)                                                                                                   | SS/CPFF                | Aerospace Corp.:Los Angeles, CA | 3.034           | 0.400   | Oct 2011   | 0.479                                                                   | Oct 2012   | 0.673        | Oct 2013   | -                                                       |            | 0.673            | 0.196            | 4.782      | 4.782                    |
| Engineering, Technical., Financial and Other Services (PMA)                                                                                  | C/Various              | Various:Los Angeles, CA         | 5.383           | 1.927   | Dec 2011   | 2.916                                                                   | Dec 2012   | 3.087        | Dec 2013   | -                                                       |            | 3.087            | 1.876            | 15.189     | 15.189                   |
| Subtotal                                                                                                                                     |                        |                                 | 8.417           | 2.327   |            | 3.395                                                                   |            | 3.760        |            | 0.000                                                   |            | 3.760            | 2.072            | 19.971     | 19.971                   |
|                                                                                                                                              |                        |                                 | 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                                                                                                                          |                        |                                 | 43.709          | 9.584   |            | 12.603                                                                  |            | 12.018       |            | 0.000                                                   |            | 12.018           | 7.181            | 85.095     | 84.870                   |
| Remarks                                                                                                                                      |                        |                                 |                 |         |            |                                                                         |            |              |            |                                                         |            |                  |                  |            |                          |

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

DATE: April 2013

## APPROPRIATION/BUDGET ACTIVITY

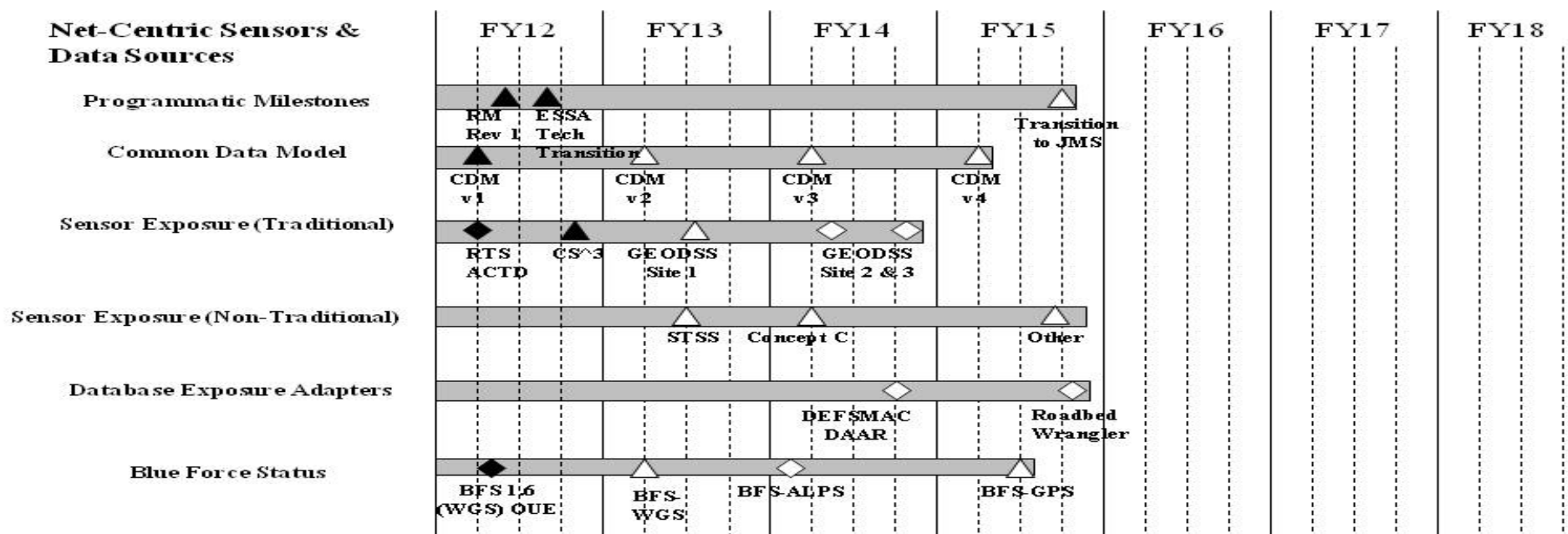
3600: Research, Development, Test & Evaluation, Air Force  
BA 5: System Development & Demonstration (SDD)

## R-1 ITEM NOMENCLATURE

PE 0604425F: Space Situation Awareness Systems

## PROJECT

65A012: Net-centric Sensors and Data Sources



AFSCN: Air Force Satellite Control Network

ALPS: AFSCN Link Protection System

BFS: Blue Force Status

CDM: Common Data Model

RTS: Regan Test Site

DEFSMAC DAAR: Defense Missile and Astronautics Center Daily Anticipated Activity Report

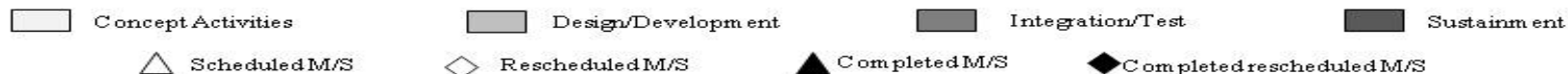
GEODSS: Ground Based Electro-Optical Deep Space Surveillance

S3A: SIGINT for SSA

SAGE: Space Awareness & Global Exploitation

SST: Space Surveillance Telescope

STSS: Space Tracking & Surveillance System



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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 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: <i>Space Situation Awareness Systems</i> | <b>PROJECT</b><br>65A012: <i>Net-centric Sensors and Data Sources</i> |                         |

## Schedule Details

| Events                                       | Start   |      | End     |      |
|----------------------------------------------|---------|------|---------|------|
|                                              | Quarter | Year | Quarter | Year |
| Reagan Test Site ACTD                        | 1       | 2012 | 1       | 2012 |
| ESSA Tech Transition                         | 3       | 2012 | 3       | 2012 |
| Common Data Model v1                         | 1       | 2012 | 1       | 2012 |
| Common Data Model v2                         | 1       | 2013 | 1       | 2013 |
| Blue Force Status - WGS                      | 1       | 2013 | 1       | 2013 |
| STSS                                         | 2       | 2013 | 2       | 2013 |
| GEODSS Site 1                                | 3       | 2013 | 3       | 2013 |
| GEODSS Site 2                                | 2       | 2014 | 2       | 2014 |
| GEODSS Site 3                                | 4       | 2014 | 4       | 2014 |
| DEFSMAC DAAR (Database Exposure Adapter)     | 3       | 2014 | 3       | 2014 |
| Common Data Model v3                         | 1       | 2014 | 1       | 2014 |
| Roadbed Wrangler (Database Exposure Adapter) | 4       | 2015 | 4       | 2015 |
| SST                                          | 4       | 2015 | 4       | 2015 |
| Common Data Model v4                         | 1       | 2015 | 1       | 2015 |
| Blue Force Status - GPS                      | 2       | 2015 | 2       | 2015 |
| Transition to JMS                            | 4       | 2015 | 4       | 2015 |

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|----------------------|--------------|-------------------------------------------------------------------------|---------------|---------|---------|---------------------------------|------------------|------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |         |                      |              |                                                                         |               |         |         |                                 | DATE: April 2013 |                  |            |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0604425F: Space Situation Awareness Systems |               |         |         | PROJECT<br>65A026: C-Band Radar |                  |                  |            |
| 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 |
| 65A026: C-Band Radar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.000           | 0.000   | 0.000                | 8.540        | -                                                                       | 8.540         | 0.000   | 0.000   | 0.000                           | 0.000            | Continuing       | Continuing |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 | 0       | 0                    | 0            |                                                                         | 0             | 0       | 0       | 0                               | 0                |                  |            |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |         |                      |              |                                                                         |               |         |         |                                 |                  |                  |            |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |         |                      |              |                                                                         |               |         |         |                                 |                  |                  |            |
| Note                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |         |                      |              |                                                                         |               |         |         |                                 |                  |                  |            |
| Although no funding is reflected for FY13 in this exhibit, this project received Congressional approval to begin in FY13 through both the FY13 National Defense Authorization Act and the FY13 Consolidated and Further Continuing Appropriations Act. The Cost Table information for FY13 will be updated upon submission of the FY15 President's Budget.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |         |                      |              |                                                                         |               |         |         |                                 |                  |                  |            |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |         |                      |              |                                                                         |               |         |         |                                 |                  |                  |            |
| A Memorandum of Understanding (MOU) between the United States Air Force and the Australian Department of Defence was signed by the United States Secretary of Defense and the Australian Minister for Defence on November 14, 2012 to support this international effort to provide an improved space situational awareness capability in the Australian geographic area. The MOU includes description of the need for Australian funding for part of the relocation project. The project will relocate a C-Band radar to Harold E. Holt Naval Communications Station (HEH NCS) in Australia and upgrade it to perform a Space Situational Awareness (SSA) mission. When completed, the radar will provide data for catalog maintenance, space object identification, and support for special events (e.g., space launches, satellite breakups, and maneuvers).<br>This program is in Budget Activity 5, System Development and Demonstration (SDD) because it is conducting engineering and manufacturing development tasks. |                 |         |                      |              |                                                                         |               |         |         |                                 |                  |                  |            |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |         |                      |              |                                                                         |               |         |         | FY 2012                         | FY 2013          | FY 2014          |            |
| Title: C-Band Radar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |         |                      |              |                                                                         |               |         |         | 0.000                           | 0.000            | 8.540            |            |
| Description: Relocate a C-Band radar to HEH NCS in Australia and upgrade it to perform a Space Situational Awareness (SSA) mission.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |         |                      |              |                                                                         |               |         |         |                                 |                  |                  |            |
| FY 2014 Plans:<br>Begin software and hardware upgrades; disassemble the radar and prepare for relocation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |         |                      |              |                                                                         |               |         |         |                                 |                  |                  |            |
| Accomplishments/Planned Programs Subtotals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |         |                      |              |                                                                         |               |         |         | 0.000                           | 0.000            | 8.540            |            |
| C. Other Program Funding Summary (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |         |                      |              |                                                                         |               |         |         |                                 |                  |                  |            |
| Line Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | FY 2012         | FY 2013 | FY 2014 Base         | FY 2014 OCO  | FY 2014 Total                                                           | FY 2015       | FY 2016 | FY 2017 | FY 2018                         | Cost To Complete | Total Cost       |            |
| • N/A: None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.000           | 0.000   | 0.000                |              | 0.000                                                                   | 0.000         | 0.000   | 0.000   | 0.000                           | 0.000            | 0.000            |            |

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|----------------|----------------|---------------------------------------------------------------------------------------|----------------|----------------|-----------------------------------------------|----------------|-------------------------|-------------------|
| <b>Exhibit R-2A, RDT&amp;E Project 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 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                                                                                       |                |                |                |                | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: <i>Space Situation Awareness Systems</i> |                |                | <b>PROJECT</b><br>65A026: <i>C-Band Radar</i> |                |                         |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                        |                |                |                |                |                                                                                       |                |                |                                               |                |                         |                   |
|                                                                                                                                                                                                                                                                                                                 |                |                | <u>FY 2014</u> | <u>FY 2014</u> | <u>FY 2014</u>                                                                        |                |                |                                               |                | <u>Cost To</u>          |                   |
| <u>Line Item</u>                                                                                                                                                                                                                                                                                                | <u>FY 2012</u> | <u>FY 2013</u> | <u>Base</u>    | <u>OCO</u>     | <u>Total</u>                                                                          | <u>FY 2015</u> | <u>FY 2016</u> | <u>FY 2017</u>                                | <u>FY 2018</u> | <u>Complete</u>         | <u>Total Cost</u> |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                  |                |                |                |                |                                                                                       |                |                |                                               |                |                         |                   |
| <b>D. Acquisition Strategy</b>                                                                                                                                                                                                                                                                                  |                |                |                |                |                                                                                       |                |                |                                               |                |                         |                   |
| This project will utilize a mix of experienced contractors, FFRDC and Air National Guard resources to upgrade the C-Band system in Antigua and then subsequently complete the relocation to Australia.                                                                                                          |                |                |                |                |                                                                                       |                |                |                                               |                |                         |                   |
| The start of the technical refresh activities (Radar Open Systems Architecture and Space Situational Awareness upgrades) is dependent upon the timing of receipt of new start approval and funding, but is currently planned to be accomplished before system relocation to Australia in 2015.                  |                |                |                |                |                                                                                       |                |                |                                               |                |                         |                   |
| The MOU between the United States Air Force and the Australian Department of Defence includes the need for Australian funding for part of the relocation project. Site renovation in Australia is planned to begin in FY13 as Australian funding becomes available which is reflected on the attached schedule. |                |                |                |                |                                                                                       |                |                |                                               |                |                         |                   |
| <b>E. 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 5: System Development & Demonstration (SDD)                   |                        |                                |                 |         |            | R-1 ITEM NOMENCLATURE<br>PE 0604425F: Space Situation Awareness Systems |            |              |            | PROJECT<br>65A026: C-Band Radar |            |                  |                  |            |                          |
| 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 |
| C-Band Radar Upgrades                                                                                                                                          | TBD                    | Various:,                      | 0.000           | 0.000   |            | 0.000                                                                   |            | 7.840        | Dec 2013   | -                               |            | 7.840            | 0.000            | 7.840      | 7.840                    |
| Subtotal                                                                                                                                                       |                        |                                | 0.000           | 0.000   |            | 0.000                                                                   |            | 7.840        |            | 0.000                           |            | 7.840            | 0.000            | 7.840      | 7.840                    |
| Remarks                                                                                                                                                        |                        |                                |                 |         |            |                                                                         |            |              |            |                                 |            |                  |                  |            |                          |
| Funding will be used to complete the Radar Open Systems Architecure (ROSA) and Space Surveillance Support Software (S4) upgrades to the existing C-Band Radar. |                        |                                |                 |         |            |                                                                         |            |              |            |                                 |            |                  |                  |            |                          |
| 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 Office Oversight (PMA)                                                                                                                                 | Various                | Various:Los Angeles, Ca        | 0.000           | 0.000   |            | 0.000                                                                   |            | 0.700        | Oct 2013   | -                               |            | 0.700            | 0.000            | 0.700      | 0.700                    |
| Subtotal                                                                                                                                                       |                        |                                | 0.000           | 0.000   |            | 0.000                                                                   |            | 0.700        |            | 0.000                           |            | 0.700            | 0.000            | 0.700      | 0.700                    |
|                                                                                                                                                                |                        |                                | 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           | 0.000   |            | 0.000                                                                   |            | 8.540        |            | 0.000                           |            | 8.540            | 0.000            | 8.540      | 8.540                    |
| Remarks                                                                                                                                                        |                        |                                |                 |         |            |                                                                         |            |              |            |                                 |            |                  |                  |            |                          |

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

DATE: April 2013

## APPROPRIATION/BUDGET ACTIVITY

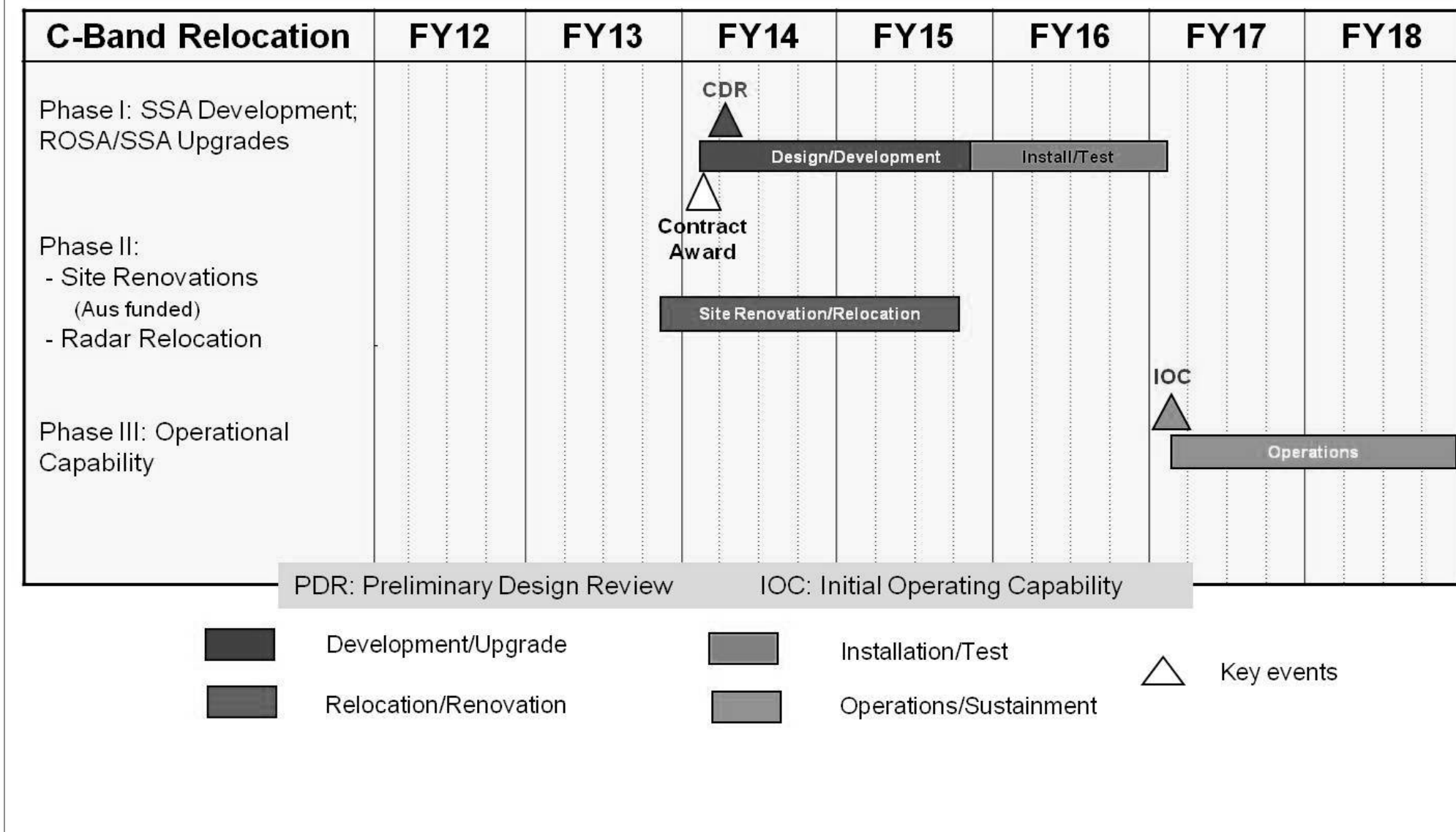
3600: Research, Development, Test & Evaluation, Air Force  
BA 5: System Development & Demonstration (SDD)

## R-1 ITEM NOMENCLATURE

PE 0604425F: Space Situation Awareness Systems

## PROJECT

65A026: C-Band Radar



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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|----------------------------------------|------------------|
| Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force                                                                                                            |                                                                                |                                        | DATE: April 2013 |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> | R-1 ITEM NOMENCLATURE<br>PE 0604425F: <i>Space Situation Awareness Systems</i> | PROJECT<br>65A026: <i>C-Band Radar</i> |                  |

Schedule Details

| Events         | Start   |      | End     |      |
|----------------|---------|------|---------|------|
|                | Quarter | Year | Quarter | Year |
| Contract Award | 1       | 2014 | 1       | 2014 |
| CDR            | 2       | 2014 | 2       | 2014 |
| IOC/Operations | 1       | 2017 | 1       | 2017 |

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|----------------------|--------------|-------------------------------------------------------------------------|---------------|---------|---------|-------------------------------------------------|------------------|------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              |                                                                         |               |         |         |                                                 | DATE: April 2013 |                  |            |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0604425F: Space Situation Awareness Systems |               |         |         | PROJECT<br>65A038: SSA Environmental Monitoring |                  |                  |            |
| 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 |
| 65A038: SSA Environmental Monitoring                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 71.648          | 28.454  | 0.000                | 0.000        | -                                                                       | 0.000         | 0.000   | 0.000   | 0.000                                           | 0.000            | Continuing       | Continuing |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 | 0       | 0                    | 0            |                                                                         | 0             | 0       | 0       | 0                                               | 0                |                  |            |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |                      |              |                                                                         |               |         |         |                                                 |                  |                  |            |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              |                                                                         |               |         |         |                                                 |                  |                  |            |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |         |                      |              |                                                                         |               |         |         |                                                 |                  |                  |            |
| In FY13, the project 65A038, SSA Environmental Monitoring (SSAEM), was terminated. The sensors that are currently under contract will be available for rideshare on the Constellation Observing System for Meteorology Ionosphere and Climate (COSMIC-2) satellite system or other available host platform.                                                                                                                                                                                                                                                                                            |                 |         |                      |              |                                                                         |               |         |         |                                                 |                  |                  |            |
| Space Situational Awareness Environmental Monitoring (SSAEM) replenishes the critical space weather sensing capability de-manifested from the next-generation weather program. It develops new on-orbit sensors that will detect ionospheric scintillation, supports information pertaining to GPS outages, prediction of effects of ionospheric density and electric fields and ensures data distribution to the user community.                                                                                                                                                                      |                 |         |                      |              |                                                                         |               |         |         |                                                 |                  |                  |            |
| Current sensor development contract period of performance will continue through FY14 to deliver sensors currently under development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |         |                      |              |                                                                         |               |         |         |                                                 |                  |                  |            |
| B. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |         |                      |              |                                                                         |               |         |         | FY 2012                                         | FY 2013          | FY 2014          |            |
| Title: SSAEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              |                                                                         |               |         |         | 28.454                                          | 0.000            | 0.000            |            |
| Description: Replenishes critical space weather sensing capability de-manifested from next generation weather program. Develops new on-orbit sensors that will detect ionospheric scintillation, GPS outages, predict effects and ensure data distribution to the user community.                                                                                                                                                                                                                                                                                                                      |                 |         |                      |              |                                                                         |               |         |         |                                                 |                  |                  |            |
| FY 2012 Accomplishments:<br>Completed risk reduction efforts, development/production of critical sensors and sensor to ground interface. Funded program office and related support activities, such as Acquisition Planning, Technical Studies, Systems Engineering and Integration.<br>-Completed two sensor Preliminary Design Reviews (PDR) and began Critical Design Reviews of all sensors<br>-Completed four of ten site surveys for Radio Frequency (RF) Beacon Ground Stations<br>-Attained initial frequency approval for RF Beacon Payload<br>-Manifested on new entrant EELV Launch Vehicle |                 |         |                      |              |                                                                         |               |         |         |                                                 |                  |                  |            |
| FY 2013 Plans:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |         |                      |              |                                                                         |               |         |         |                                                 |                  |                  |            |

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| <b>Exhibit R-2A, RDT&amp;E Project 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 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: <i>Space Situation Awareness Systems</i> | <b>PROJECT</b><br>65A038: <i>SSA Environmental Monitoring</i> |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | <b>FY 2012</b>                                                                        | <b>FY 2013</b>                                                |
| Program is terminated in FY13.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                       |                                                               |
| <b>FY 2014 Plans:</b><br>N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                       |                                                               |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | 28.454                                                                                | 0.000                                                         |
| <b>C. Other Program Funding Summary (\$ in Millions)</b><br>N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                       |                                                               |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                       |                                                               |
| <b>D. Acquisition Strategy</b><br><p>The program was terminated with the submission of the FY13 PB for all funding from FY13 and future. The department determined the proper course of action was to complete the development of 6 sensors, and realigned funds in FY11 and FY12 to complete those efforts.</p> <p>Studies have been conducted to determine the optimum strategy for acquiring space-based environmental data sources resulting in a decision to pursue a rideshare opportunity on the COSMIC 2 program to host SSAEM sensors. Existing sensors with high Technology Readiness Levels (TRL) were leveraged and technology modernization of SSAEM sensors were performed by Air Force Research Laboratory (AFRL) and the Jet Propulsion Laboratory (JPL). The operational SSAEM sensors are being acquired through competitive contract awards.</p> <p>Current sensor development contract period of performance will continue through FY14 to deliver sensors currently under development.</p> |  |                                                                                       |                                                               |
| <b>E. Performance Metrics</b><br><p>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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                       |                                                               |

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force                                                 |                        |                                                                         |                 |         |            |                                                |            |              |            |                                      |            | DATE: April 2013 |                  |            |                          |
|-------------------------------------------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------|-----------------|---------|------------|------------------------------------------------|------------|--------------|------------|--------------------------------------|------------|------------------|------------------|------------|--------------------------|
| APPROPRIATION/BUDGET ACTIVITY                                                                               |                        |                                                                         |                 |         |            | R-1 ITEM NOMENCLATURE                          |            |              |            | PROJECT                              |            |                  |                  |            |                          |
| 3600: Research, Development, Test & Evaluation, Air Force<br>BA 5: System Development & Demonstration (SDD) |                        |                                                                         |                 |         |            | PE 0604425F: Space Situation Awareness Systems |            |              |            | 65A038: SSA Environmental Monitoring |            |                  |                  |            |                          |
| 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 |
| Tri-Global Satellite System Radio Occultation System Sensor (TRIG) Development                              | MIPR                   | Jet Propulsion Laboratory:Pasadena, CA                                  | 16.972          | 2.101   | Apr 2012   | 0.000                                          |            | 0.000        |            | -                                    |            | 0.000            | 0.000            | 19.073     | 19.073                   |
| Additional TRIG Development                                                                                 | Reqn                   | Broad Reach Engineering and ITT:Various,                                | 0.000           | 6.336   | Sep 2012   | 0.000                                          |            | 0.000        |            | -                                    |            | 0.000            | 0.000            | 6.336      | 6.336                    |
| Radio Frequency (RF) Beacon Sensor Development                                                              | Various                | SRI and Army Space and Missile Defense Command:Various,                 | 11.178          | 0.000   |            | 0.000                                          |            | 0.000        |            | -                                    |            | 0.000            | 0.000            | 11.178     | 11.178                   |
| RF Beacon Ground Development                                                                                | MIPR                   | Army Space and Missile Defense Command:Huntsville, AB                   | 2.589           | 0.000   |            | 0.000                                          |            | 0.000        |            | -                                    |            | 0.000            | 0.000            | 2.589      | 2.589                    |
| RF Beacon Ground Integration                                                                                | PO                     | Space & Missile Systems Center:Peterson, CO                             | 0.861           | 3.000   | Jan 2012   | 0.000                                          |            | 0.000        |            | -                                    |            | 0.000            | 0.000            | 3.861      | 3.861                    |
| Ion Velocity Meter (IVM) Sensor Development                                                                 | SS/ Various            | AFRL & University of TX at Dallas:Various,                              | 3.434           | 9.500   | Apr 2013   | 0.000                                          |            | 0.000        |            | -                                    |            | 0.000            | 0.000            | 12.934     | 12.934                   |
| Various Sensor Development                                                                                  | SS/ Various            | Various:Various,                                                        | 11.268          | 1.602   | Sep 2012   | 0.000                                          |            | 0.000        |            | -                                    |            | 0.000            | 0.000            | 12.870     | 12.870                   |
| Communication/Navigation Outage Forecasting System (C/NOFS)                                                 | SS/ Various            | Space Development and Test Directorate:Albuquerque, NM                  | 6.718           | 0.638   | Jan 2012   | 0.000                                          |            | 0.000        |            | -                                    |            | 0.000            | 0.000            | 7.356      | 7.356                    |
| Systems Integration                                                                                         | MIPR                   | University for the Characterization of Atmospheric Research:Boulder, CO | 0.650           | 0.000   |            | 0.000                                          |            | 0.000        |            | -                                    |            | 0.000            | 0.000            | 0.650      | 0.650                    |
| Cubesat and Ground System Development                                                                       | Various                | Various:Various,                                                        | 6.647           | 0.930   | Sep 2012   | 0.000                                          |            | 0.000        |            | -                                    |            | 0.000            | 0.000            | 7.577      | 7.577                    |
| Subtotal                                                                                                    |                        |                                                                         | 60.317          | 24.107  |            | 0.000                                          |            | 0.000        |            | 0.000                                |            | 0.000            | 0.000            | 84.424     | 84.424                   |
|                                                                                                             |                        |                                                                         |                 |         |            |                                                |            |              |            |                                      |            |                  |                  |            |                          |

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------------------------|------------------------|----------------|-------------------|---------------------------------------------------------------------------------------|-------------------|---------------------|-------------------|--------------------|-------------------|---------------------------------------------------------------|-------------------------|-------------------|---------------------------------|
| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</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 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                                        |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: <i>Space Situation Awareness Systems</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>65A038: <i>SSA Environmental Monitoring</i> |                         |                   |                                 |
| <b>Support (\$ in Millions)</b>                                                                                                                                           |                                   |                                                        |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                        |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                          |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                                 | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>              | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                           | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                   | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Program Support                                                                                                                                                           | Various                           | Air Force Research Laboratory:Albuquerque, NM          | 3.759                  | 1.999          | Oct 2011          | 0.000                                                                                 |                   | 0.000               |                   | -                  |                   | 0.000                                                         | 0.000                   | 5.758             | 5.758                           |
| <b>Subtotal</b>                                                                                                                                                           |                                   |                                                        | 3.759                  | 1.999          |                   | 0.000                                                                                 |                   | 0.000               |                   | 0.000              |                   | 0.000                                                         | 0.000                   | 5.758             | 5.758                           |
| <b>Test and Evaluation (\$ in Millions)</b>                                                                                                                               |                                   |                                                        |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                        |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                          |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                                 | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>              | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                           | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                   | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| <b>Subtotal</b>                                                                                                                                                           |                                   |                                                        | 0.000                  | 0.000          |                   | 0.000                                                                                 |                   | 0.000               |                   | 0.000              |                   | 0.000                                                         | 0.000                   | 0.000             | 0.000                           |
| <b>Management Services (\$ in Millions)</b>                                                                                                                               |                                   |                                                        |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                        |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                          |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                                 | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>              | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                           | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                   | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Program Office Management Support (PMA)                                                                                                                                   | Various                           | Space and Missile Systems Center/ AFRL:Los Angeles, CA | 7.572                  | 2.348          | Oct 2011          | 0.000                                                                                 |                   | 0.000               |                   | -                  |                   | 0.000                                                         | 0.000                   | 9.920             | 9.920                           |
| <b>Subtotal</b>                                                                                                                                                           |                                   |                                                        | 7.572                  | 2.348          |                   | 0.000                                                                                 |                   | 0.000               |                   | 0.000              |                   | 0.000                                                         | 0.000                   | 9.920             | 9.920                           |
| <b>Project Cost Totals</b>                                                                                                                                                |                                   |                                                        | 71.648                 | 28.454         |                   | 0.000                                                                                 |                   | 0.000               |                   | 0.000              |                   | 0.000                                                         | 0.000                   | 100.102           | 100.102                         |
| <b>Remarks</b>                                                                                                                                                            |                                   |                                                        |                        |                |                   |                                                                                       |                   |                     |                   |                    |                   |                                                               |                         |                   |                                 |

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

DATE: April 2013

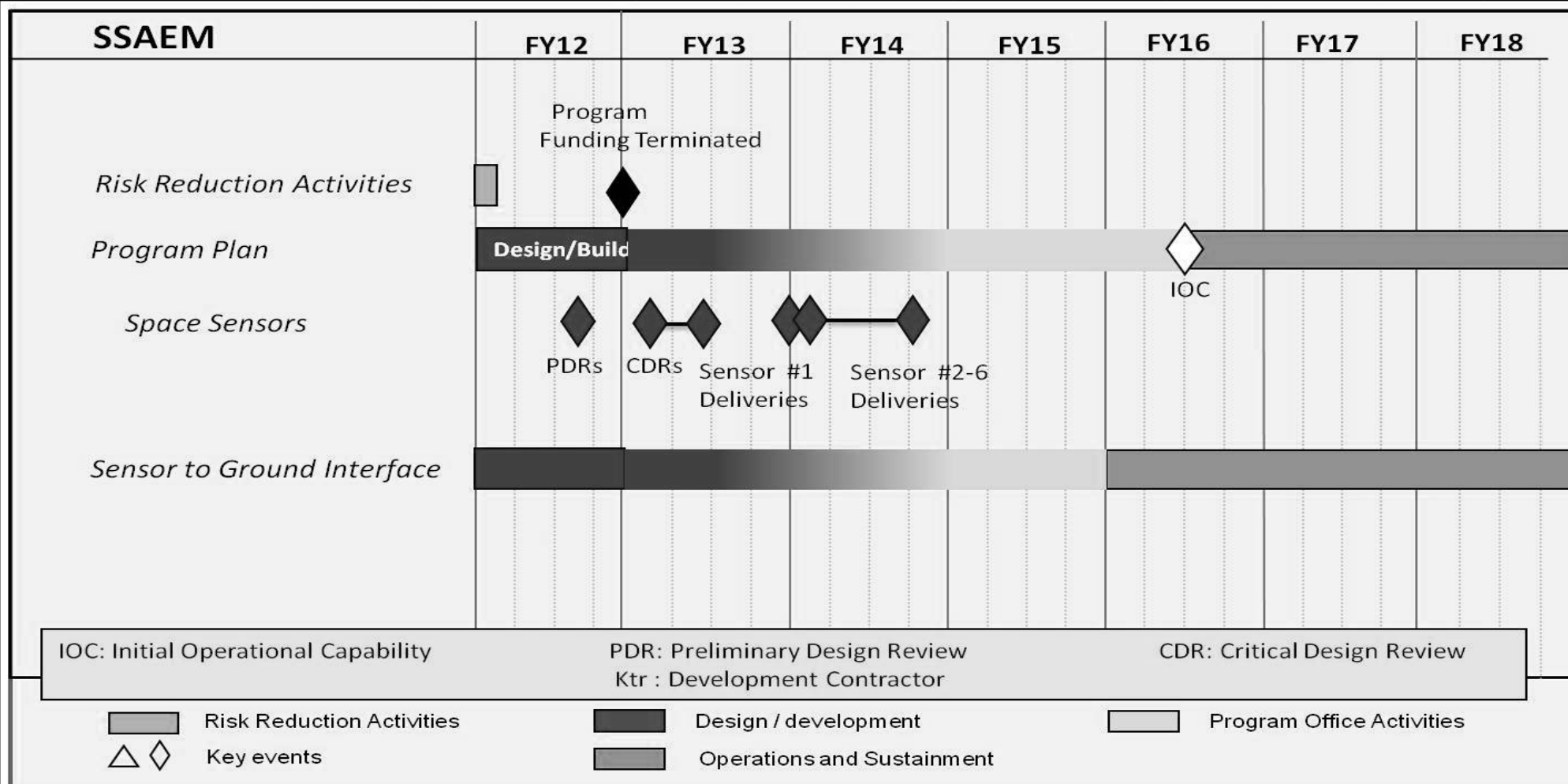
**APPROPRIATION/BUDGET ACTIVITY**

3600: Research, Development, Test & Evaluation, Air Force  
BA 5: System Development & Demonstration (SDD)

## R-1 ITEM NOMENCLATURE

PE 0604425F: *Space Situation Awareness Systems*

|  |                |
|--|----------------|
|  | <b>PROJECT</b> |
|--|----------------|

65A038: SSA *Environmental Monitoring*

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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 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604425F: <i>Space Situation Awareness Systems</i> | <b>PROJECT</b><br>65A038: <i>SSA Environmental Monitoring</i> |                         |

Schedule Details

| Events                            | Start   |      | End     |      |
|-----------------------------------|---------|------|---------|------|
|                                   | Quarter | Year | Quarter | Year |
| Sensor Preliminary Design Reviews | 3       | 2012 | 3       | 2012 |
| Sensor Critical Design Reviews    | 1       | 2013 | 2       | 2013 |
| Space Sensor Deliveries           | 4       | 2013 | 4       | 2014 |