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| <b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2013 Missile Defense Agency | <b>DATE:</b> February 2012 |
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| APPROPRIATION/BUDGET ACTIVITY                                                                                                                       |         |         |              | R-1 ITEM NOMENCLATURE                                               |               |         |         |         |         |                  |            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|--------------|---------------------------------------------------------------------|---------------|---------|---------|---------|---------|------------------|------------|
| 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i> |         |         |              | PE 0603895C: <i>Ballistic Missile Defense System Space Programs</i> |               |         |         |         |         |                  |            |
| COST (\$ in Millions)                                                                                                                               | FY 2011 | FY 2012 | FY 2013 Base | FY 2013 OCO                                                         | FY 2013 Total | FY 2014 | FY 2015 | FY 2016 | FY 2017 | Cost To Complete | Total Cost |
| Total Program Element                                                                                                                               | 10.569  | 7.940   | 6.912        | -                                                                   | 6.912         | 6.576   | 6.610   | 7.219   | 7.371   | Continuing       | Continuing |
| MD33: <i>MD Space Exp Center (MDSEC)</i>                                                                                                            | 10.162  | 7.940   | 6.561        | -                                                                   | 6.561         | 6.244   | 6.286   | 6.862   | 6.996   | Continuing       | Continuing |
| MD40: <i>Program-Wide Support</i>                                                                                                                   | 0.407   | -       | 0.351        | -                                                                   | 0.351         | 0.332   | 0.324   | 0.357   | 0.375   | Continuing       | Continuing |

**Note**

The Program Office for Space Tracking and Surveillance System (STSS) relocated to Colorado Springs in the MDA Missile Defense Integration and Operations Center (MDIOC) within the Missile Defense Space Experimentation Center (MDSEC) 25 May 2011. At that time, the MDSEC was renamed to the Missile Defense Space Development Center (MDSDC).

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

The MDSDC, formerly MDSEC, facilitates the integration and demonstration of missile defense space capabilities with other defense and national security systems. The MDSDC infrastructure provides MDA users capabilities for supporting flight tests, conducting concept development, demonstrations, experiments, and developing and evaluating algorithms within a multi-security level, collaborative environment. As part of a collaborative environment, the MDSDC conducts studies and experiments with Air Force Space Command seeking to optimize the Precision Tracking Space System (PTSS) support for Space Situational Awareness (SSA).

The MDSDC provides MDA elements with a central point of activity for BMDS space sensor layer operations and integration to support the ballistic missile defense mission. The infrastructure of the MDSDC supports the operation and control of MDA satellites such as STSS satellites and the Near Field Infrared Experiment (NFIRE) satellite. In addition, the MDSDC annual operating expenses provide infrastructure support for security, configuration management, engineering, test, experiment, data, and logistics and create a collaborative environment for the MDA community that includes STSS; NFIRE; BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA); Command and Control, Battle Management and Communications (C2BMC); Integrated Sensor Manager (ISM); MDA C2BMC X-Lab; MDA Enterprise Sensors Laboratory (ESL); and the PTSS.

Modeling and Simulation (M&S) activities at the MDSDC support all phases of STSS maturation, including: development and necessary revision of Mission Planning and Analysis Tools, Data Collection Events, System Functional and Performance Tests, flight test missions, ground tests, wargames, exercises, and performance assessments (PAs).

Goals for the MDSDC:

- Develop and refine ground operational concepts for MDA space systems, sensors, data, services, and networks
- Conduct satellite operations for MDA space sensor satellites (STSS, NFIRE)
- Operate and refine the MDSDC Interchange System (MIS) to provide robust access to MDA space data and MDA user net-centric sensor tasking request interface
- Develop a security environment to support data integration, test, demonstrations, and experiments across multiple security levels
- Provide a Test Integration Lab (TIL) to support testing, demonstrations, experiments, integration and algorithm development
- Demonstrate connectivity and integration of space sensor layer data for the BMDS community and external users
- Conduct experiments to test algorithm validity for Missile Defense space systems
- Conduct studies and experiments with Air Force Space Command to optimize PTSS support for SSA

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| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603895C: <i>Ballistic Missile Defense System Space Programs</i> |
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- Develop and demonstrate real Infrared/Radar data fusion (System Track)
  - Conduct experiments and demonstrate STSS discrimination capabilities (identifying object details to determine the target from debris or decoys)
  - Provide infrastructure to demonstrate integration of missile defense space capabilities with other defense and national security systems
- MD40 consists of Program-Wide Support (PWS) non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS).

| <b>B. Program Change Summary (\$ in Millions)</b> | <b><u>FY 2011</u></b> | <b><u>FY 2012</u></b> | <b><u>FY 2013 Base</u></b> | <b><u>FY 2013 OCO</u></b> | <b><u>FY 2013 Total</u></b> |
|---------------------------------------------------|-----------------------|-----------------------|----------------------------|---------------------------|-----------------------------|
| Previous President's Budget                       | 10.942                | 7.951                 | 6.781                      | -                         | 6.781                       |
| Current President's Budget                        | 10.569                | 7.940                 | 6.912                      | -                         | 6.912                       |
| Total Adjustments                                 | -0.373                | -0.011                | 0.131                      | -                         | 0.131                       |
| • Congressional General Reductions                | -0.075                | -0.011                |                            |                           |                             |
| • Congressional Directed Reductions               | -                     | -                     |                            |                           |                             |
| • Congressional Rescissions                       | -                     | -                     |                            |                           |                             |
| • Congressional Adds                              | -                     | -                     |                            |                           |                             |
| • Congressional Directed Transfers                | -                     | -                     |                            |                           |                             |
| • Reprogrammings                                  | -                     | -                     |                            |                           |                             |
| • SBIR/STTR Transfer                              | -0.298                | -                     |                            |                           |                             |
| • Other Adjustment                                | -                     | -                     | 0.131                      | -                         | 0.131                       |

**Change Summary Explanation**

FY 2011 adjustment reflects SBIR/STTR transfers and a Congressional decrease (DoD and Full year continuing appropriation Act, FY 2011, Public Law 112-10).

FY 2013 adjustment reflects funds realignment to DoD priorities.

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| Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency                                                 |         |         |                 |                                                                 |                  |         |         |                                   | DATE: February 2012 |                     |            |
|---------------------------------------------------------------------------------------------------------------------------|---------|---------|-----------------|-----------------------------------------------------------------|------------------|---------|---------|-----------------------------------|---------------------|---------------------|------------|
| APPROPRIATION/BUDGET ACTIVITY                                                                                             |         |         |                 | R-1 ITEM NOMENCLATURE                                           |                  |         |         | PROJECT                           |                     |                     |            |
| 0400: Research, Development, Test & Evaluation, Defense-Wide<br>BA 4: Advanced Component Development & Prototypes (ACD&P) |         |         |                 | PE 0603895C: Ballistic Missile Defense System<br>Space Programs |                  |         |         | MD33: MD Space Exp Center (MDSEC) |                     |                     |            |
| COST (\$ in Millions)                                                                                                     | FY 2011 | FY 2012 | FY 2013<br>Base | FY 2013<br>OCO                                                  | FY 2013<br>Total | FY 2014 | FY 2015 | FY 2016                           | FY 2017             | Cost To<br>Complete | Total Cost |
| MD33: MD Space Exp Center (MDSEC)                                                                                         | 10.162  | 7.940   | 6.561           | -                                                               | 6.561            | 6.244   | 6.286   | 6.862                             | 6.996               | Continuing          | Continuing |
| Quantity of RDT&E Articles                                                                                                | 0       | 0       | 0               |                                                                 | 0                | 0       | 0       | 0                                 | 0                   |                     |            |

## Note

The Program Office for Space Tracking and Surveillance System (STSS) relocated to Colorado Springs in the MDA Missile Defense Integration and Operations Center (MDIOC) within the Missile Defense Space Experimentation Center (MDSEC) 25 May 2011. At that time, the MDSEC was renamed to the Missile Defense Space Development Center (MDSDC).

## A. Mission Description and Budget Item Justification

The MDSDC, formerly MDSEC, allows MDA elements to conduct satellite on-orbit operations and to conduct flight test, demonstrations, experiments, data integration, algorithm development and test, and concept exploration. The annual operating expenses for the MDSDC provide overhead functions to include security, configuration management, engineering, test, demonstration, experiment, data analysis and integration, and logistics support for satellite operations and MDA users to include STSS; Near Field Infrared Experiment (NFIRE); BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA); Command and Control, Battle Management and Communications (C2BMC); Integrated Sensor Manager (ISM); MDA C2BMC X-Lab; MDA Enterprise Sensors Laboratory (ESL); and the Precision Tracking Space System (PTSS). The MDSDC Space Layer activities include integration and experimentation across a broad range of BMDS activities to include target signatures, sensor registration, health and status, sensor performance, sensor and weapons netting (with C2BMC and C2BMC X-Lab), modeling and simulation, OPIR Data Fusion and advanced features, discrimination, typing, clutter mitigation, and target kill and impact point assessments.

The MDSDC provides infrastructure to support satellite operations for STSS and NFIRE as the single location for MDA elements to conduct satellite on-orbit operations. The MDSDC also provides a multi-level security environment for sensor data management and integration across space and terrestrial sensor data activities. MDSDC experiments leverage DoD (Defense Support Program, Space Based Infrared System) and National Security Space capabilities. MDSDC activities support analysis, demonstration and integration of space sensor capabilities into developmental and operational MDA elements. MDSDC enables the development of advanced technology and algorithms including fusion of multiple sensor types (radar, overhead persistent infrared, electro-optical and other merging sensor technologies). MDSDC supports mission integration of space-based missile tracking (boost and midcourse phases), sensor and weapons cueing via C2BMC, features and discrimination, kill and impact point assessments into C2BMC, Aegis Launch on STSS, Aegis Engage on STSS, Terminal High Altitude Area Defense (THAAD), Ground-based Midcourse Defense (GMD), and other (non-MDA) mission areas to include space situational awareness, technical intelligence, and battle space characterization.

The MDSDC continues to develop and refine on-orbit operations for the STSS Demonstration Satellites and NFIRE. In addition to satellite operations, the MDSDC hosts a collaborative experimentation environment via the MDSDC Interchange System (MIS) and the MDSDC Test Integration Lab (TIL) for BMDS elements that rely on, experiment with, integrate with, or seek to improve the BMDS capability by utilizing space-based, systems-derived data. The MIS provides a common, secure data architecture for MDA,

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| Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                 | DATE: February 2012               |         |         |
| APPROPRIATION/BUDGET ACTIVITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | R-1 ITEM NOMENCLATURE                                           | PROJECT                           |         |         |
| 0400: Research, Development, Test & Evaluation, Defense-Wide<br>BA 4: Advanced Component Development & Prototypes (ACD&P)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | PE 0603895C: Ballistic Missile Defense System<br>Space Programs | MD33: MD Space Exp Center (MDSEC) |         |         |
| DoD and National Security Space sensor data and a satellite sensor tasking request tool interface with MDA users. The TIL provides a common location for MDA user collaboration with access to space sensor layer data via the MIS during tests and experiments. The MDSDC supports efforts to increase the effectiveness of the BMD System (including probability of engagement success, increase in defended area and raid size capacity, additional redundancy of architecture, unity of command) through the integration of MDA developed capabilities. The MDSDC Sensor Registration Health & Status Monitoring (SRHSM) Experiment addresses efforts such as Sensor Registration (reporting of sensor errors/biases) and Correlation (ensuring the information from multiple sensors seeing a threat relates to the same object). Other MDSDC experiments can explore areas from, System Track (creating a single engageable track of a threat from multiple reports provided by different land, sea, and space based multiple sensors), Discrimination (identifying object details to determine the target from debris or decoys), Battle Management (combining the best sensors and shooters to ensure the highest probability of a kill), Hit/Kill Assessment (determining if the target selected was destroyed after missile impact), to Communications (providing the worldwide connection of sensors and shooters to command authorities). These experiments are structured to be implemented across the BMDS elements to create and utilize system level data and decisions that allow Combatant Commanders the ability to automatically and manually optimize sensor coverage and interceptor inventory to defend against ballistic threats. |                                                                 |                                   |         |         |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                 | FY 2011                           | FY 2012 | FY 2013 |
| Title: Missile Defense Space Development Center (MDSDC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                 | 10.162                            | 7.940   | 6.561   |
| Articles:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                 | 0                                 | 0       | 0       |
| Description: See Description Below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                 |                                   |         |         |
| FY 2011 Accomplishments:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                 |                                   |         |         |
| - Provided infrastructure support for Space Tracking and Surveillance System (STSS) and Near Field Infrared Experiment (NFIRE) satellite on-orbit operations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                 |                                   |         |         |
| - Continued maturation of the STSS and NFIRE satellite on-orbit operations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                 |                                   |         |         |
| - Implemented measures to consolidate and increase efficiency in STSS and NFIRE satellite on-orbit operations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                 |                                   |         |         |
| - Participated in cooperative tests with other BMDS elements to include planning, execution and analyses; performed data collection on other targets of opportunity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                 |                                   |         |         |
| - Used test data, modeling and simulation, and integrated BMDS ground tests to demonstrate space-based infrared sensor contributions to BMDS performance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                 |                                   |         |         |
| - First on-orbit demonstration of receipt of an external cue and the use of the STSS crosslink to transmit that cue to the out-of-view satellite, resulting in stereo midcourse tracking and first observation of missile intercept from low earth orbit (Aegis Intercept Flight Test (FTM-15))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                 |                                   |         |         |
| - Provided core infrastructure support and conducted joint experiments with the Enterprise Sensors Laboratory (ESL); Command and Control, Battle Management and Communications (C2BMC) X-Lab; and the BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                 |                                   |         |         |
| - Supported laser communications experiments to assess viability of the technology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                 |                                   |         |         |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2013 Missile Defense Agency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                               | <b>DATE:</b> February 2012                                 |                |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603895C: <i>Ballistic Missile Defense System</i><br><i>Space Programs</i> | <b>PROJECT</b><br>MD33: <i>MD Space Exp Center (MDSEC)</i> |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                               | <b>FY 2011</b>                                             | <b>FY 2012</b> |
| <p>- Provided reports and data to include: STSS Sensor Performance Reports, Clutter Characterization for the Precision Tracking Space System (PTSS), Plume Phenomenology from NFIRE and STSS for MDA users, and Space Situational Awareness with NFIRE for Air Force Space Command</p> <p><b>FY 2012 Plans:</b></p> <ul style="list-style-type: none"> <li>- Implement measures to consolidate and increase efficiency in STSS and NFIRE satellite on-orbit operations</li> <li>- Continue to provide infrastructure support for STSS and NFIRE satellite on-orbit operations</li> <li>- Continue maturation of the STSS and NFIRE satellite on-orbit operations</li> <li>- Participate in cooperative tests with other BMDS elements to include planning, execution and analyses; perform data collection on other targets of opportunity</li> <li>- Use test data, modeling and simulation, and integrated BMDS ground tests to demonstrate space-based infrared sensor contributions to BMDS performance</li> <li>-- An example of this is the STSS Object Sighting Messages fused in the ESL to produce system tracks. System tracks are used to provide precision cues to BMDS radars and enables interceptor quality fire control.</li> <li>- Provide core infrastructure support and conduct joint experiments with the ESL, C2BMC X-Lab, and the BOA</li> <li>- Continue to support laser communications experiments to assess viability of the technology</li> <li>- Continue to support Air Force Space Command Space Situational Awareness, Technical Intelligence, Battlespace Awareness, and Missile Warning</li> </ul> <p><b>FY 2013 Plans:</b></p> <ul style="list-style-type: none"> <li>- Testing includes SM-3 intercept using Space Tracking and Surveillance (STSS) as a remote sensor</li> <li>-- STSS will provide to an Aegis 3.6.x or 4.0.1 ship the Quality of Service data track that will initiate a Remote Engagement Authorized (REA) launch of a Standard Missile-3 (SM-3) Block IB against an actual Medium-Range Ballistic Missile (MRBM) target</li> <li>- Continue maturation of the STSS and Near Field Infrared Experiment (NFIRE) satellite on-orbit operations (NFIRE as health and utility permit)</li> <li>- Participate in tests outlined in the Integrated Master Test Plan with other BMDS elements to include planning, execution and analyses; perform data collection on other targets of opportunity</li> <li>- Use test data, modeling and simulation, and integrated BMDS ground tests to demonstrate space-based infrared sensor contributions to BMDS performance</li> <li>-- An example of this is the STSS Object Sighting Messages fused in the Enterprise Sensors Laboratory (ESL) to produce system tracks. System tracks are used to provide precision cues to BMDS radars and enables interceptor quality fire control.</li> <li>- Provide core infrastructure support to enable joint experiments with the ESL; Command and Control, Battle Management and Communications (C2BMC) X-Lab; and the BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA)</li> <li>- Continue to support laser communications experiments (as the NFIRE satellite's health and utility permit) to assess viability of the technology</li> </ul> |                                                                                                               |                                                            |                |

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| Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency                                                                                  |           |         |                 |                                                                                          |                  |         |         |                                              | DATE: February 2012 |                     |            |
| APPROPRIATION/BUDGET ACTIVITY<br>0400: Research, Development, Test & Evaluation, Defense-Wide<br>BA 4: Advanced Component Development & Prototypes (ACD&P) |           |         |                 | R-1 ITEM NOMENCLATURE<br>PE 0603895C: Ballistic Missile Defense System<br>Space Programs |                  |         |         | PROJECT<br>MD33: MD Space Exp Center (MDSEC) |                     |                     |            |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                           |           |         |                 |                                                                                          |                  |         |         |                                              | FY 2011             | FY 2012             | FY 2013    |
| - Continue to support Air Force Space Command Space Situational Awareness, Technical Intelligence, Battlespace Awareness, and Missile Warning              |           |         |                 |                                                                                          |                  |         |         |                                              |                     |                     |            |
| Accomplishments/Planned Programs Subtotals                                                                                                                 |           |         |                 |                                                                                          |                  |         |         |                                              | 10.162              | 7.940               | 6.561      |
| C. Other Program Funding Summary (\$ in Millions)                                                                                                          |           |         |                 |                                                                                          |                  |         |         |                                              |                     |                     |            |
| Line Item                                                                                                                                                  | FY 2011   | FY 2012 | FY 2013<br>Base | FY 2013<br>OCO                                                                           | FY 2013<br>Total | FY 2014 | FY 2015 | FY 2016                                      | FY 2017             | Cost To<br>Complete | Total Cost |
| • 0603175C: Ballistic Missile Defense Technology                                                                                                           | 92.617    | 74.920  | 79.975          |                                                                                          | 79.975           | 81.388  | 115.427 | 133.742                                      | 136.654             | Continuing          | Continuing |
| • 0603884C: Ballistic Missile Defense Sensors                                                                                                              | 389.259   | 222.075 | 347.012         |                                                                                          | 347.012          | 327.342 | 362.520 | 341.780                                      | 326.095             | Continuing          | Continuing |
| • 0603888C: Ballistic Missile Defense Test & Targets                                                                                                       | 999.068   | 85.569  | 0.000           |                                                                                          | 0.000            | 0.000   | 0.000   | 0.000                                        | 0.000               | 0.000               | 1,084.637  |
| • 0603892C: AEGIS BMD                                                                                                                                      | 1,530.767 | 988.928 | 992.407         |                                                                                          | 992.407          | 960.870 | 950.097 | 1,030.201                                    | 958.680             | Continuing          | Continuing |
| • 0603893C: Space Tracking & Surveillance System                                                                                                           | 105.580   | 96.232  | 51.313          |                                                                                          | 51.313           | 45.355  | 32.423  | 34.195                                       | 35.087              | Continuing          | Continuing |
| • 0603896C: Ballistic Missile Defense Command and Control, Battle Management & Communication                                                               | 454.440   | 363.640 | 366.552         |                                                                                          | 366.552          | 376.116 | 383.055 | 358.431                                      | 364.725             | Continuing          | Continuing |
| • 0603902C: Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))                                                                        | 0.000     | 13.443  | 224.077         |                                                                                          | 224.077          | 295.248 | 455.373 | 508.356                                      | 430.239             | Continuing          | Continuing |
| • 0603904C: Missile Defense Integration & Operations Center (MDIOC)                                                                                        | 83.112    | 69.249  | 63.043          |                                                                                          | 63.043           | 54.299  | 55.409  | 54.693                                       | 55.844              | Continuing          | Continuing |
| • 0603914C: Ballistic Missile Defense Test                                                                                                                 | 0.000     | 487.699 | 454.400         |                                                                                          | 454.400          | 420.357 | 446.542 | 373.395                                      | 421.632             | Continuing          | Continuing |
| • 0603915C: Ballistic Missile Defense Targets                                                                                                              | 0.000     | 454.357 | 435.747         |                                                                                          | 435.747          | 475.175 | 505.591 | 406.931                                      | 485.950             | 0.000               | 2,763.751  |
| • 0604883C: Precision Tracking Space System                                                                                                                | 36.693    | 80.723  | 297.375         |                                                                                          | 297.375          | 267.505 | 285.529 | 326.073                                      | 354.190             | Continuing          | Continuing |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2013 Missile Defense Agency                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                               | <b>DATE:</b> February 2012                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>                                                                                                                                                                                                                                                                                                                                              | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603895C: <i>Ballistic Missile Defense System</i><br><i>Space Programs</i> | <b>PROJECT</b><br>MD33: <i>MD Space Exp Center (MDSEC)</i> |
| <b><u>D. Acquisition Strategy</u></b><br>Functions and operations of the Missile Defense Space Development Center (MDSDC) are currently financed through a 10-year MDSDC Joint National Integration Center (JNIC) Research and Development Contract (JRDC) Services Contract. Beginning FY 2005, the annual operating expenses have been consolidated into one centralized delivery order on the contract which includes core capabilities (labor and hardware) that are being performed in the MDSDC and supporting MDSDC participants. |                                                                                                               |                                                            |
| <b><u>E. Performance Metrics</u></b><br>N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                               |                                                            |

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**Exhibit R-3, RDT&E Project Cost Analysis:** PB 2013 Missile Defense Agency **DATE:** February 2012

|                                                                                                                                                                   |                                                                                                 |                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>0400: Research, Development, Test & Evaluation, Defense-Wide<br>BA 4: Advanced Component Development & Prototypes (ACD&P) | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603895C: Ballistic Missile Defense System<br>Space Programs | <b>PROJECT</b><br>MD33: MD Space Exp Center (MDSEC) |
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| Product Development (\$ in Millions)                                                                   |                              |                                   |                              | FY 2012 |               | FY 2013<br>Base |               | FY 2013<br>OCO |               | FY 2013<br>Total |                     |            |                                |
|--------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------------|------------------------------|---------|---------------|-----------------|---------------|----------------|---------------|------------------|---------------------|------------|--------------------------------|
| Cost Category Item                                                                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location | Total Prior<br>Years<br>Cost | Cost    | Award<br>Date | Cost            | Award<br>Date | Cost           | Award<br>Date | Cost             | Cost To<br>Complete | Total Cost | Target<br>Value of<br>Contract |
| Missile Defense Space Development Center (MDSDC) MDSDC Support (JRDC Services Contract)                | C/CPAF                       | MDIOC:CO                          | 20.951                       | 4.439   | Dec 2011      | 5.405           | Dec 2012      | -              |               | 5.405            | Continuing          | Continuing | Continuing                     |
| Missile Defense Space Development Center (MDSDC) MDSDC/Enterprise Sensors Laboratory (ESL) Experiments | MIPR                         | Various:Various                   | 4.975                        | 1.032   | Dec 2011      | -               |               | -              |               | -                | 0.000               | 6.007      | 6.007                          |
| <b>Subtotal</b>                                                                                        |                              |                                   | 25.926                       | 5.471   |               | 5.405           |               | -              |               | 5.405            |                     |            |                                |

**Remarks**

As on-orbit satellite operations for the Space Tracking and Surveillance System (STSS) and the Near Field Infrared Experiment (NFIRE) mature, the MDSDC will continue to seek opportunities to achieve operational efficiencies.

| Support (\$ in Millions)                                                         |                              |                                   |                              | FY 2012 |               | FY 2013<br>Base |               | FY 2013<br>OCO |               | FY 2013<br>Total |                     |            |                                |
|----------------------------------------------------------------------------------|------------------------------|-----------------------------------|------------------------------|---------|---------------|-----------------|---------------|----------------|---------------|------------------|---------------------|------------|--------------------------------|
| Cost Category Item                                                               | Contract<br>Method<br>& Type | Performing<br>Activity & Location | Total Prior<br>Years<br>Cost | Cost    | Award<br>Date | Cost            | Award<br>Date | Cost           | Award<br>Date | Cost             | Cost To<br>Complete | Total Cost | Target<br>Value of<br>Contract |
| Missile Defense Space Development Center (MDSDC) Contract Support Services (CSS) | C/BPA                        | MDIOC, MDA:CO/AL                  | 1.791                        | 0.762   | Dec 2011      | -               |               | -              |               | -                | 0.000               | 2.553      | 2.553                          |
| Missile Defense Space Development Center (MDSDC) MDA Civilian                    | Allot                        | MDA:AL                            | 0.732                        | 0.608   | Oct 2011      | -               |               | -              |               | -                | 0.000               | 1.340      | 1.340                          |
| <b>Subtotal</b>                                                                  |                              |                                   | 2.523                        | 1.370   |               | -               |               | -              |               | -                | 0.000               | 3.893      | 3.893                          |

**Remarks**

Beginning FY 2013, funding for the MDSDC MDA Civilians is incorporated with MDA Civilian pay under the Space Tracking and Surveillance System (STSS) Program Element 0603893C, Project MD12 STSS.



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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2013 Missile Defense Agency                                                                               |  |  |  |                                                                                                 |  |  |  |                                                     |  |  | <b>DATE:</b> February 2012 |  |  |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>0400: Research, Development, Test & Evaluation, Defense-Wide<br>BA 4: Advanced Component Development & Prototypes (ACD&P) |  |  |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603895C: Ballistic Missile Defense System<br>Space Programs |  |  |  | <b>PROJECT</b><br>MD33: MD Space Exp Center (MDSEC) |  |  |                            |  |  |

  

| Test and Evaluation (\$ in Millions) |                              |                                   |                              | FY 2012 |               | FY 2013<br>Base |               | FY 2013<br>OCO |               | FY 2013<br>Total |                     |            |                                |
|--------------------------------------|------------------------------|-----------------------------------|------------------------------|---------|---------------|-----------------|---------------|----------------|---------------|------------------|---------------------|------------|--------------------------------|
| Cost Category Item                   | Contract<br>Method<br>& Type | Performing<br>Activity & Location | Total Prior<br>Years<br>Cost | Cost    | Award<br>Date | Cost            | Award<br>Date | Cost           | Award<br>Date | Cost             | Cost To<br>Complete | Total Cost | Target<br>Value of<br>Contract |
| <b>Subtotal</b>                      |                              |                                   | -                            | -       |               | -               |               | -              |               | -                | 0.000               | 0.000      | 0.000                          |

**Remarks**  
N/A

  

| Management Services (\$ in Millions)                                             |                              |                                   |                              | FY 2012 |               | FY 2013<br>Base |               | FY 2013<br>OCO |               | FY 2013<br>Total |                     |            |                                |
|----------------------------------------------------------------------------------|------------------------------|-----------------------------------|------------------------------|---------|---------------|-----------------|---------------|----------------|---------------|------------------|---------------------|------------|--------------------------------|
| Cost Category Item                                                               | Contract<br>Method<br>& Type | Performing<br>Activity & Location | Total Prior<br>Years<br>Cost | Cost    | Award<br>Date | Cost            | Award<br>Date | Cost           | Award<br>Date | Cost             | Cost To<br>Complete | Total Cost | Target<br>Value of<br>Contract |
| Missile Defense Space Development Center (MDSDC) Space Dynamics Laboratory (SDL) | FFRDC                        | SDL:UT                            | 2.218                        | 1.099   | Nov 2011      | 1.156           | Nov 2012      | -              |               | 1.156            | Continuing          | Continuing | Continuing                     |
| <b>Subtotal</b>                                                                  |                              |                                   | 2.218                        | 1.099   |               | 1.156           |               | -              |               | 1.156            |                     |            |                                |

**Remarks**  
SDL is funded via University Affiliated Research Center (UARC) contract. SDL provides operations and engineering support for mission planning, tasking, and data collection activities at the MDSDC.

  

|                            | Total Prior<br>Years<br>Cost | FY 2012 |  | FY 2013<br>Base |  | FY 2013<br>OCO |  | FY 2013<br>Total | Cost To<br>Complete | Total Cost | Target<br>Value of<br>Contract |
|----------------------------|------------------------------|---------|--|-----------------|--|----------------|--|------------------|---------------------|------------|--------------------------------|
| <b>Project Cost Totals</b> | 30.667                       | 7.940   |  | 6.561           |  | -              |  | 6.561            |                     |            |                                |

**Remarks**  
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| <b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2013 Missile Defense Agency                                                                                                              |                                                                                                               | <b>DATE:</b> February 2012                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603895C: <i>Ballistic Missile Defense System</i><br><i>Space Programs</i> | <b>PROJECT</b><br>MD33: <i>MD Space Exp Center (MDSEC)</i> |
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| <b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2013 Missile Defense Agency                                                                                                              |                                                                                                               | <b>DATE:</b> February 2012                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603895C: <i>Ballistic Missile Defense System</i><br><i>Space Programs</i> | <b>PROJECT</b><br>MD33: <i>MD Space Exp Center (MDSEC)</i> |
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| <b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2013 Missile Defense Agency                                                                                                              |                                                                                                               | <b>DATE:</b> February 2012                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603895C: <i>Ballistic Missile Defense System</i><br><i>Space Programs</i> | <b>PROJECT</b><br>MD33: <i>MD Space Exp Center (MDSEC)</i> |
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| Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency                                                       |                                                                 | DATE: February 2012               |
| APPROPRIATION/BUDGET ACTIVITY                                                                                             | R-1 ITEM NOMENCLATURE                                           | PROJECT                           |
| 0400: Research, Development, Test & Evaluation, Defense-Wide<br>BA 4: Advanced Component Development & Prototypes (ACD&P) | PE 0603895C: Ballistic Missile Defense System<br>Space Programs | MD33: MD Space Exp Center (MDSEC) |
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| <b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2013 Missile Defense Agency                                                                                                              |                                                                                                               | <b>DATE:</b> February 2012                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603895C: <i>Ballistic Missile Defense System</i><br><i>Space Programs</i> | <b>PROJECT</b><br>MD33: <i>MD Space Exp Center (MDSEC)</i> |
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| <b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2013 Missile Defense Agency                                                                                                              |                                                                                                               | <b>DATE:</b> February 2012                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603895C: <i>Ballistic Missile Defense System</i><br><i>Space Programs</i> | <b>PROJECT</b><br>MD33: <i>MD Space Exp Center (MDSEC)</i> |
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| <b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2013 Missile Defense Agency                                                                                                              |                                                                                                               | <b>DATE:</b> February 2012                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603895C: <i>Ballistic Missile Defense System</i><br><i>Space Programs</i> | <b>PROJECT</b><br>MD33: <i>MD Space Exp Center (MDSEC)</i> |
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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2013 Missile Defense Agency                                                                                                             |                                                                                                               |                                                            | <b>DATE:</b> February 2012 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603895C: <i>Ballistic Missile Defense System</i><br><i>Space Programs</i> | <b>PROJECT</b><br>MD33: <i>MD Space Exp Center (MDSEC)</i> |                            |

**Schedule Details**

| Events                                                                                                              | Start   |      | End     |      |
|---------------------------------------------------------------------------------------------------------------------|---------|------|---------|------|
|                                                                                                                     | Quarter | Year | Quarter | Year |
| Space Tracking and Surveillance System (STSS) Demonstration Satellites Operations - 1Q2011-4Q2011                   | 1       | 2011 | 4       | 2011 |
| STSS Demonstration Satellites Operations - 1Q2012-4Q2012                                                            | 1       | 2012 | 4       | 2012 |
| STSS Demonstration Satellites Operations - 1Q2013-4Q2013                                                            | 1       | 2013 | 4       | 2013 |
| STSS Demonstration Satellites Operations - 1Q2014-4Q2014                                                            | 1       | 2014 | 4       | 2014 |
| STSS Demonstration Satellites Operations - 1Q2015-4Q2015                                                            | 1       | 2015 | 4       | 2015 |
| STSS Demonstration Satellites Operations - 1Q2016-4Q2016                                                            | 1       | 2016 | 4       | 2016 |
| STSS Demonstration Satellites Operations - 1Q2017-4Q2017                                                            | 1       | 2017 | 4       | 2017 |
| Near Field Infrared Experiment (NFIRE) Satellite Operations - 1Q2011-4Q2011                                         | 1       | 2011 | 4       | 2011 |
| NFIRE Satellite Operations-1Q2012-4Q2012                                                                            | 1       | 2012 | 4       | 2012 |
| Mission Planning, Tasking and Analysis - 1Q2011-4Q2011                                                              | 1       | 2011 | 4       | 2011 |
| Mission Planning, Tasking and Analysis - 1Q2012-4Q2012                                                              | 1       | 2012 | 4       | 2012 |
| Mission Planning, Tasking and Analysis - 1Q2013-4Q2013                                                              | 1       | 2013 | 4       | 2013 |
| Mission Planning, Tasking and Analysis - 1Q2014-4Q2014                                                              | 1       | 2014 | 4       | 2014 |
| Mission Planning, Tasking and Analysis - 1Q2015-4Q2015                                                              | 1       | 2015 | 4       | 2015 |
| Mission Planning, Tasking and Analysis - 1Q2016-4Q2016                                                              | 1       | 2016 | 4       | 2016 |
| Mission Planning, Tasking and Analysis - 1Q2017-4Q2017                                                              | 1       | 2017 | 4       | 2017 |
| Enterprise Sensors Lab Engineering Baseline Release (5.0/5.1)                                                       | 2       | 2011 | 2       | 2011 |
| Enterprise Sensors Lab Engineering Baseline Release (6.1/6.2)                                                       | 4       | 2011 | 4       | 2011 |
| STSS/ESL-BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA) Midcourse Tracking Experiments - 1Q2011-4Q2011 | 1       | 2011 | 4       | 2011 |
| ESL Engineering Baseline Release (7.1/7.2)                                                                          | 4       | 2012 | 4       | 2012 |
| STSS/ESL-BOA Midcourse Tracking Experiments-1Q2012-4Q2012                                                           | 1       | 2012 | 4       | 2012 |

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| Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency                                                                                                      |         |                                                                 |         | DATE: February 2012               |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------|---------|-----------------------------------|--|
| APPROPRIATION/BUDGET ACTIVITY                                                                                                                                             |         | R-1 ITEM NOMENCLATURE                                           |         | PROJECT                           |  |
| 0400: Research, Development, Test & Evaluation, Defense-Wide<br>BA 4: Advanced Component Development & Prototypes (ACD&P)                                                 |         | PE 0603895C: Ballistic Missile Defense System<br>Space Programs |         | MD33: MD Space Exp Center (MDSEC) |  |
|                                                                                                                                                                           |         | Start                                                           |         | End                               |  |
| Events                                                                                                                                                                    | Quarter | Year                                                            | Quarter | Year                              |  |
| STSS/ESL-BOA)/X-Lab System Track Experiments - 1Q2011-2Q2011                                                                                                              | 1       | 2011                                                            | 2       | 2011                              |  |
| STSS/ESL-BOA OPIR Cueing Experiments - 1Q2011-4Q2011                                                                                                                      | 1       | 2011                                                            | 4       | 2011                              |  |
| STSS/ESL-BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA) OPIR Cueing Experiments-1Q2012-4Q2012                                                                | 1       | 2012                                                            | 4       | 2012                              |  |
| STSS Sensor Registration Health & Status Experiments - 1Q2011-4Q2011                                                                                                      | 1       | 2011                                                            | 4       | 2011                              |  |
| STSS Sensor Registration Health & Status Experiments-1Q2012-4Q2012                                                                                                        | 1       | 2012                                                            | 4       | 2012                              |  |
| Missile Defense Space Development Center (MDSDC) Interchange System (MIS) Operations - 1Q2011-4Q2011                                                                      | 1       | 2011                                                            | 4       | 2011                              |  |
| MDSDC Interchange System (MIS) Operations - 1Q2012-4Q2012                                                                                                                 | 1       | 2012                                                            | 4       | 2012                              |  |
| MIS Operations - 1Q2013-4Q2013                                                                                                                                            | 1       | 2013                                                            | 4       | 2013                              |  |
| MIS Operations - 1Q2014-4Q2014                                                                                                                                            | 1       | 2014                                                            | 4       | 2014                              |  |
| MIS Operations - 1Q2015-4Q2015                                                                                                                                            | 1       | 2015                                                            | 4       | 2015                              |  |
| MIS Operations - 1Q2016-4Q2016                                                                                                                                            | 1       | 2016                                                            | 4       | 2016                              |  |
| MIS Operations - 1Q2017-4Q2017                                                                                                                                            | 1       | 2017                                                            | 4       | 2017                              |  |
| MDSDC Test Integration Lab (TIL) Operations - 1Q2011-4Q2011                                                                                                               | 1       | 2011                                                            | 4       | 2011                              |  |
| MDSDC TIL Operations - 1Q2012-4Q2012                                                                                                                                      | 1       | 2012                                                            | 4       | 2012                              |  |
| MDSDC TIL Operations - 1Q2013-4Q2013                                                                                                                                      | 1       | 2013                                                            | 4       | 2013                              |  |
| MDSDC TIL Operations - 1Q2014-4Q2014                                                                                                                                      | 1       | 2014                                                            | 4       | 2014                              |  |
| MDSDC TIL Operations - 1Q2015-4Q2015                                                                                                                                      | 1       | 2015                                                            | 4       | 2015                              |  |
| MDSDC TIL Operations - 1Q2016-4Q2016                                                                                                                                      | 1       | 2016                                                            | 4       | 2016                              |  |
| MDSDC TIL Operations - 1Q2017-4Q2017                                                                                                                                      | 1       | 2017                                                            | 4       | 2017                              |  |
| Aegis Simulated Intercept Flight Test (JFTM-04 E1): Aegis 4.0.1 simulated intercept of a surrogate separating Medium-Range Ballistic Missile (MRBM)                       | 1       | 2011                                                            | 1       | 2011                              |  |
| Aegis Simulated Intercept Flight Test (FTM-16 E1): Aegis 4.0.1 simulated SM-3 Block IB intercept of a Short-Range Ballistic Missile (SRBM) target with Associated Objects | 2       | 2011                                                            | 2       | 2011                              |  |
| Sensors Flight Test (FTX-16 E1): Aegis 3.6.1 simulated Launch on Remote Engagement of a ballistic missile using STSS data in the Fire Control Solution                    | 2       | 2011                                                            | 2       | 2011                              |  |

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------|---------------------|----------------------------------------------|------|
| Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency                                                                                                                                    |  |                                                                                          | DATE: February 2012 |                                              |      |
| APPROPRIATION/BUDGET ACTIVITY<br>0400: Research, Development, Test & Evaluation, Defense-Wide<br>BA 4: Advanced Component Development & Prototypes (ACD&P)                                              |  | R-1 ITEM NOMENCLATURE<br>PE 0603895C: Ballistic Missile Defense System<br>Space Programs |                     | PROJECT<br>MD33: MD Space Exp Center (MDSEC) |      |
|                                                                                                                                                                                                         |  | Start                                                                                    |                     | End                                          |      |
| Events                                                                                                                                                                                                  |  | Quarter                                                                                  | Year                | Quarter                                      | Year |
| Aegis Intercept Flight Test (FTM-15): Aegis 3.6.1 Standard Missile-3 (SM-3) Block IA engagement of an Intermediate-Range Ballistic Missile (IRBM) with Remote Engagements Authorized                    |  | 3                                                                                        | 2011                | 3                                            | 2011 |
| Air-Launched Target Return to Flight (FTX-17): Return to flight of the Short-Range Air Launch Target                                                                                                    |  | 4                                                                                        | 2011                | 4                                            | 2011 |
| Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-12): THAAD multiple engagement scenario with two near-simultaneous engagements                                                   |  | 1                                                                                        | 2012                | 1                                            | 2012 |
| Ground-based Midcourse Defense Controlled Test Vehicle (GM CVT-01): Ground-based Midcourse Defense Intercept Controlled Vehicle Flight Test                                                             |  | 3                                                                                        | 2012                | 3                                            | 2012 |
| Aegis Intercept Flight Test (FTM-16 E2a)                                                                                                                                                                |  | 3                                                                                        | 2012                | 3                                            | 2012 |
| Aegis Intercept Flight Test (FTM-18): Aegis 4.0.1 SM-3 Block 1B engagement of a Short-Range Ballistic Missile (SRBM) target, Space Tracking and Surveillance System (STSS) Engage on Remote Shadow Mode |  | 3                                                                                        | 2012                | 3                                            | 2012 |
| Aegis Intercept Flight Test (FTM-19): Aegis 4.0.1 intercept of a SRBM target with a SM-3 Block IB missile, STSS Launch on Remote Shadow Mode                                                            |  | 4                                                                                        | 2012                | 4                                            | 2012 |
| Ground-based Midcourse Defense Intercept Flight Test (FTG-06b): Ground-based Midcourse Defense intercept of IRBM target based on results from FTG-06a                                                   |  | 4                                                                                        | 2012                | 4                                            | 2012 |
| Aegis/THAAD/Patriot Multiple Engagement Flight Test (FTI-01): BMDS Developmental Flight Test against SRBM and MRBM targets                                                                              |  | 4                                                                                        | 2012                | 4                                            | 2012 |
| Aegis Simulated Intercept Flight Test (FTM-21 E1): Aegis 4.0.1 (two ships) Standard Missile-3 (SM-3) Block IB simulated engagement using digital engagement coordination of three SRBMs                 |  | 3                                                                                        | 2013                | 3                                            | 2013 |
| Aegis Simulated Intercept Flight Test (FTM-21 E2): Aegis 4.0.1 (two ships) SM-3 Block IB simulated engagement using digital engagement coordination of three SRBMs                                      |  | 3                                                                                        | 2013                | 3                                            | 2013 |
| Aegis Intercept Flight Test (FTM-21 E3): Aegis 4.0.1 SM-3 Block IB salvo engagement of SRBM                                                                                                             |  | 3                                                                                        | 2013                | 3                                            | 2013 |
| Aegis Intercept Flight Test (FTM-22 E2): Aegis 4.0.1 SM-3 Block IB intercept of a SRBM                                                                                                                  |  | 3                                                                                        | 2013                | 3                                            | 2013 |
| Aegis/THAAD/Patriot Multiple Engagement Flight Test (FTO-01): BMDS Operational Flight Test against Short-Range and Medium-Range Ballistic Missile targets                                               |  | 3                                                                                        | 2013                | 3                                            | 2013 |

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| Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency                                                                                                                                 |         |                                                                 |         | DATE: February 2012               |  |
| APPROPRIATION/BUDGET ACTIVITY                                                                                                                                                                        |         | R-1 ITEM NOMENCLATURE                                           |         | PROJECT                           |  |
| 0400: Research, Development, Test & Evaluation, Defense-Wide<br>BA 4: Advanced Component Development & Prototypes (ACD&P)                                                                            |         | PE 0603895C: Ballistic Missile Defense System<br>Space Programs |         | MD33: MD Space Exp Center (MDSEC) |  |
|                                                                                                                                                                                                      |         | Start                                                           |         | End                               |  |
| Events                                                                                                                                                                                               | Quarter | Year                                                            | Quarter | Year                              |  |
| Aegis Simulated Intercept Flight Test (FTX-14): Aegis 4.0.1SM-3 Block IB simulated engagement of a Wildcat Target                                                                                    | 1       | 2014                                                            | 1       | 2014                              |  |
| Arrow System Test (AST-15): First Arrow 3 engagement test                                                                                                                                            | 1       | 2014                                                            | 1       | 2014                              |  |
| Aegis Flight Test (SCDPTV-01): SM-3 Block IIA 1st, 2nd, and 3rd stage performance test                                                                                                               | 1       | 2014                                                            | 1       | 2014                              |  |
| Aegis Ashore Flight Test (AA CVT-01)                                                                                                                                                                 | 2       | 2014                                                            | 2       | 2014                              |  |
| Aegis Intercept Flight Test (FTM-20 E1): Aegis 5.0 intercept of Medium-Range Ballistic Missile (MRBM) target with SM-3 Block IB missile                                                              | 3       | 2014                                                            | 3       | 2014                              |  |
| Ground-based Midcourse Defense Intercept Flight Test (FTG-08): Intercept of Intermediate-Range Ballistic Missile target with Associated Objects using 2-stage booster with first generation avionics | 3       | 2014                                                            | 3       | 2014                              |  |
| Aegis Ashore Intercept Flight Test (AA FTM-01)                                                                                                                                                       | 4       | 2014                                                            | 4       | 2014                              |  |
| Aegis Ashore Intercept Flight Test (AA FTM-02)                                                                                                                                                       | 4       | 2014                                                            | 4       | 2014                              |  |
| Aegis Flight Test, Standard Missile (FTM-24)                                                                                                                                                         | 4       | 2014                                                            | 4       | 2014                              |  |
| Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-11a): THAAD exo-atmospheric engagement of a complex separating SRBM                                                           | 4       | 2014                                                            | 4       | 2014                              |  |
| Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2011                                                                             | 1       | 2011                                                            | 1       | 2011                              |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2011                                                                                                                      | 2       | 2011                                                            | 2       | 2011                              |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2011                                                                                                                      | 3       | 2011                                                            | 3       | 2011                              |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2011                                                                                                                      | 4       | 2011                                                            | 4       | 2011                              |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2012                                                                                                                      | 1       | 2012                                                            | 1       | 2012                              |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2012                                                                                                                      | 2       | 2012                                                            | 2       | 2012                              |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2012                                                                                                                      | 3       | 2012                                                            | 3       | 2012                              |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2012                                                                                                                      | 4       | 2012                                                            | 4       | 2012                              |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2013                                                                                                                      | 1       | 2013                                                            | 1       | 2013                              |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2013                                                                                                                      | 2       | 2013                                                            | 2       | 2013                              |  |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2013 Missile Defense Agency                                                                                                             |                |                                                                                                               |                | <b>DATE:</b> February 2012                                 |  |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i> |                | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603895C: <i>Ballistic Missile Defense System</i><br><i>Space Programs</i> |                | <b>PROJECT</b><br>MD33: <i>MD Space Exp Center (MDSEC)</i> |  |
|                                                                                                                                                                                             |                | <b>Start</b>                                                                                                  |                | <b>End</b>                                                 |  |
| <b>Events</b>                                                                                                                                                                               | <b>Quarter</b> | <b>Year</b>                                                                                                   | <b>Quarter</b> | <b>Year</b>                                                |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2013                                                                                                             | 3              | 2013                                                                                                          | 3              | 2013                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2013                                                                                                             | 4              | 2013                                                                                                          | 4              | 2013                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2014                                                                                                             | 1              | 2014                                                                                                          | 1              | 2014                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2014                                                                                                             | 2              | 2014                                                                                                          | 2              | 2014                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2014                                                                                                             | 3              | 2014                                                                                                          | 3              | 2014                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2014                                                                                                             | 4              | 2014                                                                                                          | 4              | 2014                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2015                                                                                                             | 1              | 2015                                                                                                          | 1              | 2015                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2015                                                                                                             | 2              | 2015                                                                                                          | 2              | 2015                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2015                                                                                                             | 3              | 2015                                                                                                          | 3              | 2015                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2015                                                                                                             | 4              | 2015                                                                                                          | 4              | 2015                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2016                                                                                                             | 1              | 2016                                                                                                          | 1              | 2016                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2016                                                                                                             | 2              | 2016                                                                                                          | 2              | 2016                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2016                                                                                                             | 3              | 2016                                                                                                          | 3              | 2016                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2016                                                                                                             | 4              | 2016                                                                                                          | 4              | 2016                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2017                                                                                                             | 1              | 2017                                                                                                          | 1              | 2017                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2017                                                                                                             | 2              | 2017                                                                                                          | 2              | 2017                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2017                                                                                                             | 3              | 2017                                                                                                          | 3              | 2017                                                       |  |
| STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2017                                                                                                             | 4              | 2017                                                                                                          | 4              | 2017                                                       |  |
| Near Field Infrared Experiment (NFIRE) - Targets of Opportunity - 1Q2011                                                                                                                    | 1              | 2011                                                                                                          | 1              | 2011                                                       |  |
| NFIRE - Targets of Opportunity - 2Q2011                                                                                                                                                     | 2              | 2011                                                                                                          | 2              | 2011                                                       |  |
| NFIRE - Targets of Opportunity - 3Q2011                                                                                                                                                     | 3              | 2011                                                                                                          | 3              | 2011                                                       |  |
| NFIRE - Targets of Opportunity - 4Q2011                                                                                                                                                     | 4              | 2011                                                                                                          | 4              | 2011                                                       |  |
| NFIRE - Targets of Opportunity - 1Q2012                                                                                                                                                     | 1              | 2012                                                                                                          | 1              | 2012                                                       |  |
| NFIRE - Targets of Opportunity - 2Q2012                                                                                                                                                     | 2              | 2012                                                                                                          | 2              | 2012                                                       |  |
| NFIRE - Targets of Opportunity - 3Q2012                                                                                                                                                     | 3              | 2012                                                                                                          | 3              | 2012                                                       |  |

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2013 Missile Defense Agency **DATE:** February 2012

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| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603895C: <i>Ballistic Missile Defense System</i><br><i>Space Programs</i> | <b>PROJECT</b><br>MD33: <i>MD Space Exp Center (MDSEC)</i> |
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| Events                                                                    | Start   |      | End     |      |
|---------------------------------------------------------------------------|---------|------|---------|------|
|                                                                           | Quarter | Year | Quarter | Year |
| NFIRE - Targets of Opportunity - 4Q2012                                   | 4       | 2012 | 4       | 2012 |
| NFIRE Laser Communications Terminal (LCT) Experiments/Operations - 1Q2011 | 1       | 2011 | 1       | 2011 |
| NFIRE LCT Experiments/Operations - 2Q2011                                 | 2       | 2011 | 2       | 2011 |
| NFIRE LCT Experiments/Operations - 3Q2011                                 | 3       | 2011 | 3       | 2011 |
| NFIRE LCT Experiments/Operations - 4Q2011                                 | 4       | 2011 | 4       | 2011 |
| NFIRE LCT Experiments/Operations - 1Q2012                                 | 1       | 2012 | 1       | 2012 |
| NFIRE LCT Experiments/Operations - 2Q2012                                 | 2       | 2012 | 2       | 2012 |
| NFIRE LCT Experiments/Operations - 3Q2012                                 | 3       | 2012 | 3       | 2012 |
| NFIRE LCT Experiments/Operations - 4Q2012                                 | 4       | 2012 | 4       | 2012 |

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| Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |         |              |                                                                                          |               |         |         | DATE: February 2012                   |         |                  |            |
| APPROPRIATION/BUDGET ACTIVITY<br>0400: Research, Development, Test & Evaluation, Defense-Wide<br>BA 4: Advanced Component Development & Prototypes (ACD&P)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |         |              | R-1 ITEM NOMENCLATURE<br>PE 0603895C: Ballistic Missile Defense System<br>Space Programs |               |         |         | PROJECT<br>MD40: Program-Wide Support |         |                  |            |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | FY 2011 | FY 2012 | FY 2013 Base | FY 2013 OCO                                                                              | FY 2013 Total | FY 2014 | FY 2015 | FY 2016                               | FY 2017 | Cost To Complete | Total Cost |
| MD40: Program-Wide Support                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.407   | -       | 0.351        | -                                                                                        | 0.351         | 0.332   | 0.324   | 0.357                                 | 0.375   | Continuing       | Continuing |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0       | 0       | 0            |                                                                                          | 0             | 0       | 0       | 0                                     | 0       |                  |            |
| Note<br>N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |         |              |                                                                                          |               |         |         |                                       |         |                  |            |
| A. Mission Description and Budget Item Justification<br>Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (FFRDC) providing integrity and oversight of the BMDS as well as, supporting MDA in enabling the development and evaluation of technologies that will respond to the changing threat. In addition, includes Global Deployment personnel and support performing deployment site preparation and activation. Other costs included provide facility capabilities for MDA Executing Agent locations (with the exception of Federal Office Building 2 after FY 2011), such as physical and technical security, legal services, travel and agency training, office and equipment leases, rents and utilities, data and unified communications support, supplies and maintenance, logistics and central property management of equipment, and similar operating expenses. Also includes legal settlements, and foreign currency fluctuations on a limited number of foreign contracts. In keeping with congressional intent, PWS is allocated on a pro-rata basis and therefore, fluctuates by year based on the total MDA budget. |         |         |              |                                                                                          |               |         |         |                                       |         |                  |            |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |         |              |                                                                                          |               |         |         | FY 2011                               | FY 2012 | FY 2013          |            |
| Title: Civilian Salaries and Support<br><br>Articles:<br><br>Description: See Description Below<br><br>FY 2011 Accomplishments:<br>See paragraph A, Mission Description and Budget Item Justification<br><br>FY 2012 Plans:<br>See paragraph A, Mission Description and Budget Item Justification<br><br>FY 2013 Plans:<br>See paragraph A, Mission Description and budget item justification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |         |              |                                                                                          |               |         |         | 0.407                                 | -       | 0.351            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |         |              |                                                                                          |               |         |         | 0                                     | 0       | 0                |            |
| Accomplishments/Planned Programs Subtotals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |         |              |                                                                                          |               |         |         | 0.407                                 | -       | 0.351            |            |
| C. Other Program Funding Summary (\$ in Millions)<br>N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |         |              |                                                                                          |               |         |         |                                       |         |                  |            |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2013 Missile Defense Agency                                                                                                        |                                                                                                               | <b>DATE:</b> February 2012                          |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i><br>BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0603895C: <i>Ballistic Missile Defense System</i><br><i>Space Programs</i> | <b>PROJECT</b><br>MD40: <i>Program-Wide Support</i> |
| <b><u>D. Acquisition Strategy</u></b><br>N/A                                                                                                                                                |                                                                                                               |                                                     |
| <b><u>E. Performance Metrics</u></b><br>N/A                                                                                                                                                 |                                                                                                               |                                                     |