

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

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| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> |
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| COST (\$ in Millions) | FY 2009 Actual | FY 2010 Estimate | FY 2011 Base Estimate | FY 2011 OCO Estimate | FY 2011 Total Estimate | FY 2012 Estimate | FY 2013 Estimate | FY 2014 Estimate | FY 2015 Estimate | Cost To Complete | Total Cost |
|--|----------------|------------------|-----------------------|----------------------|------------------------|------------------|------------------|------------------|------------------|------------------|------------|
| Total Program Element | 117.602 | 189.229 | 132.220 | 0.000 | 132.220 | 236.875 | 239.873 | 197.118 | 197.852 | 0 | 1,310.769 |
| <i>WX25: Advanced Technology Development</i> | 112.003 | 186.954 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 298.957 |
| <i>MD25: Advanced Technology</i> | 0.000 | 0.000 | 127.236 | 0.000 | 127.236 | 227.522 | 231.430 | 190.066 | 189.940 | Continuing | Continuing |
| <i>ZX40: Program-Wide Support</i> | 5.599 | 2.275 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 7.874 |
| <i>MD40: Program Wide Support</i> | 0.000 | 0.000 | 4.984 | 0.000 | 4.984 | 9.353 | 8.443 | 7.052 | 7.912 | Continuing | Continuing |

Note

In FY 2011, funding for Hercules Program Element 0603897C appears in the BMD Technology Program Element 0603175C.

In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Projects WX25 and ZX40 for FY 2009-FY 2010 are now captured in Projects MD25 and MD40.

A. Mission Description and Budget Item Justification

The FY 2011 program is balanced, reflecting the goals of the current Missile Defense Program: Continue a defense of the territory of the United States against rogue nation ballistic missile threats, Enhance missile defense to defend our deployed forces, allies, and friends against regional threats, Prove our Ballistic Missile Defense System works before making production decisions, Deliver reliable, high quality, and fiscally sustainable missile defense products, and develop future missile defense capabilities that are adaptable and responsive to intelligence based judgments including defeating large missile raid sizes of all ranges early in their flight.

Our submission reflects a greater emphasis on defense of U.S. forces, allies, and friends from regional threats posed by thousands of short- and medium-range ballistic missiles. The most cost-effective missile defense architecture is one that emphasizes intercepts early in a threat missile's flight. Early Intercepts can be observed by the BMDS sensors to determine if a second or third intercept attempt is necessary to achieve a robust degree of protection. Additionally, Early Intercepts forces the threat to deploy countermeasures early, making them more difficult to be effective.

UNCLASSIFIED

R-1 Line Item #28

Page 1 of 42

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

| | |
|---|--|
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|---|--|

A robust advanced missile defense technology development program is part of the MDA strategy to hedge against future threat uncertainties. The advanced technology effort is focused on the development and demonstration of an integrated set of technologies that allows us to intercept early in the battle space and optimize our ability to execute a shoot-look-shoot tactic, minimize the potential impact of debris, and reduce the number of interceptors required to defeat a large raid of threat missiles in next and future generations.

The technology development effort will demonstrate the maturity of missile defense for threat segments emerging in next and future generations. This technology development is based on the BMDS integrated Build D foundation, including increased BMDS sensor resource management, the capability of BMDS weapons to engage ballistic missiles utilizing BMD System track data, and limited system level hit assessment to be used by the new forward based BMDS sensors (e.g. Airborne Infrared) and interceptors (e.g. SM-3 Block IIB) in the capability improvement phases of Phased Adaptive Architecture to allow earlier intercepts of longer range threats. We do this by conducting a series of ground and flight tests to enable thorough assessment of each BMDS sensor to understand its potential to provide the position, velocity and discrimination data for lethal objects with sufficient accuracy and low enough latency (i.e., Quality of Service (QoS)) to enable Command and Control, Battle Management and Communications (C2BMC) and BMDS interceptors to complete ballistic missile engagements. These ground and flight tests demonstrate key functions: Overhead Persistent Infrared for initial tracking in flight, unmanned aerial vehicle or Space Tracking and Surveillance System demonstration satellites for post-boost tracking, the battle management command and control, and Standard Missile-3 engagements.

The Advanced Technology program also seeks out and invests in the next generation and game changing technology by executing research and development to address the threats we expect to face in the far term. The bottom line is that we are working to achieve a balance of missile defense capabilities that will provide the best protection today and tomorrow.

The three major goals for Advanced Technology are:

- Pursue cost and operationally effective capabilities to hedge against future threat uncertainties.
- Develop and demonstrate the maturity of the components of future BMDS architectures, in next and future generations, by conducting a series of experiments to enable thorough assessment of this capability.
- Leverage technology investments of other DoD organizations, industry, other government agencies and international partners.

UNCLASSIFIED

UNCLASSIFIED

| | |
|---|----------------------------|
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|---|----------------------------|

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B. Program Change Summary (\$ in Millions)

| | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011 Base</u> | <u>FY 2011 OCO</u> | <u>FY 2011 Total</u> |
|-------------------------------------|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget | 119.308 | 109.760 | 0.000 | 0.000 | 0.000 |
| Current President's Budget | 117.602 | 189.229 | 132.220 | 0.000 | 132.220 |
| Total Adjustments | -1.706 | 79.469 | 132.220 | 0.000 | 132.220 |
| • Congressional General Reductions | | 0.000 | | | |
| • Congressional Directed Reductions | | 0.000 | | | |
| • Congressional Rescissions | 0.000 | 0.000 | | | |
| • Congressional Adds | | 79.469 | | | |
| • Congressional Directed Transfers | | 0.000 | | | |
| • Reprogrammings | 0.047 | 0.000 | | | |
| • SBIR/STTR Transfer | -1.753 | 0.000 | | | |
| • Other Adjustment Detail | 0.000 | 0.000 | 132.220 | 0.000 | 132.220 |

Change Summary Explanation

FY 2009 decrease is a result of MDA programmatic changes.

FY 2010 increase is a result of Congressional actions.

No FY 2011 data provided in PB10.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

| APPROPRIATION/BUDGET ACTIVITY | | | | R-1 ITEM NOMENCLATURE | | | | PROJECT | | | |
|---|-----------------------|-------------------------|------------------------------|--|-------------------------------|-------------------------|-------------------------|--|-------------------------|-------------------------|-------------------|
| 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | | | | PE 0603175C: <i>Ballistic Missile Defense Technology</i> | | | | WX25: <i>Advanced Technology Development</i> | | | |
| COST (\$ in Millions) | FY 2009 Actual | FY 2010 Estimate | FY 2011 Base Estimate | FY 2011 OCO Estimate | FY 2011 Total Estimate | FY 2012 Estimate | FY 2013 Estimate | FY 2014 Estimate | FY 2015 Estimate | Cost To Complete | Total Cost |
| <i>WX25: Advanced Technology Development</i> | 112.003 | 186.954 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 298.957 |

Note

A. Mission Description and Budget Item Justification

A robust advanced missile defense technology development program is part of the MDA strategy to hedge against future threat uncertainties. MDA has defined five focus areas or Strategic Technology Portfolios: Persistent Sensors; Pervasive Weapons; Global Battle Management; Effective Targeting; and Effectiveness in Adverse Environments. MDA is focusing efforts among each portfolio that result in the development and demonstration of an integrated set of technologies that allows us to intercept early in the battle space and optimize our ability to execute a shoot-look-shoot tactic minimizing the need for costly salvos, to force less effective deployment of counter-measures, minimize the potential impact of debris, and reduce the number of interceptors required to defeat a raid of threat missiles.

The Advanced Technology also seeks to develop new innovative concepts and technologies that can be applied to stay ahead of the threat, improve system performance, and lower life-cycle costs. The Advanced Technology program will invest across the five strategic technology portfolios in low Technology Readiness Level-High payoff technologies with priorities in electro-optical and infrared and radio frequency Sensor Technologies to achieve Persistent Sensor Coverage and support early intercepts; Directed Energy and Interceptor Technologies to enable early engagements; Battle Management, Kill Assessment and Data Processing technologies to improve BMDS engagement success; and Material and Algorithms to ensure effective operations under stressing conditions.

B. Accomplishments/Planned Program (\$ in Millions)

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Sensors Technology See Description Below <i>FY 2009 Accomplishments:</i> Passive Electro-optical and Infrared Technology | 48.262 | 0.000 | 0.000 | 0.000 | 0.000 |

UNCLASSIFIED

R-1 Line Item #28

Page 4 of 42

UNCLASSIFIED

| | | | | | | |
|---|--|--|----------------|----------------------------|------------------------|--------------------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency | | | | DATE: February 2010 | | |
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| B. Accomplishments/Planned Program (\$ in Millions) | | | | | | |
| | | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
| <p>Continue development of Scalable Panels for Efficient Affordable Radar Spiral 2 radio frequency panels to improve detection range, increase number of tracking beams, and develop improved waveforms. Operation in a Nuclear Environment (OPINE)</p> <p>Continue development of structures with advanced materials to enable the use of material properties for the relevant environments.</p> <p><i>FY 2011 Base Plans:</i> NA</p> <p><i>FY 2011 OCO Plans:</i> NA</p> | | | | | | |
| <p>Program Office See Description Below</p> <p><i>FY 2009 Accomplishments:</i> NA</p> <p><i>FY 2010 Plans:</i> This includes the management of the Strategic Technology Portfolios (STPs) and technology program analysis. This effort is comprised of entirely Program Management costs associated with Advanced Technology development, no article quantities are reported.</p> <p>Funds government personnel salaries for program management, project support, project costs and travel.</p> | | 0.000 | 26.301 | 0.000 | 0.000 | 0.000 |

UNCLASSIFIED

R-1 Line Item #28

Page 15 of 42

UNCLASSIFIED

| | | | | | | |
|---|--|--|----------------|----------------------------|--------------------|----------------------|
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| B. Accomplishments/Planned Program (\$ in Millions) | | | | | | |
| | | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
| Support activities for technology development. <i>FY 2011 Base Plans:</i> NA <i>FY 2011 OCO Plans:</i> NA | | | | | | |
| Statutory and Mandated See Description Below <i>FY 2009 Accomplishments:</i> Technology Applications Program Conducted Technology Applications Reviews to assist MDA-funded technology developers find and enter technology transfer opportunities beyond MDA- applications. Conducted Business Focus Workshops with MDA Small Business Innovative Research Phase I companies to help develop a successful business model for their technology early in the development cycle. Published the MDA Technology Applications annual report, The Spirit of Innovation, and a report on biomedical and life science technology transfer from MDA technology on the Web. Administered, updated, and expanded MDA's dedicated Web site for technology transfer. Improved Technology Applications program information resident on the MDA portal. Continued to manage and continually update the Technology Applications program's internal data handling and tracking system SpinTrack to manage all aspects of the Technology Applications program including historical data. Continued to work with the program managers of the MDA Technology Applications to provide support for duties such as attendance at DoD's Defense Technology Transfer Working Group | | 1.611 | 1.290 | 0.000 | 0.000 | 0.000 |

UNCLASSIFIED

UNCLASSIFIED

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| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | | PROJECT WX25: <i>Advanced Technology Development</i> | | | | | | | | | | | | | | | | | | | |
| B. Accomplishments/Planned Program (\$ in Millions) | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th></th> <th>FY 2009</th> <th>FY 2010</th> <th>FY 2011 Base</th> <th>FY 2011 OCO</th> <th>FY 2011 Total</th> </tr> </thead> <tbody> <tr> <td> meetings, Federal Laboratory Consortium for Technology Transfer (FLC) activities, MDA symposia and conferences, and Industry Participation Days with major defense contractors. Historically Black Colleges and Universities/Minority Institutions Projects that dealt with lethality were aligned to the MDA Corporate Lethality Plan. Close out Historically Black Colleges and Universities/Minority Institutions contracts that conducted research involving target identification, tracking and destruction. <i>FY 2010 Plans:</i> Conduct technology applications reviews and business focus workshops. Assist in accelerating technology maturation. <i>FY 2011 Base Plans:</i> NA <i>FY 2011 OCO Plans:</i> NA </td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> Congressional Action See Description Below <i>FY 2009 Accomplishments:</i> Provided programmatic oversight and technical influence for the following programs: Multiple-Target-Tracking Sensor-Array Technology (MOST) Night Vision Sensor </td> <td align="center">6.000</td> <td align="center">8.000</td> <td align="center">0.000</td> <td align="center">0.000</td> <td align="center">0.000</td> </tr> </tbody> </table> | | | | | | | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total | meetings, Federal Laboratory Consortium for Technology Transfer (FLC) activities, MDA symposia and conferences, and Industry Participation Days with major defense contractors. Historically Black Colleges and Universities/Minority Institutions Projects that dealt with lethality were aligned to the MDA Corporate Lethality Plan. Close out Historically Black Colleges and Universities/Minority Institutions contracts that conducted research involving target identification, tracking and destruction. <i>FY 2010 Plans:</i> Conduct technology applications reviews and business focus workshops. Assist in accelerating technology maturation. <i>FY 2011 Base Plans:</i> NA <i>FY 2011 OCO Plans:</i> NA | | | | | | Congressional Action See Description Below <i>FY 2009 Accomplishments:</i> Provided programmatic oversight and technical influence for the following programs: Multiple-Target-Tracking Sensor-Array Technology (MOST) Night Vision Sensor | 6.000 | 8.000 | 0.000 | 0.000 | 0.000 |
| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total | | | | | | | | | | | | | | | | | | |
| meetings, Federal Laboratory Consortium for Technology Transfer (FLC) activities, MDA symposia and conferences, and Industry Participation Days with major defense contractors. Historically Black Colleges and Universities/Minority Institutions Projects that dealt with lethality were aligned to the MDA Corporate Lethality Plan. Close out Historically Black Colleges and Universities/Minority Institutions contracts that conducted research involving target identification, tracking and destruction. <i>FY 2010 Plans:</i> Conduct technology applications reviews and business focus workshops. Assist in accelerating technology maturation. <i>FY 2011 Base Plans:</i> NA <i>FY 2011 OCO Plans:</i> NA | | | | | | | | | | | | | | | | | | | | | | | |
| Congressional Action See Description Below <i>FY 2009 Accomplishments:</i> Provided programmatic oversight and technical influence for the following programs: Multiple-Target-Tracking Sensor-Array Technology (MOST) Night Vision Sensor | 6.000 | 8.000 | 0.000 | 0.000 | 0.000 | | | | | | | | | | | | | | | | | | |

UNCLASSIFIED

R-1 Line Item #28

Page 17 of 42

UNCLASSIFIED

| | | | | | | |
|---|--|--|----------------|----------------------------|------------------------|--------------------------|
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| B. Accomplishments/Planned Program (\$ in Millions) | | | | | | |
| | | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
| <p><i>FY 2010 Plans:</i> Provide programmatic oversight and technical influence for the following programs:</p> <p>Multiple-Target-Tracking Sensor-Array Technology (MOST) Advanced Battery Technology Missile Activity Characteristics</p> <p><i>FY 2011 Base Plans:</i> NA</p> <p><i>FY 2011 OCO Plans:</i> NA</p> | | | | | | |
| <p>Advanced Communications Technology See Description Below</p> <p><i>FY 2009 Accomplishments:</i> The Advanced Communications effort focuses on developing the next generation command and control and battle management concepts and the enabling technologies required to implement them among the BMDS. These activities will develop, integrate, and demonstrate advanced Command and Control, Battle Management and Communications (C2BMC) concepts and enabling technologies for improving BMDS performance across all mission areas to include defense of friends and allies and layers of defense including early intercept. Advanced BMDS integration concepts and techniques are demonstrated and evaluated in system-wide flight tests to facilitate the transition to the operational C2BMC.</p> | | 11.788 | 12.567 | 0.000 | 0.000 | 0.000 |

UNCLASSIFIED

R-1 Line Item #28

Page 18 of 42

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

| | | |
|---|--|--|
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| | | | | | |
|--|----------------|----------------|---------------------|--------------------|----------------------|
| B. Accomplishments/Planned Program (\$ in Millions) | | | | | |
| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
| Accomplishments/Planned Programs Subtotals | 112.003 | 186.954 | 0.000 | 0.000 | 0.000 |

| | | | | | | | | | | | |
|---|----------------|----------------|---------------------|--------------------|----------------------|----------------|----------------|----------------|----------------|-------------------------|-------------------|
| C. Other Program Funding Summary (\$ in Millions) | | | | | | | | | | | |
| Line Item | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total | FY 2012 | FY 2013 | FY 2014 | FY 2015 | Cost To Complete | Total Cost |
| • 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i> | 951.414 | 715.732 | 436.482 | 0.000 | 436.482 | 250.275 | 336.711 | 500.983 | 521.717 | 0 | 3,713.314 |
| • 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i> | 1,472.683 | 1,027.371 | 1,346.181 | 0.000 | 1,346.181 | 1,112.655 | 1,291.790 | 1,099.029 | 1,033.213 | 0 | 8,382.922 |
| • 0603883C: <i>Ballistic Missile Defense Boost Defense Segment</i> | 384.365 | 182.317 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 566.682 |
| • 0603884C: <i>Ballistic Missile Defense Sensors</i> | 682.754 | 621.017 | 454.859 | 0.000 | 454.859 | 469.589 | 681.397 | 650.525 | 616.342 | 0 | 4,176.483 |
| • 0603886C: <i>Ballistic Missile Defense System Interceptor</i> | 308.869 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 308.869 |
| • 0603888C: <i>Ballistic Missile Defense Test and Targets</i> | 906.952 | 823.333 | 1,113.425 | 0.000 | 1,113.425 | 1,105.959 | 951.371 | 871.929 | 829.608 | 0 | 6,602.577 |
| • 0603890C: <i>Ballistic Missile Defense Enabling Programs</i> | 402.776 | 358.751 | 402.769 | 0.000 | 402.769 | 468.673 | 457.745 | 473.871 | 488.799 | 0 | 3,053.384 |
| • 0603891C: <i>SPECIAL PROGRAMS - MDA</i> | 182.998 | 250.185 | 270.189 | 0.000 | 270.189 | 269.040 | 450.645 | 517.486 | 601.315 | 0 | 2,541.858 |
| • 0603892C: <i>BMD AEGIS</i> | 1,054.323 | 1,435.717 | 1,467.278 | 0.000 | 1,467.278 | 1,021.878 | 1,112.668 | 1,076.739 | 923.316 | 0 | 8,091.919 |
| • 0603893C: <i>SPACE TRACKING & SURVEILLANCE SYSTEM</i> | 209.831 | 161.609 | 112.678 | 0.000 | 112.678 | 98.500 | 56.424 | 52.928 | 34.661 | 0 | 726.631 |
| • 0603894C: <i>MULTIPLE KILL VEHICLE</i> | 226.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 226.027 |
| | 23.250 | 12.492 | 10.942 | 0.000 | 10.942 | 11.182 | 11.347 | 11.749 | 12.155 | 0 | 93.117 |

UNCLASSIFIED

UNCLASSIFIED

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|---|--|--|

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

| <u>Line Item</u> | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011 Base</u> | <u>FY 2011 OCO</u> | <u>FY 2011 Total</u> | <u>FY 2012</u> | <u>FY 2013</u> | <u>FY 2014</u> | <u>FY 2015</u> | <u>Cost To Complete</u> | <u>Total Cost</u> |
|--|----------------|----------------|-------------------------|------------------------|--------------------------|----------------|----------------|----------------|----------------|-----------------------------|-------------------|
| • 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i> | | | | | | | | | | | |
| • 0603896C: <i>BMD C2BMC</i> | 275.174 | 334.734 | 342.625 | 0.000 | 342.625 | 364.085 | 289.778 | 323.922 | 298.936 | 0 | 2,229.254 |
| • 0603897C: <i>BMD HERCULES</i> | 51.629 | 47.932 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 99.561 |
| • 0603898C: <i>BMD JOINT WARFIGHTER SUPPORT</i> | 66.283 | 61.098 | 68.726 | 0.000 | 68.726 | 62.239 | 63.451 | 65.158 | 67.231 | 0 | 454.186 |
| • 0603901C: <i>DIRECTED ENERGY RESEARCH</i> | 0.000 | 0.000 | 98.688 | 0.000 | 98.688 | 101.371 | 103.449 | 104.572 | 104.141 | 0 | 512.221 |
| • 0603904C: <i>MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)</i> | 102.823 | 86.483 | 86.198 | 0.000 | 86.198 | 88.181 | 78.517 | 80.410 | 83.087 | 0 | 605.699 |
| • 0603906C: <i>REGARDING TRENCH</i> | 3.159 | 6.130 | 7.529 | 0.000 | 7.529 | 8.295 | 8.286 | 8.479 | 8.675 | 0 | 50.553 |
| • 0603907C: <i>SEA BASED X-BAND RADAR (SBX)</i> | 143.878 | 167.153 | 153.056 | 0.000 | 153.056 | 150.104 | 159.832 | 160.163 | 197.099 | 0 | 1,131.285 |
| • 0603908C: <i>BMD EUROPEAN INTERCEPTOR SITE</i> | 348.722 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 348.722 |
| • 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i> | 73.728 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 73.728 |
| • 0603911C: <i>BMD EUROPEAN CAPABILITY</i> | 0.000 | 50.226 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 50.226 |
| • 0603912C: <i>BMD European Comm Support</i> | 26.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 26.016 |
| • 0603913C: <i>ISRAELI COOPERATIVE</i> | 0.000 | 201.323 | 121.735 | 0.000 | 121.735 | 111.100 | 113.101 | 116.114 | 119.172 | 0 | 782.545 |
| • 0604880C: <i>LAND-BASED SM-3</i> | 0.000 | 0.000 | 281.378 | 0.000 | 281.378 | 345.937 | 187.062 | 93.456 | 139.595 | 0 | 1,047.428 |
| • 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i> | 0.000 | 255.987 | 318.800 | 0.000 | 318.800 | 405.500 | 416.300 | 337.300 | 227.500 | 0 | 1,961.387 |
| | 0.000 | 0.000 | 66.969 | 0.000 | 66.969 | 123.851 | 184.800 | 348.360 | 482.952 | 0 | 1,206.932 |

UNCLASSIFIED

R-1 Line Item #28

Page 22 of 42

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

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| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | PROJECT WX25: <i>Advanced Technology Development</i> |
|---|--|--|

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

| <u>Line Item</u> | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011 Base</u> | <u>FY 2011 OCO</u> | <u>FY 2011 Total</u> | <u>FY 2012</u> | <u>FY 2013</u> | <u>FY 2014</u> | <u>FY 2015</u> | <u>Cost To Complete</u> | <u>Total Cost</u> |
|--|----------------|----------------|-------------------------|------------------------|--------------------------|----------------|----------------|----------------|----------------|-----------------------------|-------------------|
| • 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i> | | | 111.671 | 0.000 | 111.671 | 103.636 | 123.591 | 103.668 | 58.773 | 0 | 501.339 |
| • 0604884C: <i>AIRBORNE INFRARED (ABIR)</i> | 0.000 | 0.000 | | | | | | | | 0 | |
| • 0605502C: <i>Small Business Innovative Research BMDO</i> | 124.788 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 124.788 |
| • 0901585C: <i>Pentagon Reservation</i> | 20.146 | 19.709 | 20.482 | 0.000 | 20.482 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 60.337 |
| • 0901598C: <i>Management Headquarters-MDA</i> | 87.151 | 52.403 | 29.754 | 0.000 | 29.754 | 29.421 | 29.974 | 30.567 | 31.171 | 0 | 290.441 |

D. Acquisition Strategy

MDA's fiscal year FY 2010 budget submission reflected an emphasis on early intercept research and development. The acquisition strategy to conduct this technology development effort consists of three pillars. First, leverage the technical expertise of Federally Funded Research and Development Centers and University Applied Research Centers. Second, continue to leverage relevant existing contracts within limits of the Competition and Contracting Act (CICA) taking into account contractor past performance, scope, ceiling and period of performance. Third, for new technology initiatives, seek industry solutions via the Advanced Technology Broad Agency Announcement and competitive procurements.

MDA will transition from the existing legacy, project-oriented Systems Engineering and Technical Assistance (SETA) contractor construct to an enterprise-wide Advisory and Assistance Services (A&AS) approach to support the Ballistic Missile Defense System (BMDS) mission. The objectives are to implement national engineering and support services for the BMDS mission across the enterprise, enhance the sharing of ballistic missile defense expertise and knowledge across the agency, centralize the acquisition of support services manpower in a more efficient manner and reduce agency overhead costs enterprise-wide. A&AS support includes engineering and technical services; studies, analyses, and evaluation; and management and professional services.

E. Performance Metrics

NA

UNCLASSIFIED

R-1 Line Item #28

Page 23 of 42

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

| APPROPRIATION/BUDGET ACTIVITY | | | | R-1 ITEM NOMENCLATURE | | | | PROJECT | | | |
|---|-----------------------|-------------------------|------------------------------|--|-------------------------------|-------------------------|-------------------------|----------------------------------|-------------------------|-------------------------|-------------------|
| 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | | | | PE 0603175C: <i>Ballistic Missile Defense Technology</i> | | | | MD25: <i>Advanced Technology</i> | | | |
| COST (\$ in Millions) | FY 2009 Actual | FY 2010 Estimate | FY 2011 Base Estimate | FY 2011 OCO Estimate | FY 2011 Total Estimate | FY 2012 Estimate | FY 2013 Estimate | FY 2014 Estimate | FY 2015 Estimate | Cost To Complete | Total Cost |
| MD25: <i>Advanced Technology</i> | 0.000 | 0.000 | 127.236 | 0.000 | 127.236 | 227.522 | 231.430 | 190.066 | 189.940 | Continuing | Continuing |

Note

A. Mission Description and Budget Item Justification

A robust advanced missile defense technology development program is part of our strategy to hedge against future threat uncertainties that are emerging in next and future generations. The efforts are focused on the development and demonstration of an integrated set of technologies that allows us to intercept early in the battle space and optimize our ability to execute a shoot-look-shoot tactic, to force less effective deployment of counter-measures, minimize the potential impact of debris, and reduce the number of interceptors required to defeat a raid of threat missiles. Near-term technology development efforts include enhanced command, control battle management and communication capabilities, high performance interceptor and kill vehicle components, and experiments to integrate new technologies and demonstrate early intercept concepts against a large raid.

In addition to conducting dedicated early intercept experiments, the agency will invest in science and technology to improve upon the initial early intercept capability and seek out next generation and game changing technologies. As threats expand and mature, the need for continuously available sensors and faster interceptors supports investment for advanced sensors to achieve persistent sensor coverage and advanced propulsion and lightweight kill vehicle components to increase the speed of our interceptors. In addition, the agency is beginning several new technology initiatives that will demand new ideas and new solutions from industry. This program element also executes the management and technical oversight of the Small Business Innovative Research and Small Business Technology Transfer to help focus those efforts. This Program Element does not fund the awards.

B. Accomplishments/Planned Program (\$ in Millions)

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| High Performance Interceptor Components See Description Below <i>FY 2009 Accomplishments:</i> NA | 0.000 | 0.000 | 40.790 | 0.000 | 40.790 |

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| Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency | | | | DATE: February 2010 | | | | |
| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | | PROJECT MD25: <i>Advanced Technology</i> | | | | |
| B. Accomplishments/Planned Program (\$ in Millions) | | | | | | | | |
| | | | | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
| <p>See Description Below</p> <p><i>FY 2009 Accomplishments:</i> NA</p> <p><i>FY 2010 Plans:</i> NA</p> <p><i>FY 2011 Base Plans:</i> Enhanced Command, Control, Battle Management and Communication executes a technology development strategy that integrates advanced technology components with existing Ballistic Missile Defense systems to demonstrate capability improvements through a series of experiments. This development strategy will focus on two main objectives. The first objective is to explore via analysis, modeling, and experimentation, the performance benefit of migrating the architecture to a net-centric, service oriented architecture. The second objective will combine National sensing capabilities with Airborne Infrared Systems capabilities to enhance the BMDS's overall capability. This includes the development of experimental battle management and sensor processing capabilities for both unmanned aerial vehicles and space-based sensors.</p> <p>Demonstrate experimental net-centric, service oriented architecture for both sensor resource and battle management.</p> <p>Demonstrate multi-sensor (Airborne Infrared and space sensors) signal processing capabilities to provide the fundamental components of Quality of Service (QoS) of Command and Control, Battle Management and Communications (C2BMC) and sensor data (position, velocity, and discrimination of sufficient accuracy and low enough latency to complete ballistic missile engagements) in realistic test environments.</p> | | | | | | | | |

UNCLASSIFIED

R-1 Line Item #28

Page 26 of 42

UNCLASSIFIED

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| Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency | | | | DATE: February 2010 | | |
| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | PROJECT MD25: <i>Advanced Technology</i> | | | | |
| B. Accomplishments/Planned Program (\$ in Millions) | | | | | | |
| | | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
| <p>The collected QoS of Command and Control, Battle Management and communications (C2BMC) and sensor data forms the basis for BMD System Engineering technical trade studies between sensors and guided interceptors to allocate functions and data accuracies.</p> <p><i>FY 2011 OCO Plans:</i> NA</p> | | | | | | |
| <p>Science and Technology See Description Below</p> <p><i>FY 2009 Accomplishments:</i> NA</p> <p><i>FY 2010 Plans:</i> NA</p> <p><i>FY 2011 Base Plans:</i> The Science and Technology investment addresses future threat uncertainties. The Innovation program seeks leap ahead, innovative and breakthrough technologies from domestic and international sources. Research areas may include next generation radars, electro-optical infrared passive sensors, interceptors, algorithms and software, innovative game changing technologies, laser technologies, advanced power systems, and adaptive communications techniques. This activity also conducts Education Outreach activities, manages the Missile Defense Science Technology Advanced Research (MSTAR) Program and executes the MDA Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) Program to include the solicitation, evaluation, selection, and technical management and oversight of all awards.</p> | | 0.000 | 0.000 | 20.510 | 0.000 | 20.510 |

UNCLASSIFIED

R-1 Line Item #28

Page 27 of 42

UNCLASSIFIED

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| Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency | | | | DATE: February 2010 | | | | |
| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | | PROJECT MD25: <i>Advanced Technology</i> | | | | |
| B. Accomplishments/Planned Program (\$ in Millions) | | | | | | | | |
| | | | | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
| <p>The Science & Technology program will utilize Broad Agency Announcements, University research and SBIR/STTR projects to develop technologies that improve the performance and/or provide cost effective alternatives.</p> <p>Next Generation Radar</p> <p>Build and test next generation radar components.</p> <p>Electro-optical infrared passive sensors</p> <p>Identify and initiate research in key electro-optical infrared functional areas via the SBIR/STTR and MSTAR programs.</p> <p>Algorithms and Software</p> <p>Algorithm development for net-centric operations and adaptive communication systems</p> <p>Innovation</p> <p>Facilitate the transition of SBIR technology into the BMDS through partnership days. Receive and coordinate the technical review of White Papers generated from the Advanced Technology and Inside Science Technology Advanced Research Broad Agency Announcements. Manage new and existing awards to promulgate ``game changing`` technology into the BMDS. Conduct annual MDA Math Challenge Week.</p> <p>SBIR/STTR Program</p> | | | | | | | | |

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| Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency | | | | DATE: February 2010 | | | | |
| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | | PROJECT MD25: <i>Advanced Technology</i> | | | | |
| B. Accomplishments/Planned Program (\$ in Millions) | | | | | | | | |
| | | | | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
| Develop research topics and solicitation for BMDS capabilities to hedge against future threat uncertainties. Execute the MDA SBIR/STTR solicitation. <i>FY 2011 OCO Plans:</i> NA | | | | | | | | |
| Statutory and Mandated See Description Below <i>FY 2009 Accomplishments:</i> NA <i>FY 2010 Plans:</i> NA <i>FY 2011 Base Plans:</i> Conduct Technology Applications Reviews to assist MDA-funded technology developers find and enter technology transfer opportunities beyond MDA applications. Conduct Business Focus Workshops with MDA SBIR Phase I companies to help develop a successful business model for their technology early in the development cycle. Publish the MDA Technology Applications annual report, The Spirit of Innovation, and a report on biomedical and life science technology transfer from MDA technology on the Web. Administer, update, and expand MDA's dedicated Web site for technology transfer. Continue to manage and continually update the Technology Applications program's internal data handling and tracking system SpinTrack to manage all aspects of the Technology Applications program including historical data. | | | | 0.000 | 0.000 | 1.290 | 0.000 | 1.290 |

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| Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency | | | | DATE: February 2010 | | | | |
| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | | PROJECT MD25: <i>Advanced Technology</i> | | | | |
| B. Accomplishments/Planned Program (\$ in Millions) | | | | | | | | |
| | | | | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
| <p>Demonstrate and evaluate advanced C2BMC capabilities in live-flight test events using the C2BMC X-Lab.</p> <p>Continue to evolve war fighter concept of operations (CONOPS) with appropriate engagement sequence group (ESG) in the areas of boost phase tracking and classification, sensor resource management, weapons resource management, post-intercept debris information flow, and communication with allies and friendly nations.</p> <p>Develop and demonstrate next generation sensor netting and sensor resource management techniques.</p> <p>Conduct sensor netting experiments associated with tracking, integrated discrimination, sensor resource tasking, and Communications/bandwidth constraints.</p> <p>Develop and demonstrate advanced battle management (BM) and integrated fire control capabilities.</p> <p>Conduct architecture assessments of BM functions federated within C2BMC and various allied/coalition partners and friendly nations.</p> <p>Integrate the CONOPS information and ESG priorities for advanced and emerging BMDS capabilities (such as Early Intercept and Space Tracking and Surveillance System (STSS)) into battle management constructs.</p> <p><i>FY 2011 OCO Plans:</i> NA</p> | | | | | | | | |
| Accomplishments/Planned Programs Subtotals | | | | 0.000 | 0.000 | 127.236 | 0.000 | 127.236 |

UNCLASSIFIED

R-1 Line Item #28

Page 31 of 42

UNCLASSIFIED

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| Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency | | | | | | | | | | DATE: February 2010 | |
| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | | | | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | | | | PROJECT MD25: <i>Advanced Technology</i> | | | |
| C. Other Program Funding Summary (\$ in Millions) | | | | | | | | | | | |
| Line Item | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total | FY 2012 | FY 2013 | FY 2014 | FY 2015 | Cost To Complete | Total Cost |
| • 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i> | 951.414 | 715.732 | 436.482 | 0.000 | 436.482 | 250.275 | 336.711 | 500.983 | 521.717 | 0 | 3,713.314 |
| • 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i> | 1,472.683 | 1,027.371 | 1,346.181 | 0.000 | 1,346.181 | 1,112.655 | 1,291.790 | 1,099.029 | 1,033.213 | 0 | 8,382.922 |
| • 0603883C: <i>Ballistic Missile Defense Boost Defense Segment</i> | 384.365 | 182.317 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 566.682 |
| • 0603884C: <i>Ballistic Missile Defense Sensors</i> | 682.754 | 621.017 | 454.859 | 0.000 | 454.859 | 469.589 | 681.397 | 650.525 | 616.342 | 0 | 4,176.483 |
| • 0603886C: <i>Ballistic Missile Defense System Interceptor</i> | 308.869 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 308.869 |
| • 0603888C: <i>Ballistic Missile Defense Test and Targets</i> | 906.952 | 823.333 | 1,113.425 | 0.000 | 1,113.425 | 1,105.959 | 951.371 | 871.929 | 829.608 | 0 | 6,602.577 |
| • 0603890C: <i>Ballistic Missile Defense Enabling Programs</i> | 402.776 | 358.751 | 402.769 | 0.000 | 402.769 | 468.673 | 457.745 | 473.871 | 488.799 | 0 | 3,053.384 |
| • 0603891C: <i>SPECIAL PROGRAMS - MDA</i> | 182.998 | 250.185 | 270.189 | 0.000 | 270.189 | 269.040 | 450.645 | 517.486 | 601.315 | 0 | 2,541.858 |
| • 0603892C: <i>BMD AEGIS</i> | 1,054.323 | 1,435.717 | 1,467.278 | 0.000 | 1,467.278 | 1,021.878 | 1,112.668 | 1,076.739 | 923.316 | 0 | 8,091.919 |
| • 0603893C: <i>SPACE TRACKING & SURVEILLANCE SYSTEM</i> | 209.831 | 161.609 | 112.678 | 0.000 | 112.678 | 98.500 | 56.424 | 52.928 | 34.661 | 0 | 726.631 |
| • 0603894C: <i>MULTIPLE KILL VEHICLE</i> | 226.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 226.027 |
| • 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i> | 23.250 | 12.492 | 10.942 | 0.000 | 10.942 | 11.182 | 11.347 | 11.749 | 12.155 | 0 | 93.117 |
| • 0603896C: <i>BMD C2BMC</i> | 275.174 | 334.734 | 342.625 | 0.000 | 342.625 | 364.085 | 289.778 | 323.922 | 298.936 | 0 | 2,229.254 |
| • 0603897C: <i>BMD HERCULES</i> | 51.629 | 47.932 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 99.561 |
| • 0603898C: <i>BMD JOINT WARFIGHTER SUPPORT</i> | 66.283 | 61.098 | 68.726 | 0.000 | 68.726 | 62.239 | 63.451 | 65.158 | 67.231 | 0 | 454.186 |

UNCLASSIFIED

R-1 Line Item #28

Page 32 of 42

UNCLASSIFIED

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|---|----------------|----------------|--|------------------------|--------------------------|----------------|--|----------------|----------------|-----------------------------|-------------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency | | | | | | | | | | DATE: February 2010 | |
| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | | | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | | | | PROJECT MD25: <i>Advanced Technology</i> | | | | |
| C. Other Program Funding Summary (\$ in Millions) | | | | | | | | | | | |
| Line Item | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total | FY 2012 | FY 2013 | FY 2014 | FY 2015 | Cost To Complete | Total Cost |
| • 0603901C: <i>DIRECTED ENERGY RESEARCH</i> | 0.000 | 0.000 | 98.688 | 0.000 | 98.688 | 101.371 | 103.449 | 104.572 | 104.141 | 0 | 512.221 |
| • 0603904C: <i>MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)</i> | 102.823 | 86.483 | 86.198 | 0.000 | 86.198 | 88.181 | 78.517 | 80.410 | 83.087 | 0 | 605.699 |
| • 0603906C: <i>REGARDING TRENCH</i> | 3.159 | 6.130 | 7.529 | 0.000 | 7.529 | 8.295 | 8.286 | 8.479 | 8.675 | 0 | 50.553 |
| • 0603907C: <i>SEA BASED X-BAND RADAR (SBX)</i> | 143.878 | 167.153 | 153.056 | 0.000 | 153.056 | 150.104 | 159.832 | 160.163 | 197.099 | 0 | 1,131.285 |
| • 0603908C: <i>BMD EUROPEAN INTERCEPTOR SITE</i> | 348.722 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 348.722 |
| • 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i> | 73.728 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 73.728 |
| • 0603911C: <i>BMD EUROPEAN CAPABILITY</i> | 0.000 | 50.226 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 50.226 |
| • 0603912C: <i>BMD European Comm Support</i> | 26.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 26.016 |
| • 0603913C: <i>ISRAELI COOPERATIVE</i> | 0.000 | 201.323 | 121.735 | 0.000 | 121.735 | 111.100 | 113.101 | 116.114 | 119.172 | 0 | 782.545 |
| • 0604880C: <i>LAND-BASED SM-3</i> | 0.000 | 0.000 | 281.378 | 0.000 | 281.378 | 345.937 | 187.062 | 93.456 | 139.595 | 0 | 1,047.428 |
| • 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i> | 0.000 | 255.987 | 318.800 | 0.000 | 318.800 | 405.500 | 416.300 | 337.300 | 227.500 | 0 | 1,961.387 |
| • 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i> | 0.000 | 0.000 | 66.969 | 0.000 | 66.969 | 123.851 | 184.800 | 348.360 | 482.952 | 0 | 1,206.932 |
| • 0604884C: <i>AIRBORNE INFRARED (ABIR)</i> | 0.000 | 0.000 | 111.671 | 0.000 | 111.671 | 103.636 | 123.591 | 103.668 | 58.773 | 0 | 501.339 |
| • 0605502C: <i>Small Business Innovative Research BMDO</i> | 124.788 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 124.788 |
| • 0901585C: <i>Pentagon Reservation</i> | 20.146 | 19.709 | 20.482 | 0.000 | 20.482 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 60.337 |

UNCLASSIFIED

R-1 Line Item #28

Page 33 of 42

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

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| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | PROJECT MD25: <i>Advanced Technology</i> |
|---|--|--|

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

| <u>Line Item</u> | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011</u> <u>Base</u> | <u>FY 2011</u> <u>OCO</u> | <u>FY 2011</u> <u>Total</u> | <u>FY 2012</u> | <u>FY 2013</u> | <u>FY 2014</u> | <u>FY 2015</u> | <u>Cost To</u> <u>Complete</u> | <u>Total Cost</u> |
|--|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|
| • 0901598C: <i>Management Headquarters-MDA</i> | 87.151 | 52.403 | 29.754 | 0.000 | 29.754 | 29.421 | 29.974 | 30.567 | 31.171 | 0 | 290.441 |

D. Acquisition Strategy

MDA's fiscal year FY 2011 budget submission reflects an emphasis on early intercept research and development. The acquisition strategy to conduct this technology development effort consists of three focus areas. First, leverage the technical expertise of Federally Funded Research and Development Centers and University Applied Research Centers. Second, continue to leverage relevant existing contracts within limits of the Competition and Contracting Act (CICA) taking into account contractor past performance, scope, ceiling and period of performance. Third, for new technology initiatives, seek industry solutions via the Advanced Technology Broad Agency Announcement and competitive procurements.

MDA will transition from the existing legacy, project-oriented Systems Engineering and Technical Assistance (SETA) contractor construct to an enterprise-wide Advisory and Assistance Services (A&AS) approach to support the Ballistic Missile Defense System (BMDS) mission. The objectives are to implement national engineering and support services for the BMDS mission across the enterprise, enhance the sharing of ballistic missile defense expertise and knowledge across the agency, centralize the acquisition of support services manpower in a more efficient manner and reduce agency overhead costs enterprise-wide. A&AS support includes engineering and technical services; studies, analyses, and evaluation; and management and professional services.

E. Performance Metrics

NA

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

| APPROPRIATION/BUDGET ACTIVITY | | | | R-1 ITEM NOMENCLATURE | | | | PROJECT | | | |
|---|-----------------------|-------------------------|------------------------------|--|-------------------------------|-------------------------|-------------------------|-----------------------------------|-------------------------|-------------------------|-------------------|
| 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | | | | PE 0603175C: <i>Ballistic Missile Defense Technology</i> | | | | ZX40: <i>Program-Wide Support</i> | | | |
| COST (\$ in Millions) | FY 2009 Actual | FY 2010 Estimate | FY 2011 Base Estimate | FY 2011 OCO Estimate | FY 2011 Total Estimate | FY 2012 Estimate | FY 2013 Estimate | FY 2014 Estimate | FY 2015 Estimate | Cost To Complete | Total Cost |
| ZX40: <i>Program-Wide Support</i> | 5.599 | 2.275 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 7.874 |

Note

In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Project ZX40 is now captured in Project MD40 beginning in FY11

A. Mission Description and Budget Item Justification

Program-Wide Support provides funding for common non-headquarters support functions across the entire program. Includes costs for both government civilians performing these functions, as well as outside services and support contractors that augment government staff in these areas. Other costs included provide facility capabilities for MDA Executing Agent locations (with the exception of Federal Office Building 2), such as physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses. Also includes funding for charges on canceled appropriations in accordance with Public Law 101-510, legal settlements, and foreign currency fluctuations on a limited number of foreign contracts.

B. Accomplishments/Planned Program (\$ in Millions)

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|--|----------------|----------------|---------------------|--------------------|----------------------|
| Civilian Salaries and Support See Description Below <i>FY 2009 Accomplishments:</i> See Section A: Mission Description and Budget Item Justification <i>FY 2010 Plans:</i> NA <i>FY 2011 Base Plans:</i> NA | 5.599 | 2.275 | 0.000 | 0.000 | 0.000 |

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

| | | |
|---|--|---|
| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | PROJECT ZX40: <i>Program-Wide Support</i> |
|---|--|---|

| | | | | | |
|--|----------------|----------------|---------------------|--------------------|----------------------|
| B. Accomplishments/Planned Program (\$ in Millions) | | | | | |
| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
| <i>FY 2011 OCO Plans:</i> NA | | | | | |
| Accomplishments/Planned Programs Subtotals | 5.599 | 2.275 | 0.000 | 0.000 | 0.000 |

| | | | | | | | | | | | |
|---|----------------|----------------|---------------------|--------------------|----------------------|----------------|----------------|----------------|----------------|-------------------------|-------------------|
| C. Other Program Funding Summary (\$ in Millions) | | | | | | | | | | | |
| Line Item | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total | FY 2012 | FY 2013 | FY 2014 | FY 2015 | Cost To Complete | Total Cost |
| • 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i> | 951.414 | 715.732 | 436.482 | 0.000 | 436.482 | 250.275 | 336.711 | 500.983 | 521.717 | 0 | 3,713.314 |
| • 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i> | 1,472.683 | 1,027.371 | 1,346.181 | 0.000 | 1,346.181 | 1,112.655 | 1,291.790 | 1,099.029 | 1,033.213 | 0 | 8,382.922 |
| • 0603883C: <i>Ballistic Missile Defense Boost Defense Segment</i> | 384.365 | 182.317 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 566.682 |
| • 0603884C: <i>Ballistic Missile Defense Sensors</i> | 682.754 | 621.017 | 454.859 | 0.000 | 454.859 | 469.589 | 681.397 | 650.525 | 616.342 | 0 | 4,176.483 |
| • 0603886C: <i>Ballistic Missile Defense System Interceptor</i> | 308.869 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 308.869 |
| • 0603888C: <i>Ballistic Missile Defense Test and Targets</i> | 906.952 | 823.333 | 1,113.425 | 0.000 | 1,113.425 | 1,105.959 | 951.371 | 871.929 | 829.608 | 0 | 6,602.577 |
| • 0603890C: <i>Ballistic Missile Defense Enabling Programs</i> | 402.776 | 358.751 | 402.769 | 0.000 | 402.769 | 468.673 | 457.745 | 473.871 | 488.799 | 0 | 3,053.384 |
| • 0603891C: <i>SPECIAL PROGRAMS - MDA</i> | 182.998 | 250.185 | 270.189 | 0.000 | 270.189 | 269.040 | 450.645 | 517.486 | 601.315 | 0 | 2,541.858 |
| • 0603892C: <i>BMD AEGIS</i> | 1,054.323 | 1,435.717 | 1,467.278 | 0.000 | 1,467.278 | 1,021.878 | 1,112.668 | 1,076.739 | 923.316 | 0 | 8,091.919 |
| • 0603893C: <i>SPACE TRACKING & SURVEILLANCE SYSTEM</i> | 209.831 | 161.609 | 112.678 | 0.000 | 112.678 | 98.500 | 56.424 | 52.928 | 34.661 | 0 | 726.631 |

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

| | | |
|---|--|---|
| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | PROJECT ZX40: <i>Program-Wide Support</i> |
|---|--|---|

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

| <u>Line Item</u> | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011</u> <u>Base</u> | <u>FY 2011</u> <u>OCO</u> | <u>FY 2011</u> <u>Total</u> | <u>FY 2012</u> | <u>FY 2013</u> | <u>FY 2014</u> | <u>FY 2015</u> | <u>Cost To</u> <u>Complete</u> | <u>Total Cost</u> |
|--|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|
| • 0603894C: <i>MULTIPLE KILL VEHICLE</i> | 226.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 226.027 |
| • 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i> | 23.250 | 12.492 | 10.942 | 0.000 | 10.942 | 11.182 | 11.347 | 11.749 | 12.155 | 0 | 93.117 |
| • 0603896C: <i>BMD C2BMC</i> | 275.174 | 334.734 | 342.625 | 0.000 | 342.625 | 364.085 | 289.778 | 323.922 | 298.936 | 0 | 2,229.254 |
| • 0603897C: <i>BMD HERCULES</i> | 51.629 | 47.932 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 99.561 |
| • 0603898C: <i>BMD JOINT WARFIGHTER SUPPORT</i> | 66.283 | 61.098 | 68.726 | 0.000 | 68.726 | 62.239 | 63.451 | 65.158 | 67.231 | 0 | 454.186 |
| • 0603901C: <i>DIRECTED ENERGY RESEARCH</i> | 0.000 | 0.000 | 98.688 | 0.000 | 98.688 | 101.371 | 103.449 | 104.572 | 104.141 | 0 | 512.221 |
| • 0603904C: <i>MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)</i> | 102.823 | 86.483 | 86.198 | 0.000 | 86.198 | 88.181 | 78.517 | 80.410 | 83.087 | 0 | 605.699 |
| • 0603906C: <i>REGARDING TRENCH</i> | 3.159 | 6.130 | 7.529 | 0.000 | 7.529 | 8.295 | 8.286 | 8.479 | 8.675 | 0 | 50.553 |
| • 0603907C: <i>SEA BASED X-BAND RADAR (SBX)</i> | 143.878 | 167.153 | 153.056 | 0.000 | 153.056 | 150.104 | 159.832 | 160.163 | 197.099 | 0 | 1,131.285 |
| • 0603908C: <i>BMD EUROPEAN INTERCEPTOR SITE</i> | 348.722 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 348.722 |
| • 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i> | 73.728 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 73.728 |
| • 0603911C: <i>BMD EUROPEAN CAPABILITY</i> | 0.000 | 50.226 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 50.226 |
| • 0603912C: <i>BMD European Comm Support</i> | 26.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 26.016 |
| • 0603913C: <i>ISRAELI COOPERATIVE</i> | 0.000 | 201.323 | 121.735 | 0.000 | 121.735 | 111.100 | 113.101 | 116.114 | 119.172 | 0 | 782.545 |
| • 0604880C: <i>LAND-BASED SM-3</i> | 0.000 | 0.000 | 281.378 | 0.000 | 281.378 | 345.937 | 187.062 | 93.456 | 139.595 | 0 | 1,047.428 |
| | 0.000 | 255.987 | 318.800 | 0.000 | 318.800 | 405.500 | 416.300 | 337.300 | 227.500 | 0 | 1,961.387 |

UNCLASSIFIED

R-1 Line Item #28

Page 37 of 42

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

| | | |
|---|--|---|
| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | PROJECT ZX40: <i>Program-Wide Support</i> |
|---|--|---|

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

| <u>Line Item</u> | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011 Base</u> | <u>FY 2011 OCO</u> | <u>FY 2011 Total</u> | <u>FY 2012</u> | <u>FY 2013</u> | <u>FY 2014</u> | <u>FY 2015</u> | <u>Cost To Complete</u> | <u>Total Cost</u> |
|--|----------------|----------------|-------------------------|------------------------|--------------------------|----------------|----------------|----------------|----------------|-----------------------------|-------------------|
| • 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i> | | | | | | | | | | | |
| • 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i> | 0.000 | 0.000 | 66.969 | 0.000 | 66.969 | 123.851 | 184.800 | 348.360 | 482.952 | 0 | 1,206.932 |
| • 0604884C: <i>AIRBORNE INFRARED (ABIR)</i> | 0.000 | 0.000 | 111.671 | 0.000 | 111.671 | 103.636 | 123.591 | 103.668 | 58.773 | 0 | 501.339 |
| • 0605502C: <i>Small Business Innovative Research BMDO</i> | 124.788 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 124.788 |
| • 0901585C: <i>Pentagon Reservation</i> | 20.146 | 19.709 | 20.482 | 0.000 | 20.482 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 60.337 |
| • 0901598C: <i>Management Headquarters-MDA</i> | 87.151 | 52.403 | 29.754 | 0.000 | 29.754 | 29.421 | 29.974 | 30.567 | 31.171 | 0 | 290.441 |

D. Acquisition Strategy

NA

E. Performance Metrics

NA

UNCLASSIFIED

R-1 Line Item #28

Page 38 of 42

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

| APPROPRIATION/BUDGET ACTIVITY | | | | R-1 ITEM NOMENCLATURE | | | | PROJECT | | | |
|---|----------------|------------------|-----------------------|--|------------------------|------------------|------------------|-----------------------------------|------------------|------------------|------------|
| 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | | | | PE 0603175C: <i>Ballistic Missile Defense Technology</i> | | | | MD40: <i>Program Wide Support</i> | | | |
| COST (\$ in Millions) | FY 2009 Actual | FY 2010 Estimate | FY 2011 Base Estimate | FY 2011 OCO Estimate | FY 2011 Total Estimate | FY 2012 Estimate | FY 2013 Estimate | FY 2014 Estimate | FY 2015 Estimate | Cost To Complete | Total Cost |
| MD40: <i>Program Wide Support</i> | 0.000 | 0.000 | 4.984 | 0.000 | 4.984 | 9.353 | 8.443 | 7.052 | 7.912 | Continuing | Continuing |

Note

In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Project ZX40 is now captured in Project MD40 beginning in FY11

A. Mission Description and Budget Item Justification

Program-Wide Support provides funding for common non-headquarters support functions across the entire program. Includes costs for both government civilians performing these functions, as well as outside services and support contractors that augment government staff in these areas. Other costs included provide facility capabilities for MDA Executing Agent locations (with the exception of Federal Office Building 2), such as physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses. Also includes funding for charges on canceled appropriations in accordance with Public Law 101-510, legal settlements, and foreign currency fluctuations on a limited number of foreign contracts.

B. Accomplishments/Planned Program (\$ in Millions)

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|--|---------|---------|--------------|-------------|---------------|
| Civilian Salaries and Support See Description Below <i>FY 2009 Accomplishments:</i> NA <i>FY 2010 Plans:</i> NA <i>FY 2011 Base Plans:</i> NA | 0.000 | 0.000 | 4.984 | 0.000 | 4.984 |

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

| | | |
|---|--|---|
| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | PROJECT MD40: <i>Program Wide Support</i> |
|---|--|---|

| B. Accomplishments/Planned Program (\$ in Millions) | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|--|---------|---------|-----------------|----------------|------------------|
| FY 2011 OCO Plans: NA | | | | | |
| Accomplishments/Planned Programs Subtotals | 0.000 | 0.000 | 4.984 | 0.000 | 4.984 |

| C. Other Program Funding Summary (\$ in Millions) | | | | | | | | | | | |
|---|----------------|----------------|-------------------------|------------------------|--------------------------|----------------|----------------|----------------|----------------|-----------------------------|-------------------|
| <u>Line Item</u> | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011 Base</u> | <u>FY 2011 OCO</u> | <u>FY 2011 Total</u> | <u>FY 2012</u> | <u>FY 2013</u> | <u>FY 2014</u> | <u>FY 2015</u> | <u>Cost To Complete</u> | <u>Total Cost</u> |
| • 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i> | 951.414 | 715.732 | 436.482 | 0.000 | 436.482 | 250.275 | 336.711 | 500.983 | 521.717 | 0 | 3,713.314 |
| • 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i> | 1,472.683 | 1,027.371 | 1,346.181 | 0.000 | 1,346.181 | 1,112.655 | 1,291.790 | 1,099.029 | 1,033.213 | 0 | 8,382.922 |
| • 0603883C: <i>Ballistic Missile Defense Boost Defense Segment</i> | 384.365 | 182.317 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 566.682 |
| • 0603884C: <i>Ballistic Missile Defense Sensors</i> | 682.754 | 621.017 | 454.859 | 0.000 | 454.859 | 469.589 | 681.397 | 650.525 | 616.342 | 0 | 4,176.483 |
| • 0603886C: <i>Ballistic Missile Defense System Interceptor</i> | 308.869 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 308.869 |
| • 0603888C: <i>Ballistic Missile Defense Test and Targets</i> | 906.952 | 823.333 | 1,113.425 | 0.000 | 1,113.425 | 1,105.959 | 951.371 | 871.929 | 829.608 | 0 | 6,602.577 |
| • 0603890C: <i>Ballistic Missile Defense Enabling Programs</i> | 402.776 | 358.751 | 402.769 | 0.000 | 402.769 | 468.673 | 457.745 | 473.871 | 488.799 | 0 | 3,053.384 |
| • 0603891C: <i>SPECIAL PROGRAMS - MDA</i> | 182.998 | 250.185 | 270.189 | 0.000 | 270.189 | 269.040 | 450.645 | 517.486 | 601.315 | 0 | 2,541.858 |
| • 0603892C: <i>BMD AEGIS</i> | 1,054.323 | 1,435.717 | 1,467.278 | 0.000 | 1,467.278 | 1,021.878 | 1,112.668 | 1,076.739 | 923.316 | 0 | 8,091.919 |
| • 0603893C: <i>SPACE TRACKING & SURVEILLANCE SYSTEM</i> | 209.831 | 161.609 | 112.678 | 0.000 | 112.678 | 98.500 | 56.424 | 52.928 | 34.661 | 0 | 726.631 |

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

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|---|--|---|
| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | PROJECT MD40: <i>Program Wide Support</i> |
|---|--|---|

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

| <u>Line Item</u> | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011</u> <u>Base</u> | <u>FY 2011</u> <u>OCO</u> | <u>FY 2011</u> <u>Total</u> | <u>FY 2012</u> | <u>FY 2013</u> | <u>FY 2014</u> | <u>FY 2015</u> | <u>Cost To</u> <u>Complete</u> | <u>Total Cost</u> |
|--|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|
| • 0603894C: <i>MULTIPLE KILL VEHICLE</i> | 226.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 226.027 |
| • 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i> | 23.250 | 12.492 | 10.942 | 0.000 | 10.942 | 11.182 | 11.347 | 11.749 | 12.155 | 0 | 93.117 |
| • 0603896C: <i>BMD C2BMC</i> | 275.174 | 334.734 | 342.625 | 0.000 | 342.625 | 364.085 | 289.778 | 323.922 | 298.936 | 0 | 2,229.254 |
| • 0603897C: <i>BMD HERCULES</i> | 51.629 | 47.932 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 99.561 |
| • 0603898C: <i>BMD JOINT WARFIGHTER SUPPORT</i> | 66.283 | 61.098 | 68.726 | 0.000 | 68.726 | 62.239 | 63.451 | 65.158 | 67.231 | 0 | 454.186 |
| • 0603901C: <i>DIRECTED ENERGY RESEARCH</i> | 0.000 | 0.000 | 98.688 | 0.000 | 98.688 | 101.371 | 103.449 | 104.572 | 104.141 | 0 | 512.221 |
| • 0603904C: <i>MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)</i> | 102.823 | 86.483 | 86.198 | 0.000 | 86.198 | 88.181 | 78.517 | 80.410 | 83.087 | 0 | 605.699 |
| • 0603906C: <i>REGARDING TRENCH</i> | 3.159 | 6.130 | 7.529 | 0.000 | 7.529 | 8.295 | 8.286 | 8.479 | 8.675 | 0 | 50.553 |
| • 0603907C: <i>SEA BASED X-BAND RADAR (SBX)</i> | 143.878 | 167.153 | 153.056 | 0.000 | 153.056 | 150.104 | 159.832 | 160.163 | 197.099 | 0 | 1,131.285 |
| • 0603908C: <i>BMD EUROPEAN INTERCEPTOR SITE</i> | 348.722 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 348.722 |
| • 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i> | 73.728 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 73.728 |
| • 0603911C: <i>BMD EUROPEAN CAPABILITY</i> | 0.000 | 50.226 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 50.226 |
| • 0603912C: <i>BMD European Comm Support</i> | 26.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 26.016 |
| • 0603913C: <i>ISRAELI COOPERATIVE</i> | 0.000 | 201.323 | 121.735 | 0.000 | 121.735 | 111.100 | 113.101 | 116.114 | 119.172 | 0 | 782.545 |
| • 0604880C: <i>LAND-BASED SM-3</i> | 0.000 | 0.000 | 281.378 | 0.000 | 281.378 | 345.937 | 187.062 | 93.456 | 139.595 | 0 | 1,047.428 |
| | 0.000 | 255.987 | 318.800 | 0.000 | 318.800 | 405.500 | 416.300 | 337.300 | 227.500 | 0 | 1,961.387 |

UNCLASSIFIED

R-1 Line Item #28

Page 41 of 42

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010

| | | |
|---|--|---|
| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i> | R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i> | PROJECT MD40: <i>Program Wide Support</i> |
|---|--|---|

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

| <u>Line Item</u> | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011 Base</u> | <u>FY 2011 OCO</u> | <u>FY 2011 Total</u> | <u>FY 2012</u> | <u>FY 2013</u> | <u>FY 2014</u> | <u>FY 2015</u> | <u>Cost To Complete</u> | <u>Total Cost</u> |
|--|----------------|----------------|-------------------------|------------------------|--------------------------|----------------|----------------|----------------|----------------|-----------------------------|-------------------|
| • 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i> | | | | | | | | | | | |
| • 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i> | 0.000 | 0.000 | 66.969 | 0.000 | 66.969 | 123.851 | 184.800 | 348.360 | 482.952 | 0 | 1,206.932 |
| • 0604884C: <i>AIRBORNE INFRARED (ABIR)</i> | 0.000 | 0.000 | 111.671 | 0.000 | 111.671 | 103.636 | 123.591 | 103.668 | 58.773 | 0 | 501.339 |
| • 0605502C: <i>Small Business Innovative Research BMDO</i> | 124.788 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 124.788 |
| • 0901585C: <i>Pentagon Reservation</i> | 20.146 | 19.709 | 20.482 | 0.000 | 20.482 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 60.337 |
| • 0901598C: <i>Management Headquarters-MDA</i> | 87.151 | 52.403 | 29.754 | 0.000 | 29.754 | 29.421 | 29.974 | 30.567 | 31.171 | 0 | 290.441 |

D. Acquisition Strategy

MDA will transition from the existing legacy, project-oriented Systems Engineering and Technical Assistance (SETA) contractor construct to an enterprise-wide Advisory and Assistance Services (A&AS) approach to support the Ballistic Missile Defense System (BMDS) mission. The objectives are to implement national engineering and support services for the BMDS mission across the enterprise, enhance the sharing of ballistic missile defense expertise and knowledge across the agency, centralize the acquisition of support services manpower in a more efficient manner and reduce agency overhead costs enterprise-wide. A&AS support includes engineering and technical services; studies, analyses, and evaluation; and management and professional services.

E. Performance Metrics

NA

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