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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / <i>BMD Enabling Programs</i>
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	923.629	395.927	404.780	401.594	-	401.594	404.993	409.481	427.603	434.868	Continuing	Continuing
MD24: <i>System Engineering &amp; Integration</i>	368.362	126.625	141.368	133.166	-	133.166	135.296	137.233	139.846	141.901	Continuing	Continuing
MT23: <i>Enabling - Test</i>	-	32.792	16.611	17.449	-	17.449	25.501	26.040	24.704	25.077	Continuing	Continuing
MD28: <i>Intelligence &amp; Security</i>	69.469	38.485	40.263	41.254	-	41.254	45.192	45.654	48.462	49.348	Continuing	Continuing
MD30: <i>BMD Information Management Systems</i>	151.415	90.761	95.650	92.628	-	92.628	81.212	80.427	86.691	87.939	Continuing	Continuing
MC30: <i>Cyber Operations</i>	12.314	19.189	20.017	22.881	-	22.881	21.019	21.184	23.922	24.396	Continuing	Continuing
MD31: <i>Modeling &amp; Simulation</i>	85.843	39.589	42.668	44.458	-	44.458	47.278	47.837	50.226	50.984	Continuing	Continuing
MC31: <i>M&amp;S Cyber Operations</i>	-	0.204	0.225	0.253	-	0.253	0.258	0.263	0.268	0.274	Continuing	Continuing
MD32: <i>Quality, Safety, and Mission Assurance</i>	148.024	29.358	29.986	31.022	-	31.022	29.582	29.970	31.470	31.967	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	88.202	18.924	17.992	18.483	-	18.483	19.655	20.873	22.014	22.982	Continuing	Continuing

**Program MDAP/MAIS Code:** 362

**Note**

The increase in Project MC30 of \$2.864 million between FY 2016 to FY 2017 provides for compliance with expanding White House, Secretary of Defense, U.S. Cyber Command DoD-wide Cybersecurity Initiatives, and the Federal Information Security Management Act (FISMA). The most significant increase effort includes: \$2.550 million for the tri-annual license renewal of ArcSight. This aids in the safeguarding of MDA data by providing complete visibility into activity across the Information Technology (IT) infrastructure to include but not limited to: external threats such as malware and hackers; internal threats such as data breaches and fraud; risks from application flaws and configuration changes; and compliance pressures from failed audits. This software enables MDA to collect, analyze, and assess IT security, enterprise security and non-security events for rapid identification, prioritization and response.

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

The BMDS Enabling Programs provide critical products and processes needed to combine element missile defense systems into a single, integrated and layered BMDS to provide new defensive capabilities and evaluate existing capabilities against the emerging threats. Specifically, the Enabling Programs:

- Define BMDS architectures and functional requirements, conduct Analyses of Alternatives for the DoD, and provide engineering requirements, execution support, and pre- and post-mission analysis for BMD System tests
- Provide validated models and simulations for BMD System assessment
- Assess BMDS performance and deliver capabilities to the Warfighter

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<ul style="list-style-type: none"> <li>- Provide multi-disciplinary security and intelligence support for BMDS acquisition, development, test, and deployment</li> <li>- Provide Information Management tools and products supporting the development of BMDS capabilities while safeguarding networks and critical program information</li> <li>- Evaluate quality, technical safeguards, and mission assurance effectiveness</li> <li>- Assess System ability to maintain integrity and superiority with advances in technology development</li> </ul> <p>This Program Element includes support for discrimination improvement efforts, which aim to develop and field an integrated set of Element capabilities to improve BMDS effectiveness and resilience against the evolving threat. The end result will be a BMDS architecture more capable of discriminating and destroying a re-entry vehicle with a higher degree of confidence, improving Warfighter shot doctrine and preserving inventory. This effort encompasses Near-term, Mid-term, and Far-term discrimination improvements capability fielding. The discrimination improvements require a coordinated effort between Systems Engineering, Ground-based Midcourse Defense (PE 0603882C), BMD Sensors (PE 0603884C), C2BMC (PE 0603896C), Aegis BMD (PE 0603892C) and Advanced C4ISR (PE 0603179C).</p> <p>MDA is conducting studies to determine optimal radar site locations for defense of the U.S. from Intercontinental Ballistic Missiles (ICBMs). The locations would include a site for deployment of a long-range discrimination radar and a potential homeport for the Sea-Based X-Band Radar (SBX) on the East Coast of the United States. The initial analysis will determine the operational areas where sensors could be placed to meet the sensor discrimination needs of the BMD system. Once this analysis is complete MDA will begin development of site scoring criteria and, in the case of the SBX, assessments of transit time and time on station for candidate home port options. MDA will then develop initial screening criteria for operations and maintenance. This will be the basis for selection of at least three sites for more detailed examination, including environmental impact studies.</p> <p>MD24 Systems Engineering and Integration (SE&amp;I) defines required system-wide behavior, validates Element system designs, and verifies and assesses BMD System capability to defend the U.S. and its friends, allies, and deployed forces from ballistic missile attacks. SE&amp;I develops technical roadmaps, knowledge points, and capability trades at the BMDS level to balance integration and capability improvement efforts.</p> <p>MT23 Enabling-Test provides BMDS test planning, execution and post-test assessment, and provides critical data for proving that missile defense works.</p> <p>MD28 Intelligence and Security integrates multiple technical intelligence disciplines, such as intelligence, counterintelligence, cyber security, RDA security, and threat engineering, to identify potential threats and vulnerabilities to MDA and the BMDS and develop and implement strategies to mitigate those risks.</p> <p>MD30 Information Management Systems is a critical support element to MDA's RDT&amp;E mission. This effort provides secure and affordable enterprise information capabilities in support of the Agency's global mission. These IT functions consist of MDA secure communication networks, IT systems, special purpose processing nodes, operations and monitoring centers, and disaster recovery and continuity of operations requirements. These capabilities support the rapid deployment of the BMDS while complying with DoD initiatives of the Joint Information Environment (JIE) and the Unified Capabilities Framework to ensure MDA remains compatible with the DoD Information Network (DODIN).</p> <p>MC30 Cyber Operations sustains MDA's DoD Information Assurance Certification and Accreditation Program (DIACAP) and Controls Validation Testing (CVT) activities. It also funds the MDA Security Operations Center (SOC), responsible for monitoring, managing, patching, and maintaining MDA network and core Information Technology (IT) services; issuing and tracking Technical Compliance Orders; and coordinating overarching Enterprise NetOps. The MDA Computer</p>		

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Emergency Response Team (CERT), funded in this project, monitors the classified and unclassified information technology MDA administrative IT networks and report vulnerabilities. The MDA CERT coordinates with U.S. Cyber Command to identify and implement network vulnerability updates and patches to comply with U.S. Cyber Command vulnerabilities identified for DoD networks. The project also funds Information Assurance (IA) governance management and administrative management support, annual Agency-wide computer-based IA training and metrics reporting, implementation of Public Key Infrastructure and Enabling and Communications Security (COMSEC) related activities.

MD31 Modeling and Simulation (M&S) develops system-level models, simulations, and environments as missile defense technologies continually advance and the threat changes, and evaluates performance of the Elements, Components, and overall BMD System in support of verification, validation and accreditation. MDA's M&S program provides a cost effective means to assess and explore the performance space of the BMDS beyond what can be physically tested under current test range conditions and within the Agency's fiscal constraints. M&S conceptual simulation activities provide the capability to design and develop technologies to hedge against future missile threats.

MC31 M&S Cyber Operations provides the network/system certification and accreditation of M&S related information technology networks and systems necessary to comply with the Federal Information Security Management Act.

MD32 Quality, Safety, and Mission Assurance improves quality, safety, and mission assurance throughout the product life cycle of design, manufacturing, test and system operation, in order to achieve a safe and reliable BMD System.

MD40 Program-Wide Support (PWS) consists of essential non-headquarters management efforts providing integrated and efficient support to MDA functions and activities across the entire BMDS.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
Previous President's Budget	401.971	409.088	423.092	-	423.092
Current President's Budget	395.927	404.780	401.594	-	401.594
Total Adjustments	-6.044	-4.308	-21.498	-	-21.498
• Congressional General Reductions	0.000	-0.343			
• Congressional Directed Reductions	0.000	-3.965			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.651	0.000			
• SBIR/STTR Transfer	-6.695	0.000			
• Other Adjustment	0.000	0.000	-21.498	-	-21.498

**Change Summary Explanation**

The FY 2017 adjustment reflects a realignment of Department of Defense priorities.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs				<b>Project (Number/Name)</b> MD24 / System Engineering & Integration			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
MD24: System Engineering & Integration	368.362	126.625	141.368	133.166	-	133.166	135.296	137.233	139.846	141.901	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

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

SE&I continues to develop and improve integrated BMDS architectures, engineer major improvements to homeland and regional BMD capabilities, and conduct the BMDS level assessments necessary to deliver new capabilities to the Warfighter. SE&I applies its technical expertise and tools across many disciplines and specialties to define, design, test and integrate the BMDS. SE&I develops technical roadmaps, knowledge points, and capability trades at the BMDS level to balance integration and capability improvement efforts. The SE&I workforce, including Industry and Contractor Support Services (CSS), also provides analysis, decision support and planning activities for real-world operations to the National Command Authority, Joint Staff, Military Services, Combatant Commanders, Operational Test Agencies, Director of Operational Test and Evaluation, Allies, and others.

Fundamental to the SE&I approach is development, coordination, and dissemination of fully vetted products at each stage of the engineering process. These products communicate key information such as: technical goals and objectives; design trades and resulting decisions to update system design and interface requirements; integration plans and schedules; test objectives that ensure the collection of data needed to anchor the system representative models and simulations and enable independent verification and validation; assessment of system performance based on ground and flight test results; and fielding plans.

SE&I defines required system-wide behavior, validates Element system designs, and verifies and assesses system capabilities. The system engineering projects that accomplish these functions include: Future Concepts and Planning; Requirements and Design; and System Level Verification and Assessment. Additional engineering efforts cross multiple stages of the system engineering process: Discrimination, BMDS Assessment, Engineering Analysis and Quick Response Team, Knowledge Centers, Risk Management, Anti-Tamper, Manufacturing and Producibility, and Integrated Air and Missile Defense (IAMD).

The discrimination improvement effort will develop and field integrated Element capabilities to improve BMD System ability to identify lethal and non-lethal objects. SE&I will perform BMDS performance analysis and requirements engineering activities to specify the BMDS requirements and interfaces to achieve the improved capability. For Mid-term and Far-term SE&I will establish performance goals for the technology development phase; develop functional, performance, and interface requirements to address the Mid-term and Far-term threat sets. SE&I will establish ground and flight test requirements for the Mid-term and Far-term phases, and generate threat data to support analysis and testing activities.

The SE&I Major Program Goals are:

- Develop, design, test and integrate a layered BMDS that provides the required BMD performance

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- Provide system-level engineering support to the Elements, and lead collaborative cross-Element, cross-Component engineering
- Lead the engineering required to achieve Enhanced Homeland Defense capability
- Develop architectures and requirements to respond to the proliferation of short and medium range ballistic missiles
- Provide a more effective missile defense capability for U.S. deployed forces, allies, and partners, and enhance homeland defense
- Develop discrimination improvements for the Homeland and Regional Defense missions
- As technical authority for IAMD, provide a consistent, disciplined systems engineering process using a multi-Service team to integrate Joint IAMD systems
- Provide technical direction to Element and Component developers and provide System-level forums to track, assess, and improve hardware and software reliability
- Identify BMDS capabilities and limitations
- Develop performance assessment requirements, verify BMDS performance through testing, and conduct assessments to form the basis for technical capability declarations in support of fielding decisions
- Identify Critical Engagement Conditions and data required to develop the test campaigns to demonstrate BMDS performance
- Define the test objectives necessary to anchor BMDS-level models and simulations, enable independent verification and validation
- Identify System issues occurring in ground and flight tests and lead the effort to resolve them
- Analyze architecture alternatives and new technologies to establish technical roadmaps for future capabilities
- Ensure the BMDS is complementary to and interoperable with NATO and other theater systems
- Provide detailed analysis to support MDA leadership and US policy decisions
- Develop anti-tamper approaches to enable international fielding of the BMDS

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2015	FY 2016	FY 2017
<p><b>Title:</b> Future Concepts and Planning</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> This activity funds the BMDS architecture and future concept development, and efforts and studies to address the BMDS emergent threat, including DoD Analysis of Alternatives (AoA). The BMDS Architect develops and improves the integrated BMDS architecture by analyzing and proposing architecture alternatives and new technologies. The architecture and concepts team incorporates these alternatives and technologies into the BMDS future capabilities Systems Engineering effort by establishing and documenting initial system-level requirements.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Identified architecture alternatives that improve the BMD System's performance and are complementary to and interoperable with NATO systems and theaters around the world.</li> <li>- Analyzed architecture alternatives and new technologies, including new radar concepts, and participated in a BMD Sensors AoA.</li> <li>- Conducted BMDS Program of Record gap assessment and concept alternatives assessments in support of the budget development process.</li> <li>- Updated concept capability documentation based on the results of the architectural trade studies and technology development experiments.</li> </ul>	<p>11.097</p> <p align="center">-</p>	<p>13.285</p> <p align="center">-</p>	<p>12.486</p> <p align="center">-</p>

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<ul style="list-style-type: none"> <li>- Developed and documented integrated requirements for improvements to, or augmentations of, current system capabilities in the form of a Phased Implementation Plan.</li> <li>- Supported Warfighter development of the Prioritized Capabilities List (PCL).</li> <li>- Developed the Achievable Capabilities List (ACL) to respond to the PCL.</li> <li>- Developed and refined Capability Planning Specifications for future BMDS Elements/Components.</li> <li>- Supported technology development reviews for future/follow-on BMDS Element development efforts.</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>- Conduct studies to address Ballistic Missile Defense System capability gaps and keep pace with emergent regional and homeland threats.</li> <li>-- Analyze and document architecture alternatives and new technologies to address the gaps, including directed energy, Electro-Optical/Infrared sensors and multiple object kill vehicles</li> <li>-- Develop initial functional, performance and integration planning requirements for the next generation weapons and sensors</li> <li>-- Identify architecture alternatives that improve the BMD System's performance and are complementary to and interoperable with NATO systems and theaters around the world.</li> <li>- Assess cost and capability implications of integrating existing or planned sensor capabilities such as the Navy's Air and Missile Defense radar (AMDR), and potential allied partner assets.</li> <li>- Update concept capability documentation based on architectural options, trade studies, and technology development experiments.</li> <li>- Develop and document integrated requirements for improvements to, or augmentations of, current system capabilities in the form of a Phased Implementation Plan.</li> <li>- Provide BMD System data to inform Warfighter development of the Prioritized Capabilities List (PCL), and develop the Achievable Capabilities List (ACL) to respond to the Warfighters' needs.</li> <li>- Develop and refine Initial Requirements Documentation and Preliminary Specification Change Notices for future BMDS Elements/Components.</li> <li>- Support technology development reviews for future/follow-on BMDS Element development efforts.</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Analyze BMDS capability gaps, and conduct studies to identify and document architecture alternatives and new technologies to address the gaps and keep pace with emerging threat, to include Enhanced Defense of Hawaii, advanced sensor concepts, potential space layer technologies, and Electro Magnetic Rail Gun applications</li> <li>-- Develop Initial Requirements Documents (IRDs) to establish functional, performance and integration planning requirements for next generation BMD weapons and sensors</li> <li>-- Identify architecture alternatives that improve BMDS performance and are complementary to and interoperable with NATO systems and theaters around the world</li> <li>-- Support technology development reviews for future/follow-on BMDS Element development efforts.</li> </ul>			

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<ul style="list-style-type: none"> <li>- Update concept capability documentation based on architectural options, trade studies, and technology development experiments.</li> <li>- Maintain and update Phased Implementation Plan to document integrated requirements for improvements to, or augmentations of, current system capabilities.</li> <li>- Develop Preliminary Specification Change Notices for selected future BMDS capabilities and technologies.</li> <li>- Maintain a dialog with the warfighter community for all BMDS engineering and technical issues</li> <li>-- Inform Warfighter development of the PCL by providing relevant BMD System data</li> <li>-- Develop yearly update to the ACL to respond to Warfighter needs.</li> <li>- Lead collaborative effort to improve foreign partners' understanding of existing system capabilities, architectural performance and operational concepts of the BMDS.</li> </ul>				
<p><b>Title:</b> Requirements and Design</p> <p align="right"><b>Articles:</b></p>		25.941	28.391	29.100
<p><b>Description:</b> The Requirements and Design effort develops the BMD System level requirements and specifications for the PAA Phases and beyond, and drives the integration of the BMDS. Requirements and Design allocates requirements to BMDS Elements and adjudicates Element level specifications to provide optimized capabilities for the Warfighter.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Developed functional performance, interface, and design suitability requirements in collaboration with BMDS element engineers to flow-down and allocate requirements to Programs.</li> <li>- Developed updates to the BMD System Description Document, BMD System Specification, and BMD System Interface Control Documents to document integrated system build content, such as discrimination, approved for design, development and integration.</li> <li>- Conducted System/Subsystem Requirements Reviews to ensure correct technical execution and understanding to realize the Phased Adaptive Approach (PAA) and increase the flexibility and capability of the BMDS.</li> <li>- Conducted engineering analyses and performed trade studies for system design and development products.</li> <li>- Completed the engineering work to finalize System Change Notices for PAA Phase 3 requirements changes, to include BMDS Discrepancy Reports mitigation strategies.</li> <li>- Developed BMDS-level requirements for mid-term discrimination improvements for Homeland and Regional Defense to flow down to executing elements, in collaboration with BMDS Program Elements.</li> <li>- Developed requirements language for Redesigned Kill Vehicle (RKV) Requests for Proposals (RFP).</li> <li>- Conducted Redesigned Kill Vehicle System Requirements Review (SRR).</li> <li>- Provided updated requirements traceability and certification guidance and conducted detailed System/Element requirements reconciliation to resolve technical disconnects and ensure common requirements interpretation.</li> </ul> <p><b>FY 2016 Plans:</b></p>		-	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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<ul style="list-style-type: none"> <li>- Develop functional performance, interface, and design suitability requirements in collaboration with BMDS element engineers to flow-down and allocate requirements to Programs.</li> <li>- Develop updates to the BMD System Description Document, BMD System Specification, and BMD System Interface Control Documents to document integrated system build content, such as discrimination, approved for design, development and integration.</li> <li>- Conduct Requirements Reviews to ensure correct technical execution and understanding to realize Enhanced Homeland Defense (EHD) and Phased Adaptive Approach (PAA) and increase the flexibility and capability of the BMDS.</li> <li>- Conduct engineering analyses and perform trade studies for system design and development products.</li> <li>- Develop Specification Change Notices for post- PAA Phase 3 requirements changes, to include mitigation strategies to address BMDS Discrepancy Reports.</li> <li>- Deliver requirements language for Mid Term discrimination improvement capabilities to executing elements, in collaboration with BMDS Program Elements.</li> <li>- Refine Redesigned Exoatmospheric Kill Vehicle (RKV) requirements for Enhanced Homeland Defense.</li> <li>- Provide updated requirements traceability and certification guidance and conduct detailed System/Element requirements reconciliation to resolve technical disconnects and ensure common requirements interpretation.</li> <li>- Assess and add emerging threats to MDA's lethality prediction models.</li> <li>- Produce and execute the BMDS Lethality Program Plan to encompass updates to lethality assessments, collateral effects and consequences.</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Define BMDS technical content expectations and develop system requirements, to include integration of new capabilities, such as the Navy's Air and Missile Defense Radar (SPY-6).</li> <li>- Allocate functional performance, interface, and design suitability requirements to Programs, in collaboration with BMDS element engineers.</li> <li>- Deliver system technical baseline updates to document integrated system build content: BMD System Description Document, BMD System Specification, and BMD System Interface Control Documents.</li> <li>- Identify and resolve technical disconnects through the requirements trace process and element certifications; conduct engineering analyses and perform trade studies</li> <li>- Participate in Element Requirements Reviews.</li> <li>- Develop Specification Change Notices for future requirements changes, to include mitigation strategies to address BMDS Discrepancy Reports.</li> <li>- Develop initial requirements for Far-term BMD content to pace the evolving threat.</li> <li>- Deliver requirements for Far-Term discrimination improvements to executing elements.</li> <li>- Provide Master Integration Plan and ensure reporting of Element functionality and software / hardware integration in the BAR and Director's Program Reviews.</li> </ul>			
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<ul style="list-style-type: none"> <li>- Assess and add emerging threats to MDA's lethality prediction models.</li> <li>- Incorporate updates to lethality assessments, collateral effects, and consequences of intercept into the BMDS Lethality Program Plan.</li> </ul>			
<p><b>Title:</b> Systems Engineering, Engineering Analysis and Quick Response Team</p> <p align="right"><b>Articles:</b></p>	8.743	9.504	9.865
<p><b>Description:</b> This task provides rapid response, high quality systems engineering analysis products and supporting technical data to address external and internal Agency inquiries and decisions; produces complex weapon system performance data; develops responses to Warfighter requests for information and analysis (RFI/RFA); updates Element/Component Characteristics for Analysis (E/CCA) database; supports Real World Events; and maintains the Effectiveness Metrics Standard to ensure consistent and accurate analyses.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Provided performance analysis to support the development Homeland Defense system architecture options.</li> <li>- Conducted system level performance analyses to support ongoing BMDS Architecture and Systems Engineering efforts:                             <ul style="list-style-type: none"> <li>-- Analyzed and predicted the performance of potential future BMDS capabilities, such as new sensor concepts.</li> <li>-- Provided technical assessments in critical areas, such as technical performance measures.</li> </ul> </li> <li>- Responded to Warfighter, Combatant Command (CCMD) and other RFI/RFAs; provided analytical support for real-world events.</li> <li>- Updated E/CCA database with Element data changes to ensure consistent capability predictions and analyses.</li> <li>- Maintained the Effectiveness Metrics Standard (EMS) necessary for systematic presentation of alternatives to MDA senior leaders and the Combatant Commanders.</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue performance analysis to support the development of Homeland Defense system architecture development and employment options.</li> <li>- Conduct system level performance analyses to support ongoing BMDS Architecture and Systems Engineering efforts:                             <ul style="list-style-type: none"> <li>-- Analyze and predict the performance of future BMDS capabilities, such as Long Range Discrimination Radar and other advanced sensors.</li> <li>-- Provide technical assessments in critical areas, and collaborate with BMDS Elements to define and track technical performance measures.</li> </ul> </li> <li>- Conduct site studies for additional Missile Defense sensor coverage.</li> <li>- Respond to Warfighter, Combatant Command (CCMD) and other requests for analyses and requests for information; provide analytical support for real-world events.</li> <li>- Provide updated Element/Component Characteristics for Analysis (E/CCA) Element data to ensure consistent capability predictions and analyses.</li> </ul>	-	-	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016			
<b>Appropriation/Budget Activity</b> 0400 / 4		<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	
<p>- Maintain the Effective Metric Standard (EMS) necessary for systematic presentation of alternatives to MDA senior leaders and the Combatant Commanders.</p> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Conduct system level analyses to support ongoing BMDS Architecture and Systems Engineering efforts.</li> <li>- Analyze expected performance of options for Enhanced Homeland Defense system architecture</li> <li>-- Analyze and predict the performance of future BMDS capabilities</li> <li>-- Provide technical assessments in critical areas, and collaborate with BMDS Elements to define and track technical performance measures.</li> <li>- Respond to Warfighter, CCMD and Congressional RFIs/RFAs; provide analytical support for real-world events.</li> <li>- Provide periodic E/CCA database updates to ensure consistent analysis inputs.</li> <li>- Maintain the Effectiveness Metrics Standard to ensure consistent performance analysis methodology.</li> <li>- Develop analytical data to respond to information requests from MDA and DoD leadership.</li> </ul>					
<p><b>Title:</b> Anti-Tamper &amp; Engineering Manufacturing Readiness Level Development</p> <p align="right"><b>Articles:</b></p>		5.003	5.382	5.353	
<p><b>Description:</b> This task develops anti-tamper approaches to enable international fielding of the BMDS by providing protection against reverse engineering of critical technologies, supporting coalition warfare, and extending the effective operational life of the system. Engineering and Manufacturing Readiness Levels (EMRLs) are used to assess BMDS element, component, or system maturity.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Developed anti-tamper approaches to enable international fielding, support coalition warfare, and extend the effective operational life of the BMDS.</li> <li>- Assisted BMDS Programs in developing and implementing Anti-Tamper detection and response technologies to mitigate risk.</li> <li>- Evaluated engineering and manufacturing maturity of BMDS elements, systems, and components.</li> <li>- Assessed and reported readiness of MDA development efforts for transition to production.</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>- Develop and implement anti-tamper approaches to enable international fielding, support coalition warfare, and extend the effective operational life of the BMDS.</li> <li>- Assist BMDS Programs in developing and implementing Anti-Tamper detection and response technologies to mitigate risk.</li> <li>- Monitor application of Engineering and Manufacturing Readiness Levels (EMRLs) to evaluate engineering and manufacturing maturity of BMDS elements, systems, and components.</li> <li>- Assess and report readiness of MDA development efforts for transition to production.</li> </ul> <p><b>FY 2017 Plans:</b></p>		-	-	-	

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4		<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs		<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<ul style="list-style-type: none"> <li>- Develop anti-tamper approaches to enable international fielding, support coalition warfare, and extend the effective operational life of the BMDS.</li> <li>- Engage and support the Services in understanding and transitioning BMDS Element Anti-Tamper activities.</li> <li>- Participate in Element reviews to assess proposed Anti-Tamper solutions and assist programs in developing and implementing Anti-Tamper detection and response technologies to mitigate risk.</li> <li>- Monitor application of EMRLs to evaluate engineering and manufacturing maturity of BMDS elements, systems, and components.</li> <li>- Assess and report readiness of MDA development efforts for transition to production.</li> </ul>				
<p><b>Title:</b> System-Level Verification and Assessment</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> The activity determines assessment requirements, identifies opportunities for data collection, and uses data obtained during BMDS ground and flight tests and analysis events to anchor models and simulation, verify performance, and provide technical assessments of BMDS capabilities. This effort also provides subject matter expertise to support high priority BMDS studies and reviews.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Provided technical assessments of the BMD System performance with the addition of THAAD, Patriot Post Deployment Build, AN/TPY-2, Aegis BMD, Cobra Dan, Sea-Based X-Band radar, and GMD Fire Control upgrades to the Operational Capacity Baseline (OCB).</li> <li>- Assessed the technical capability of Aegis BMD, AN/TPY-2, and C2BMC components to defend Europe, in support of the December 2015 European Phased Adaptive Approach Phase 2 Technical Capability Declaration.</li> <li>-- Conducted an Assessment Requirements Review with EPAA Phase 2 stakeholders to ensure that the testing and assessment objectives satisfied the EPAA Phase 2 TCD.</li> <li>-- Conducted, developed, and coordinated assessment execution plans to analyze test results.</li> <li>-- Synthesized test-level analysis to assess performance across the areas of system engagement, system acquisition / tracking / discrimination, and system integration.</li> <li>-- Coordinated the technical assessment with Element / Component program offices and Warfighting stakeholders.</li> <li>- Developed, tested and implemented a process to verify the BMDS information exchange requirements and provide comprehensive evidence that the BMD system represents its conceptual design and meets technical specifications.</li> <li>- Conducted non-advocate assessments of BMDS capabilities and limitations prior to capability delivery decisions to determine fielding readiness (including Defense of the Homeland, Defense of Israel and Theater/Regional BMD)</li> <li>- Conducted extensive analysis of data collected in BMD test events (digital, hardware-in-the-loop, and flight test), instrumental to understanding BMD operations and performance</li> <li>- Identified mitigation approaches for system performance issues uncovered during the course of analysis and assessment</li> </ul>		14.208 -	14.686 -	15.196 -

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / <i>BMD Enabling Programs</i>	<b>Project (Number/Name)</b> MD24 / <i>System Engineering &amp; Integration</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<ul style="list-style-type: none"> <li>- Conducted non-advocate assessments of BMDS capabilities and limitations prior to capability delivery decisions to determine fielding readiness (including Defense of Homeland and Defense of Europe)</li> <li>- Analyzed Test Event Data As Part of Assessment Process and Reported Key Observations at GTI-06 Part 1 and GTD-06 Part 1 Mission Data Reviews (MDRs) and FTG-06b and GTI-04e Part 2 (Strategic and Theater) Executive Mission Data Reviews (EMDRs)</li> <li>- Collaborated across DE on technical assessments in support of Operational Capacity Baseline board decisions</li> <li>- Led the Risk Assessment Working Group for the Homeland Defense AoA and Sensors AoA</li> <li>- Performed independent studies and analyses, including TPY-2 Acquisition Performance and Search Fence Comparison, Inert GBI Third Stage Analysis, and Trailing EKV and Post Intercept Debris Study</li> <li>- Monitored development and recommended improvements to the digital simulation enterprise based on an evaluation of the validity of Component, Element and System-level models (and frameworks) and participation in performance assessment activities and digital Modeling and Simulation events.</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>- Define requirements to assess current planned BMDS capabilities and emerging capabilities, such as new sensors, and map requirements to data collection venues (i.e., ground tests, flight tests, exercises).</li> <li>-- Evaluate current Modeling &amp; Simulation (M&amp;S) capability to address assessment requirements for new capabilities, and provide recommendations for new or improved M&amp;S.</li> <li>- Conduct extensive analysis of data collected in BMDS ground and flight test events, instrumental to understanding BMD operations and performance and anchoring models and simulations.</li> <li>- Identify mitigation approaches for system performance issues uncovered during the course of analysis and assessment.</li> <li>- Monitor development and recommend improvements to the simulation enterprise based on an evaluation of the validity of Component, Element and System-level models (and frameworks) and participation in assessment activities and Modeling and Simulation events.</li> <li>- Conduct assessments of BMDS capabilities and limitations prior to capability delivery decisions to determine fielding readiness (including Homeland Defense improvements and European Phased Adaptive Approach (EPAA) Phases).</li> <li>- Produce independent assessments of each Capability Delivery for THAAD, PATRIOT, Aegis BMD, AN/TPY-2 and C2BMC to support determination of fielding readiness for EPAA capabilities.</li> <li>- Perform non-advocate analyses and assessments for MDA Leadership, including investment prioritization, system architecture studies, design reviews, and failure investigations.</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Develop and manage assessment requirements for EPAA Phase 3, Redesigned Kill Vehicle (RKV), Long Range Discrimination Radar (LRDR), and Enhanced Aegis BMD Engage on Remote capabilities.</li> <li>-- Map assessment requirements to data collection venues (i.e., ground tests, flight tests, and exercises).</li> </ul>			

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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<ul style="list-style-type: none"> <li>-- Evaluate current M&amp;S capability to address assessment requirements, and provide recommendations for new or improved M&amp;S.</li> <li>- Maintain and update the Integrated Master Assessment Plan (IMAP).</li> <li>- Conduct extensive analysis of data collected in BMDS ground and flight test events, instrumental to understanding BMD operations and performance and anchoring models and simulations.</li> <li>- Identify mitigation approaches for system performance issues uncovered during the course of analysis and assessment.</li> <li>- Monitor development and recommend improvements to the simulation enterprise based on an evaluation of the validity of Component, Element and System-level models (and frameworks) and participation in assessment activities and Modeling and Simulation events.</li> <li>- Conduct assessments of BMD System capabilities and limitations prior to capability delivery decisions (including Enhanced Homeland Defense and EPAA Phase 3).</li> <li>- Produce independent assessments of each Capability Delivery for THAAD, PATRIOT, Aegis BMD, AN/TPY-2 and C2BMC to support determination of fielding readiness for EPAA capabilities.</li> <li>- Verify BMDS performance, and produce BMDS verification status reports.</li> <li>- Maintain M&amp;S Verification, Validation and Accreditation (VV&amp;A) database, and verification data for BMD System Specification Change Notices.</li> <li>- Develop, maintain, and update the M&amp;S VV&amp;A tool kit.</li> <li>- Provide recommendations for improving assessment confidence, including M&amp;S and testing issue resolutions.</li> </ul>				
<p><b>Title:</b> Knowledge Centers</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> Knowledge Centers serve as independent technical advisors to BMDS program offices in the C2BMC, Interceptor, Space, and Sensor areas to support development of technical approaches and improve reliability.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>-Provided FFRDC and UARC reach-back capability for Element program managers:               <ul style="list-style-type: none"> <li>-- Supported BMDS and Element Independent Review Teams</li> <li>-- Identified and provided recommendations to mitigate technical risks: incorporated out-of-the-box concepts for Risk Mitigation and Reduction</li> <li>-- Provided independent technical analysis to support Knowledge Point definitions, system and element performance assessments, and risk management</li> <li>-- Provided subject matter expertise for Mission Assurance assessments, Failure Review Boards and Failure Investigation teams</li> <li>-- Conducted assessments of emerging technologies, including focal plane array development, radiation-hardened components, and improvements to modeling and simulation.</li> </ul> </li> </ul> <p><b>FY 2016 Plans:</b></p>		11.457 -	14.252 -	14.142 -

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016		
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<ul style="list-style-type: none"> <li>- Provide subject matter expertise, to include reach-back capability as needed (Federally Funded Research and Development Centers and University Affiliated Research Centers) for Element program managers:                             <ul style="list-style-type: none"> <li>-- Support BMDS and Element Independent Review Teams</li> <li>-- Identify and provide recommendations to mitigate technical risks: incorporate out-of-the-box concepts for Risk Mitigation and Reduction</li> <li>-- Promote knowledge sharing from external technical sources to MDA</li> <li>-- Provide analysis and support for mission assurance assessments, Failure Review Boards and Failure Investigation teams.</li> </ul> </li> <li>- Provide independent technical analysis:                             <ul style="list-style-type: none"> <li>-- Support Knowledge Point definition for new programs (i.e., LRDR, RKV)</li> <li>-- Continue to provide system and element performance assessments for BMDS programs.</li> </ul> </li> <li>- Conduct assessments of emerging technologies as required.</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Provide FFRDC and UARC subject matter expertise, to include reach-back capability as needed), for Element program managers:                             <ul style="list-style-type: none"> <li>-- Provide Subject Matter Expertise and analytical support for Independent Review Teams, mission assurance assessments, Failure Review Boards and Failure Investigation Teams</li> <li>-- Identify and provide recommendations to mitigate technical risks, including innovative and unconventional approaches</li> <li>-- Promote knowledge sharing between external technical sources and MDA.</li> </ul> </li> <li>- Perform independent technical assessments of critical BMDS and Element program issues:                             <ul style="list-style-type: none"> <li>-- Define element knowledge points (KPs), establish closure criteria, and provide closure recommendations</li> <li>-- Continue to provide BMD System and Element performance assessments.</li> </ul> </li> <li>- Conduct assessments of emerging technologies as required.</li> </ul>				
<p><b>Title:</b> Risk Management</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> The Risk Management task identifies BMDS element and component technical risks, and tracks status and risk mitigation progress.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Convened and chaired Risk Management Working Group.</li> <li>- Executed the risk management and mission readiness working group process.</li> <li>- Established and maintained a risk database using the Failure Reporting and Corrective Action System (FRACAS).</li> <li>- Reviewed and approved program element risks, on quarterly basis.</li> </ul> <p><b>FY 2016 Plans:</b></p>		5.704	7.272	7.619
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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4		<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs		<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<ul style="list-style-type: none"> <li>- Convene and chair Risk Management Working Group.</li> <li>- Execute the risk management and mission readiness working group process.</li> <li>- Maintain a risk database using the Failure Reporting and Corrective Action System (FRACAS).</li> <li>- Review and approve program element risks, on quarterly basis.</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Convene and chair Risk Management Working Group.</li> <li>- Execute the risk management and mission readiness working group process.</li> <li>- Maintain a risk database using the Failure Reporting and Corrective Action System.</li> <li>- Review and approve program element risks, on quarterly basis.</li> </ul>				
<p><b>Title:</b> Manufacturing and Producibility</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> This activity supports a system-level manufacturing and producibility team to address materials, key component, and subsystem design and development to reduce cycle time, part count, and risk. This activity also supports a system-level reliability team to reduce risk of test failures and performance shortcomings and drive reliability into system and component designs.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Assessed the effectiveness of reliability programs for each MDA Product (Radar, Launcher, Missile/Interceptor, etc.) to achieve/sustain required reliability.</li> <li>- Identified failure trends/modes</li> <li>-- Evaluated impact on the Probability of Mission Success</li> <li>-- Evaluated Return on Investment (ROI) from implementing corrective actions.</li> <li>- Reviewed the Stockpile Reliability Programs for all MDA Missiles/Interceptors for effectiveness, and identified opportunities for efficiencies by sharing test resources or test results/analysis for common/comparable components.</li> <li>- Implemented supply chain risk identification and mitigation tracking system across the BMDS.</li> <li>- Conducted deep dive into critical component supply base.</li> <li>- Utilized tracking system to mitigate manufacturing supply issues with critical components.</li> <li>- Supported the development of a cost-effective and producible Redesigned Kill Vehicle (RKV).</li> </ul> <p><b>FY 2016 Plans:</b></p> <p>Manufacturing and Producibility:</p> <ul style="list-style-type: none"> <li>- Continue Implementation of supply chain risk identification and mitigation tracking system across the BMDS.</li> <li>- Conduct assessment into critical component supply base.</li> <li>- Conduct technical assessments of critical manufacturing technologies and collaborate investment strategies with national security space components.</li> </ul>		3.955	4.441	4.662
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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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<ul style="list-style-type: none"> <li>- Utilize tracking system to mitigate manufacturing supply issues with critical components.</li> <li>Reliability:             <ul style="list-style-type: none"> <li>- Assess the effectiveness of reliability programs for each MDA Product (Radar, Launcher, Missile/Interceptor, etc.) to achieve/sustain required reliability.</li> <li>- Provide Reliability Analysis In Support Of Risk and Mission Success Assessments For BMDS Flight Test.</li> <li>- Identify failure trends/modes</li> <li>-- Evaluate impact on the Probability of Mission Success</li> <li>-- Evaluate Return on Investment (ROI) from implementing corrective actions.</li> <li>- Work with Logistics Support to develop MDA Reliability and Logistic Policies/Plans that are synergistic and promote an integrated Sustainability effort within the Elements.</li> <li>- Ensure that BMDS products have achieved the required maturity in RAM to support the transition from MDA to the appropriate service organization.</li> </ul> </li> <li><b>FY 2017 Plans:</b></li> <li>Manufacturing and Producibility:             <ul style="list-style-type: none"> <li>- Assess BMDS industrial base and determine critical manufacturing technologies</li> <li>-- Conduct assessments of critical component supply base and update critical technologies database</li> <li>-- Collaborate with national security space components on investment strategies for critical technologies</li> <li>-- Develop engineering management tool to characterize industrial base risks.</li> <li>- Utilize tracking system to mitigate manufacturing supply issues for critical components.</li> <li>- Continue Implementation of supply chain risk identification and mitigation tracking system across the BMDS</li> </ul> </li> <li>Reliability:             <ul style="list-style-type: none"> <li>- Assess the effectiveness of reliability programs for each MDA Product (Radar, Launcher, Missile/Interceptor, etc.) to achieve/sustain required reliability.</li> <li>- Perform reliability, composite risk, and probability of mission success assessments for flight tests.</li> <li>- Identify failure trends/modes</li> <li>-- Evaluate impact on the Probability of Mission Success</li> <li>-- Evaluate Return on Investment from implementing corrective actions</li> <li>-- Provide element/program scorecard data to support reliability evaluations/assessments.</li> <li>- Work with Logistics Support to develop MDA Reliability and Logistic Policies/Plans that promote an integrated Sustainability effort within the Elements.</li> <li>- Ensure that BMDS products have achieved the required maturity in Reliability, Availability, and Maintainability (RAM) to support the transition from MDA to the appropriate service organization.</li> <li>- Provide updates to MDA RAM policy and guidance and provide technical expertise/reach back support.</li> </ul> </li> </ul>			
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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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- Provide RAM expertise where proficiency is not maintained within Element Program Offices.			
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<b>Title:</b> Discrimination	27.621	28.955	18.754
<b>Articles:</b>	-	-	-

**Description:** The discrimination improvement effort will develop and field integrated Element capabilities to improve BMD System ability to identify lethal and non-lethal objects. SE&I will perform BMDS performance analysis and requirements engineering activities to specify the BMDS requirements and interfaces to achieve the improved capability. For Mid-term and Far-term SE&I will establish performance goals for the technology development phase; develop functional, performance, and interface requirements to address the Mid-term and Far-term threat sets. SE&I will establish ground and flight test requirements for the Mid-term and Far-term phases, and generate threat data to support analysis and testing activities.

**FY 2015 Accomplishments:**

- Continued integration phase for Near-term discrimination improvements ground testing via GTI-06.
- Conducted planning, assessment, and specification work to keep pace with emerging threat.
- Continued development of software upgrades to C2BMC to report information from multiple sensors to improve identification of lethal targets to fire control.
- Continued development of AN/TPY-2 sensor and interface upgrades required to pass sensor generated features to C2BMC needed for improving identification of lethal targets.
- Conducted data collection and analysis for final assessment of discrimination technologies candidates planned for Mid-term delivery.
- Down selected development ready technologies for the Mid-term phase content.
- Completed preliminary BMDS functional and performance requirements for Mid-term discrimination improvements capability.

**FY 2016 Plans:**

- Complete integration phase for Near-Term ground testing via GTI-06.
- Monitor Near-term ground testing via GTI-06 and GTD-06 and analyze test results.
- Assess Near-Term capability readiness for fielding.
- Support Element Mid-Term discrimination improvement requirements definition in support of Element design refinement.
- Complete system testing environment Objective Simulation Framework updates for Mid-term capabilities.
- Assist in development of data collection requirements for of Mid-Term capability flight tests.
- Define & develop Far-term threat models for engineering analysis, requirements development, capabilities development, and test and verification.
- Plan, manage, and conduct trades and analysis tasks across the elements for Far-term discrimination improvements and countermeasures mitigation technology application to the Far-term threat.

**FY 2017 Plans:**

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016		
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>FY 17 decrease reflects completion of Near-term discrimination improvements testing and assessment activities, and completion of the Mid-term discrimination improvement requirements definition and performance specification development activities.</p> <ul style="list-style-type: none"> <li>- Complete Mid-term discrimination improvements systems engineering work and integrate element level design solutions</li> <li>-- Complete analysis to support test planning and assessment of the integrated capability</li> <li>-- Perform cross element and system level integration of Mid-term discrimination improvements design solutions.</li> <li>- Conduct Far-term discrimination and countermeasure mitigation capability development</li> <li>-- Define Far-term decision logic improvement solutions which are mature enough to initiate preliminary design</li> <li>-- Develop definition of fire control/weapon handover improvements and initiate preliminary design</li> <li>-- Execute system requirements review for radar electronic protection improvements.</li> </ul>				
<p><b>Title:</b> Integrated Air and Missile Defense (IAMD)</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> The IAMD effort provides a consistent, disciplined systems engineering process using a joint service systems engineering team to develop the technical requirements necessary to support integration of joint service IAMD systems, implementing capabilities required by the Geographic Combatant Commands. This effort includes systems engineering analysis, development of technical and interface control requirements and documents, definition of candidate Joint IAMD increments, and configuration control across the joint systems. The initial work will provide improved performance such as an improved air picture to enable engagement coordination decision making, increase battlespace, and improve track continuity. Follow-on increments will address critical joint Command and Control and interoperability needs such as integrated fire control. This effort was previously funded by the Air Force and transitioned to MDA in FY 2015.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Led IAMD engineering and integration efforts, including interface definition and control and technical requirements allocation across the Joint IAMD Service systems.</li> <li>- Analyzed technical options using modeling &amp; simulations under operationally stressing threat conditions to improve the air picture with sufficient quality to support coordinated decision making across a joint warfighting environment.</li> <li>- Assessed cost, schedule and risk impacts of implementing the options on selected air defense assets across the joint services.</li> <li>- Continued to develop an IAMD joint system architecture to maintain consistency with JIAMDO operational architecture.</li> <li>- Supported JIAMDO development of IAMD Increment 1 Operational Benefits Assessment.</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue analysis of technical options for improving the air picture to support coordinated decision making in a joint warfighting environment.</li> <li>-- Support JIAMDO in completing the IAMD Increment 1 Operational Benefits Assessment</li> <li>-- Develop initial requirements document for the first Joint IAMD capability increment (improved air picture)</li> </ul>		12.896 -	15.200 -	15.989 -

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**Exhibit R-2A, RDT&E Project Justification:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	FY 2015	FY 2016	FY 2017
-- Expand the IAMD Modeling and Simulation capabilities developed in FY14 and FY15 to support derivation of more detailed Joint Track Management Control (JTMC) requirements and evaluate performance of the selected technical approach for achieving the JROC-approved JTMC operational requirements to include the capability to support advanced engagement coordination across the air domain. -- Continue to develop the IAMD joint system architecture which is consistent with the JROC approved IAMD operational architecture. -- Define engineering tasks for Increment 2 capability.			
<b><i>FY 2017 Plans:</i></b> - Maintain and deliver updates to an IAMD system of systems level requirements specification, documenting the technical requirements for allocation to the affected air defense programs of record. - Conduct Joint IAMD System Requirements Reviews with affected service systems to incorporate IAMD Increment 1 capability. - Execute the joint system engineering tasks for IAMD Increment 2 capability. - Expand IAMD Modeling and Simulation capabilities to support derivation of more detailed Joint Track Management Control (JTMC) requirements for Increment 1 capability and to support IAMD Increment 2 concept development defined in FY16 to address critical joint Command and Control and interoperability needs. - Develop an IAMD joint system architecture for IAMD Increment 2 capability that is consistent with the JROC approved IAMD operational architecture.			
<b>Accomplishments/Planned Programs Subtotals</b>	126.625	141.368	133.166

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

<b>Line Item</b>	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 0603179C: <i>Advanced C4ISR</i>	13.061	9.876	3.626	-	3.626	0.000	0.000	0.000	0.000	0	26.563
• 0603881C: <i>Ballistic Missile</i>	161.298	212.230	206.834	-	206.834	231.105	197.018	250.227	260.613	Continuing	Continuing
<i>Defense Terminal Defense Segment</i>											
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	863.965	1,269.913	862.080	-	862.080	701.311	585.079	600.710	535.614	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	260.347	228.392	230.077	-	230.077	144.893	141.815	171.644	158.421	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	761.646	830.647	959.066	-	959.066	841.738	700.596	592.940	528.744	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and</i>	420.516	429.853	439.617	-	439.617	413.198	432.763	454.601	462.065	Continuing	Continuing

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**Exhibit R-2A, RDT&E Project Justification:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
<i>Control, Battle Management &amp; Communication</i>											
• 0603914C: <i>Ballistic Missile Defense Test</i>	354.414	281.740	293.441	-	293.441	337.537	322.334	346.134	351.933	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

In order to optimize the performance of the BMDS, MDA leverages the nation's engineering Centers of Excellence at government agencies and Military Services, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and industry. The executing agents utilize various contracting strategies in a flexible manner to maximize their contribution to the BMDS. Products and Services will be acquired by competitive means to the extent that is possible and practical.

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-	-	-	-	-	-	-	-	-	-	-	-

**Remarks**  
N/A

<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Future Concepts and Planning - Future Concepts - Architecture CSS	C/CPFF	Parsons : AL	1.249	2.372		2.994	Oct 2015	3.371	Nov 2016	-		3.371	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - Architecture Support	Various	Various : VA, AL	1.590	1.307		1.513	Oct 2015	1.109	Nov 2016	-		1.109	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - CSS	C/CPFF	MiDAESS / TEAMS : AL	19.637	0.791		0.856	Oct 2015	1.498	Nov 2016	-		1.498	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 1	MIPR	SNL : CA	1.771	0.334		0.377	Oct 2015	0.385	Nov 2016	-		0.385	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 3	MIPR	MIT/LL : MA	0.328	0.671		1.132	Oct 2015	0.385	Nov 2016	-		0.385	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 4	MIPR	JHU/APL : MD, VA	3.140	0.558		0.755	Oct 2015	0.790	Nov 2016	-		0.790	Continuing	Continuing	Continuing
Future Concepts and Planning - Future	MIPR	MITRE : VA	1.094	0.501		0.387	Oct 2015	0.462	Nov 2016	-		0.462	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency												Date: February 2016			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
0400 / 4						PE 0603890C / BMD Enabling Programs				MD24 / System Engineering & Integration					
Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Concepts - FFRDC / UARC 5															
Future Concepts and Planning - Future Concepts - FFRDC / UARC 6	MIPR	Aerospace : CA	1.166	0.719		0.453	Oct 2015	0.385	Nov 2016	-		0.385	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - ICT	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	0.000	0.000		0.000		0.450	Nov 2016	-		0.450	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - Industry	C/CPAF	Boeing : AL	23.805	2.184		2.114	Oct 2015	1.078	Nov 2016	-		1.078	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - Support	Allot	MDA : VA / AL	3.108	1.660		2.704	Oct 2015	2.573	Oct 2016	-		2.573	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Lethality Spt - FFRDC/ UARC 4	MIPR	SNL : CA	0.350	0.334		0.357	Oct 2015	0.364	Nov 2016	-		0.364	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Lethality Spt - CSS	C/CPAF	Corvid : NC	0.000	0.715		0.744	Nov 2015	0.758	Nov 2016	-		0.758	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - CSS 1	C/CPFF	MiDAESS / TEAMS : AL	28.682	1.956		3.509	Oct 2015	1.886	Nov 2016	-		1.886	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - CSS 3	C/CPFF	MEI : AL	0.275	0.325		0.281	Oct 2015	0.286	Nov 2016	-		0.286	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - FFRDC/UARC 1	MIPR	LLNL : CA	0.600	0.384		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - FFRDC/UARC 2	MIPR	MITRE : VA	0.000	0.000		0.555	Oct 2015	0.762	Nov 2016	-		0.762	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - HAENS Spt	Various	Various : Various	0.279	0.235		0.460	Oct 2015	0.469	Nov 2016	-		0.469	Continuing	Continuing	Continuing

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Requirements and Design - Reqts & Design - ICT	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	0.000	0.000		0.000		1.300	Nov 2016	-		1.300	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Industry	C/CPAF	Boeing : AL	72.328	13.890		11.128	Oct 2015	9.486	Nov 2016	-		9.486	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - MDA	Allot	MDA : AL, VA	18.468	6.603		9.219	Nov 2015	11.917	Oct 2016	-		11.917	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - OGA	MIPR	AMRDEC : AL	1.950	1.499		2.138	Oct 2015	1.872	Nov 2016	-		1.872	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - ICT	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	0.000	0.232		0.793	Oct 2015	0.270	Nov 2016	-		0.270	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - CSS	C/CPFF	MiDAESS / TEAMS : AL	22.910	3.860		4.590	Oct 2015	4.682	Nov 2016	-		4.682	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - CSS 2	C/CPFF	SAIC : VA, AL	5.243	4.423		4.121	Oct 2015	4.556	Nov 2016	-		4.556	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - MDA	Various	MDA : VA, AL	2.684	0.228		0.000		0.357	Nov 2016	-		0.357	Continuing	Continuing	Continuing
Anti-Tamper & Engineering Manufacturing Readiness Level Development - AT & EMRL - Anti-Tamper Support	MIPR	NSWC Crane : IN	5.854	0.205		0.209	Nov 2015	0.213	Nov 2016	-		0.213	Continuing	Continuing	Continuing
Anti-Tamper & Engineering Manufacturing Readiness Level Development - AT & EMRL - CSS 2	C/CPAF	CSC - MiDAESS : AL	2.001	0.213		0.000		0.000		-		0.000	0	2.214	0

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Anti-Tamper & Engineering Manufacturing Readiness Level Development - AT & EMRL - MDA	Allot	MDA : AL, VA	7.009	4.130		4.859	Oct 2015	4.927	Oct 2016	-		4.927	Continuing	Continuing	Continuing
Anti-Tamper & Engineering Manufacturing Readiness Level Development - OGA Support	MIPR	AMRDEC : AL	0.000	0.455		0.314	Nov 2015	0.213	Nov 2016	-		0.213	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - CSS	C/CPFF	MiDAESS / TEAMS : AL	2.809	1.132		1.424	Nov 2015	1.044	Nov 2016	-		1.044	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - CSS 2	C/CPFF	Parsons : AL, CO	0.000	0.000		0.000		2.046	Nov 2016	-		2.046	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC 1	MIPR	Aerospace : CA	13.366	1.930		1.495	Oct 2015	1.433	Nov 2016	-		1.433	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC 2	MIPR	JHU/APL : MD, VA	7.986	1.116		0.894	Oct 2015	0.962	Nov 2016	-		0.962	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC 6	MIPR	MIT/LL : MA	15.929	0.737		1.860	Oct 2015	1.372	Nov 2016	-		1.372	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC 7	MIPR	MITRE : VA	11.761	2.581		2.225	Oct 2015	1.599	Nov 2016	-		1.599	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - ICT	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	0.000	0.000		0.993	Oct 2015	1.200	Nov 2016	-		1.200	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - MDA	Allot	MDA : VA, AL	5.716	0.386		0.547	Oct 2015	0.619	Oct 2016	-		0.619	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - OGA	MIPR	AMRDEC : AL	4.121	2.577		2.130	Oct 2015	1.043	Nov 2016	-		1.043	Continuing	Continuing	Continuing

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System-Level Verification and Assessment - V&A Industry Support	C/CPFF	Boeing : AL	3.237	3.749		3.118	Oct 2015	3.878	Nov 2016	-		3.878	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 1	MIPR	Aerospace : CA	8.552	1.474		1.438	Oct 2015	1.716	Nov 2016	-		1.716	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 2	MIPR	MIT/LL : MA	4.826	0.738		1.453	Oct 2015	0.983	Nov 2016	-		0.983	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 3	FFRDC	MITRE : VA	4.213	1.489		1.366	Oct 2015	0.998	Nov 2016	-		0.998	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 4	FFRDC	JHU/APL : VA	4.605	0.796		1.077	Oct 2015	0.657	Nov 2016	-		0.657	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 7	MIPR	GTRI : GA	3.939	0.000		0.000		0.347	Nov 2016	-		0.347	0	4.286	0
Knowledge Centers - KC - ICT	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	0.000	0.432		0.900	Oct 2015	1.700	Nov 2016	-		1.700	Continuing	Continuing	Continuing
Knowledge Centers - KC - MDA	Various	MDA : AL, VA	12.296	5.312		6.443	Oct 2015	6.125	Nov 2016	-		6.125	Continuing	Continuing	Continuing
Knowledge Centers - KC - Various	MIPR	Various : Various	1.232	1.216		1.575	Oct 2015	1.616	Nov 2016	-		1.616	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - Analysis	Various	MDA : VA, AL	3.726	3.767		5.238	Oct 2015	5.892	Oct 2016	-		5.892	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - Analysis Spt	Various	Various : Various	1.129	0.720		0.864	Nov 2015	0.250	Nov 2016	-		0.250	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - FFRDC/UARC	MIPR	MITRE : VA	3.085	0.785		0.377	Oct 2015	0.577	Nov 2016	-		0.577	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - ICT	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	0.000	0.432		0.793	Oct 2015	0.900	Nov 2016	-		0.900	Continuing	Continuing	Continuing
Manufacturing and Producibility - Core Standards	C/CPFF	Boeing : AL	0.000	1.109		1.091	Nov 2015	1.113	Nov 2016	-		1.113	Continuing	Continuing	Continuing

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Manufacturing and Producibility - Mfg and Producibility	Allot	MDA : AL	0.632	0.655		0.645	Oct 2015	0.491	Oct 2016	-		0.491	Continuing	Continuing	Continuing
Manufacturing and Producibility - Mfg and Producibility - CSS	C/CPFF	CSC : AL	0.351	0.000		0.000		0.000		-		0.000	0	0.351	0
Manufacturing and Producibility - Mfg and Producibility - ICT	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	0.000	0.000		0.500	Oct 2015	0.950	Nov 2016	-		0.950	Continuing	Continuing	Continuing
Manufacturing and Producibility - Mfg and Producibility - OGA Support	MIPR	AMRDEC : AL	1.517	2.191		2.205	Nov 2015	2.108	Nov 2016	-		2.108	Continuing	Continuing	Continuing
Discrimination - Aegis BMD Algorithm Development, Modeling & Simulation, Performance Analysis (FFRDC)	MIPR	MIT / LL : MA	0.650	0.000		0.000		0.000		-		0.000	0	0.650	0
Discrimination - Aegis BMD Algorithm Development, Modeling & Simulation, Performance Analysis (Prime)	SS/CPFF	Lockheed Martin : NJ	2.415	0.000		0.000		0.000		-		0.000	0	2.415	0
Discrimination - Aegis BMD Algorithm Development, Modeling & Simulation, Performance Analysis (UARC)	SS/CPFF	JHU / APL : MD	0.735	0.000		0.000		0.000		-		0.000	0	0.735	0
Discrimination - DIHD - BMD 4.0.3 Dev.	MIPR	Various : MD, VA, CA	0.663	0.000		0.000		0.000		-		0.000	0	0.663	0
Discrimination - DIHD - BMD 4.0.3 Dev. (PRIME)	SS/CPFF	Lockheed Martin : NJ	2.996	0.000		0.000		0.000		-		0.000	0	2.996	0
Discrimination - Discrimination - CSS	C/CPFF	MiDAESS / TEAMS : AL	2.600	5.278		4.860	Nov 2015	1.998	Nov 2016	-		1.998	Continuing	Continuing	Continuing

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Discrimination - Discrimination - ICT	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	0.000	0.000		0.000		2.006	Nov 2016	-		2.006	Continuing	Continuing	Continuing
Discrimination - Discrimination - Industry	C/CPAF	Boeing : AL, VA	0.000	8.567		11.005	Nov 2015	2.000	Nov 2016	-		2.000	Continuing	Continuing	Continuing
Discrimination - Discrimination - Support	Allot	MDA : AL, VA	0.000	7.357		9.658	Nov 2015	8.400	Oct 2016	-		8.400	Continuing	Continuing	Continuing
Discrimination - Discrimination - Various	Various	Various : AL, VA	0.000	6.419		3.432	Nov 2015	4.350	Nov 2016	-		4.350	Continuing	Continuing	Continuing
Discrimination - Discrimination Improvement Homeland Defense (DIHD) Engineering	C/CPFF	Boeing : AL	7.412	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Discrimination - OGA Discrimination Improvement Homeland Defense (DIHD)	MIPR	SED : AL	0.690	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Discrimination - Prime Discrimination Improvement Homeland Defense (DIHD)	C/CPFF	Boeing : AL, AZ	9.652	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - FFRDC	Various	Various : AL, VA, MD	0.000	1.037		1.510	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - ICT	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	0.000	0.000		0.000		0.670	Nov 2016	-		0.670	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - OGA	MIPR	AMRDEC : AL	0.000	0.000		0.000		4.319	Nov 2016	-		4.319	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - Support	Various	MiDAESS / TEAMS : AL, VA, CO	0.000	1.109		2.282	Nov 2015	0.499	Nov 2016	-		0.499	Continuing	Continuing	Continuing

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Integrated Air and Missile Defense (IAMD) - IAMD - Various	MIPR	DoD Activities : Various	0.000	10.750		11.408	Nov 2015	10.501	Nov 2016	-		10.501	Continuing	Continuing	Continuing
<b>Subtotal</b>			368.362	126.625		141.368		133.166		-		133.166	-	-	-

**Remarks**  
The FY 17 decrease in discrimination funding reflects completion of Near-term discrimination improvements testing and assessment activities, and completion of the Mid-term discrimination improvement requirements definition and performance specification development activities.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

**Remarks**  
N/A

<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

**Remarks**  
N/A

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	368.362	126.625	141.368	133.166	-	133.166	-	-	-

**Remarks**  
Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ✦
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ✧

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
System/Subsystem Requirements Review - FY 2015	▲																											
Update to Ballistic Missile Defense System Description Document (BMD SDD) 15.1 - FY 2015	▲																											
Update to Ballistic Missile Defense System Description Document (BMD SDD) 15.2 - FY 2015	▲																											
Ballistic Missile Defense System Specification (BMD SS) 15.1 - FY 2015	▲																											
Adversary Data Package (ADP) - FY 2015	▲																											
Element Design Reviews - FY 2015	✦	✦	✦	✦																								
Ballistic Missile Defense System Specification (BMD SS) 15.2 - FY 2015		▲																										
Update Master Integration Plan (MIP) - FY 2015		▲																										
Ballistic Missile Defense System Engineering Review - FY 2015			▲																									
Ballistic Missile Defense System Specification (BMD SS) 15.3 - FY 2015			▲																									
Update to Ballistic Missile Defense System Description Document (BMD SDD) 15.3 - FY 2015			▲																									
Provide Independent Assessments to MDA - FY 2015				▲																								
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2015				▲																								
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2015				▲																								
Adversary Data Package (ADP) - FY 2016					△																							
Element Design Reviews - FY 2016					△																							
System Engineering Plan (SEP) Update - FY 2016					△																							
Ballistic Missile Defense System (BMDS) Requirements Review					△																							

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2017 Missile Defense Agency</b>		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration

Significant Event Complete ▲      Milestone Decision Complete ★      Element Test Complete ◆      System Level Test Complete ●      Complete Activity +  
 Significant Event Planned △      Milestone Decision Planned ☆      Element Test Planned ◇      System Level Test Planned ○      Planned Activity +

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Ballistic Missile Defense System Engineering Review - FY 2016							△																					
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2016							△																					
Update Achievable Capabilities List - FY 2016							△																					
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2016							△																					
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2016								△																				
Provide Independent Assessments to MDA - FY 2016								△																				
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2016								△																				
Update Master Integration Plan (MIP) - FY 2016								△																				
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY 2017									△																			
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2017									△																			
Ballistic Missile Defense System Specification (BMD SS) - FY 2017										△																		
Element Design Reviews - FY 2017										△																		
Ballistic Missile Defense System Engineering Review - FY 2017											△																	
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2017											△																	
Update Achievable Capabilities List - FY 2017												△																
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2017													△															
Provide Independent Assessments to MDA - FY 2017														△														
Update Master Integration Plan (MIP) - FY 2017															△													
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2018																△												
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2018																	△											
Element Design Reviews - FY 2018																		△										

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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Significant Event Complete ▲      Milestone Decision Complete ★      Element Test Complete ◆      System Level Test Complete ●      Complete Activity +  
 Significant Event Planned △      Milestone Decision Planned ☆      Element Test Planned ◇      System Level Test Planned ○      Planned Activity ✦

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Ballistic Missile Defense System Engineering Review - FY 2018														△														
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2018														△														
Update Achievable Capabilities List - FY 2018														△														
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2018														△														
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2018															△													
Provide Independent Assessments to MDA - FY 2018															△													
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2018															△													
Update Master Integration Plan (MIP) - FY 2018															△													
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2019																△												
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY 2019																△												
Deliver Assessment for EPAA Phase 3 - FY 2019																△												
Ballistic Missile Defense System Specification (BMD SS) - FY 2019																	△											
Element Design Reviews - FY 2019																		△										
System Engineering Plan (SEP) Update - FY 2019																		△										
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2019																			△									
Ballistic Missile Defense System Engineering Review - FY 2019																				△								
Update Achievable Capabilities List - FY 2019																					△							
Update Master Integration Plan (MIP) - FY 2019																						△						
Provide Independent Assessments to MDA - FY 2019																							△					
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2019																							△					
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2020																								△				

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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Significant Event Complete ▲      Milestone Decision Complete ★      Element Test Complete ◆      System Level Test Complete ●      Complete Activity +  
 Significant Event Planned △      Milestone Decision Planned ☆      Element Test Planned ◇      System Level Test Planned ○      Planned Activity ✦

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY 2020																				△									
System Engineering Plan (SEP) Update - FY 2020																					△								
Ballistic Missile Defense System Specification (BMD SS) - FY 2020																					△								
Ballistic Missile Defense System Engineering Review - FY 2020																						△							
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2020																						△							
Update Master Integration Plan (MIP) - FY 2020																							△						
Provide Independent Assessments to MDA - FY 2020																							△						
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2020																							△						
Update to BMD System Description Document (BMD SDD) FY 2021																								△					
System Engineering Plan (SEP) Update FY 2021																									△				
Ballistic Missile Defense System Specification (BMD SS) - FY 2021																										△			
Ballistic Missile Defense System Engineering Review - FY 2021																											△		
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2021																											△		
Update Master Integration Plan (MIP) - FY 2021																													△
Provide Independent Assessments to MDA - FY 2021																													△
Element/Component Characterization for Analysis (E/CCA) - 4Q FY 2021																													△

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
System/Subsystem Requirements Review - FY 2015	1	2015	1	2015
Update to Ballistic Missile Defense System Description Document (BMD SDD) 15.1 - FY 2015	1	2015	1	2015
Update to Ballistic Missile Defense System Description Document (BMD SDD) 15.2 - FY 2015	1	2015	1	2015
Ballistic Missile Defense System Specification (BMD SS) 15.1 - FY 2015	1	2015	1	2015
Adversary Data Package (ADP) - FY 2015	1	2015	1	2015
Element Design Reviews - FY 2015	1	2015	4	2015
Ballistic Missile Defense System Specification (BMD SS) 15.2 - FY 2015	2	2015	2	2015
Update Master Integration Plan (MIP) - FY 2015	2	2015	2	2015
Ballistic Missile Defense System Engineering Review - FY 2015	3	2015	3	2015
Ballistic Missile Defense System Specification (BMD SS) 15.3 - FY 2015	3	2015	3	2015
Update to Ballistic Missile Defense System Description Document (BMD SDD) 15.3 - FY 2015	3	2015	3	2015
Provide Independent Assessments to MDA - FY 2015	4	2015	4	2015
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2015	4	2015	4	2015
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2015	4	2015	4	2015
Adversary Data Package (ADP) - FY 2016	2	2016	2	2016
Element Design Reviews - FY 2016	2	2016	2	2016
System Engineering Plan (SEP) Update - FY 2016	2	2016	2	2016
Ballistic Missile Defense System (BMDS) Requirements Review	2	2016	2	2016
Ballistic Missile Defense System Engineering Review - FY 2016	3	2016	3	2016
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2016	3	2016	3	2016
Update Achievable Capabilities List - FY 2016	3	2016	3	2016

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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Events	Start		End	
	Quarter	Year	Quarter	Year
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2016	3	2016	3	2016
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2016	4	2016	4	2016
Provide Independent Assessments to MDA - FY 2016	4	2016	4	2016
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2016	4	2016	4	2016
Update Master Integration Plan (MIP) - FY 2016	4	2016	4	2016
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY 2017	1	2017	1	2017
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2017	1	2017	1	2017
Ballistic Missile Defense System Specification (BMD SS) - FY 2017	2	2017	2	2017
Element Design Reviews - FY 2017	2	2017	2	2017
Ballistic Missile Defense System Engineering Review - FY 2017	3	2017	3	2017
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2017	3	2017	3	2017
Update Achievable Capabilities List - FY 2017	3	2017	3	2017
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2017	4	2017	4	2017
Provide Independent Assessments to MDA - FY 2017	4	2017	4	2017
Update Master Integration Plan (MIP) - FY 2017	4	2017	4	2017
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2018	1	2018	1	2018
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2018	1	2018	1	2018
Element Design Reviews - FY 2018	2	2018	2	2018
Ballistic Missile Defense System Engineering Review - FY 2018	3	2018	3	2018
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2018	3	2018	3	2018
Update Achievable Capabilities List - FY 2018	3	2018	3	2018
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2018	3	2018	3	2018
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2018	4	2018	4	2018
Provide Independent Assessments to MDA - FY 2018	4	2018	4	2018
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2018	4	2018	4	2018

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD24 / System Engineering & Integration
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Events	Start		End	
	Quarter	Year	Quarter	Year
Update Master Integration Plan (MIP) - FY 2018	4	2018	4	2018
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2019	1	2019	1	2019
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY 2019	1	2019	1	2019
Deliver Assessment for EPAA Phase 3 – FY 2019	1	2019	1	2019
Ballistic Missile Defense System Specification (BMD SS) - FY 2019	2	2019	2	2019
Element Design Reviews - FY 2019	2	2019	2	2019
System Engineering Plan (SEP) Update - FY 2019	2	2019	2	2019
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2019	3	2019	3	2019
Ballistic Missile Defense System Engineering Review - FY 2019	3	2019	3	2019
Update Achievable Capabilities List - FY 2019	3	2019	3	2019
Update Master Integration Plan (MIP) - FY 2019	4	2019	4	2019
Provide Independent Assessments to MDA - FY 2019	4	2019	4	2019
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2019	4	2019	4	2019
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2020	1	2020	1	2020
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY 2020	1	2020	1	2020
System Engineering Plan (SEP) Update - FY 2020	2	2020	2	2020
Ballistic Missile Defense System Specification (BMD SS) - FY 2020	2	2020	2	2020
Ballistic Missile Defense System Engineering Review - FY 2020	3	2020	3	2020
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2020	3	2020	3	2020
Update Master Integration Plan (MIP) - FY 2020	4	2020	4	2020
Provide Independent Assessments to MDA - FY 2020	4	2020	4	2020
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2020	4	2020	4	2020
Update to BMD System Description Document (BMD SDD) FY 2021	1	2021	1	2021
System Engineering Plan (SEP) Update FY 2021	2	2021	2	2021
Ballistic Missile Defense System Specification (BMD SS) - FY 2021	2	2021	2	2021

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / <i>BMD Enabling Programs</i>	<b>Project (Number/Name)</b> MD24 / <i>System Engineering &amp; Integration</i>
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<b>Events</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
Ballistic Missile Defense System Engineering Review - FY 2021	3	2021	3	2021
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2021	3	2021	3	2021
Update Master Integration Plan (MIP) - FY 2021	4	2021	4	2021
Provide Independent Assessments to MDA - FY 2021	4	2021	4	2021
Element/Component Characterization for Analysis (E/CCA) - 4Q FY 2021	4	2021	4	2021

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs				<b>Project (Number/Name)</b> MT23 / Enabling - Test			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
MT23: <i>Enabling - Test</i>	-	32.792	16.611	17.449	-	17.449	25.501	26.040	24.704	25.077	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

FY 2017 increase keeps pace with projected FY 2017-FY 2021 Integrated Master Test Plan (IMTP) events, and reflects increase in pre- and post-mission System-level analyses, Modeling and Simulation (M&S) integration, and supporting validation and assessment activities required to support EPAA Phase 3 Technical Capability Declaration.

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

In the Enabling Test project, SE&I drives BMDS test planning, execution, and post-test analysis and assessment, providing critical data to prove that missile defense works as designed and quantify system performance. M&S provides the tools and framework required to prepare for and execute ground and flight tests, and perform post-test reconstructions.

Engineering studies and analyses enable the allocation of test requirements to individual test events, design of test architectures, definition of target requirements, and generation of appropriate scenarios for ground and flight tests to collect data for model validation and system verification. With the support of the Director of Operational Test and Evaluation (DOT&E), SE&I works with the Service Operational Test Agencies (OTA) to incorporate operational test requirements to ensure the incremental capability being transferred to the Warfighter will be operationally effective, suitable, and survivable. SE&I identifies and coordinates test objectives and ensures BMDS requirements are being met by the BMDS system under test. Systems Engineering plays a key role in BMDS test design and development by defining, allocating to test events, and tracking Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs), as documented in the IMTP. The CECs and EMEs include Key Test Points (KTPs) allocated to test events to ensure the events will collect data to confirm proper system operation. The data anchors system and element models and simulations, which will be used in all-digital simulations to characterize BMDS performance across the battle space, including areas where no live-fire-testing is performed. The digital M&S complement extensive flight tests and hardware-in-the-loop (HWIL) ground tests, to directly support fielding decisions and BMDS deployed operations.

SE&I ground test (GT) responsibilities include BMDS performance sensitivity analysis; scenario design, focused on the production of an optimized set of GT scenarios; risk reduction analysis to mitigate data collection risks supporting test objectives; GT architecture certification analysis supporting test readiness reviews; and analysis of event test results. SE&I flight test (FT) responsibilities include planning and analysis of FT pre-mission digital and HWIL scenarios focused on exploring BMDS Flight Test performance boundaries related to the day of flight test scenario while surfacing performance risk; analytical support for flight test CONOPS development and range safety analysis; mission analysis support during FTs; conducting extensive post-mission analysis; and developing event analysis reporting products. These products support senior leaders' decisions on BMDS development and evolution and underpin BMDS capability declarations that provide new capabilities to the Warfighter.

SE&I supports pre-mission predictions for system level flight tests using the test framework set up with HWIL and digital models of the BMDS configuration for each test. This provides confidence in readiness for flight test execution by predicting BMDS performance and exercising element interfaces. It also ensures the flight test will collect the required data to support system analysis and assessments and Element and System Post-Flight Reconstruction (SPFR) objectives. SPFRs use HWIL and

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**Exhibit R-2A, RDT&E Project Justification:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MT23 / Enabling - Test
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M&S to replicate the day of flight for the BMDS configuration, including the environmental conditions and target dynamics observed in the test. They increase confidence in the System and element M&S by anchoring the results to the real world event, with emphasis on the performance parameters allocated to the M&S.

Reliability, Availability and Maintainability data collected through BMDS test events increases confidence in the predicted performance of the BMDS. SE&I documents abnormal system behavior observed during System tests and alerts MDA to issues with test article reliability. SE&I leads test failure review boards, identifies data collection shortfalls, and reallocates objectives to future test events as needed until all required model validation data is collected. The Failure Reporting, Analysis, and Corrective Action System provides a framework to investigate test failures and anomalies and identify solutions that will ultimately improve BMDS performance and reliability.

The distinct capabilities of MDA's M&S systems and products provide the BMDS, the Warfighter, and the OTA with an evaluation capability for individual components and for the overall M&S system-of-systems. MDA validates and accredits system-level models and simulations by anchoring them to real-world events to support accurate and comprehensive assessments of the BMDS. M&S development activities focus on the model and simulation frameworks, BMDS Element models, and core truth modeling (e.g., threat, phenomenology, lethality, and environment). Quality M&S systems and products contribute to the success of the missile defense program and help prove BMDS technologies work.

MDA M&S System and product testing is based on the integrated, comprehensive, and phased test program outlined in MDA's IMTP. Within the construct of the IMTP, Element-unique M&S systems, subsystems, and components are tested as part of their respective development and integration, a necessary precursor to conducting BMD System-level M&S testing (e.g., integrated ground test, performance/technical assessment venues). Resources for the planning, design, execution and management of this testing are provided in accordance with the BMDS Test Policy, as listed in the most current version of the IMTP.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2015	FY 2016	FY 2017
<p><b>Title:</b> Engineering and Analysis</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> The Engineering and Analysis effort provides engineering support for planning and execution of BMDS ground and flight test events, to include defining test architectures, objectives, and assessment requirements and evaluation criteria, and M&amp;S pre- and post-test analysis support.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Transferred from other accomplishments beginning in FY 2015.</li> <li>Provided engineering support for planning, execution, and analysis of the test events listed in the Integrated Master Test Plan (IMTP):</li> <li>- Designed test architecture, defined target requirements, and generated appropriate scenarios for ground and flight tests.</li> <li>- Defined test objectives and assessment criteria for all System level test events to anchor models and simulations and address data collection requirements.</li> </ul>	<p>18.225</p> <p>-</p>	<p>16.611</p> <p>-</p>	<p>17.449</p> <p>-</p>

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MT23 / Enabling - Test
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<ul style="list-style-type: none"> <li>- Allocated and tracked Critical Engagement Condition (CEC) and Empirical Measurement Events (EME) data requirements and sufficiency.</li> <li>- Performed System-level and interoperability analysis.</li> <li>- Participated in major test reviews.</li> <li>- Generated BMDS test observations and coordinate associated BMDS Discrepancy Reports (BDR) within the Failure Reporting, Analysis, and Corrective Action System (FRACAS)</li> <li>- Produced the threat data required to enable BMDS ground tests, flight tests and performance assessment.</li> <li>- Utilized M&amp;S for pre-test assessment and post-test review, as well as M&amp;S updates.</li> <li>- Provided SE&amp;I test configuration management; risk assessment; and anomaly/deficiency review, assessment and closure to support data gathering for BMDS hardware/software reliability improvements.</li> <li>- Analyzed test results to identify shortfalls so that objectives can be reassigned to future events to provide required verification and model validation data.</li> <li>- Developed and documented long-range BMDS IMTP planning and integration strategies related to overarching BMDS analysis product integration.</li> <li>- Developed and provided capability upgrades to test analysis tools in concert with the BMDS evolution (e.g., Modular Analysis and Reporting Suite (MARS), Assessment Parameter EXtraction (APEX) to enhance analysis capability and efficiency.</li> <li>- Populated the MARS database with data from the most recently completed tests to support as-built analysis and capability assessments.</li> <li>- Provided engineering analysis process software to include System Coordination and Observation Reporting Environment (SCORE), Software Change Analysis Review Environment (SCARE), File Manager (FileMan), ManPower Loading (MPL).</li> <li>- Developed and provided infrastructure, software, and associated MDA/IA compliance for the RApid Scenario Prototype (RASP) capability.</li> <li>- Developed and optimized candidate ground test scenarios and produced the associated scenario data packages.</li> <li>- Developed and established hardware-in-the-loop (HWIL) M&amp;S integration test cases for ground and flight tests (pre-post mission).</li> <li>- Provided modeling and technical analysis support during Combatant Command wargames and exercises.</li> <li>- Developed, delivered, and presented the Quick Look Brief (QLB), Executive QLB, Mission Data Review (MDR), and Executive MDR.</li> <li>- Conducted M&amp;S HWIL Integration Bench Mark testing for ground tests by integrating the BMDS HWIL M&amp;S framework with MDA and non-MDA Elements into the test event BMDS architecture.</li> <li>- Integrated, tested, functionally qualified, and delivered end-to-end BMDS simulations supporting ground test missions.</li> </ul> <p><b>FY 2016 Plans:</b> Provide engineering support for planning, execution, and analysis of the test events listed in the Integrated Master Test Plan (IMTP):</p>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MT23 / Enabling - Test
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<ul style="list-style-type: none"> <li>- Design test architecture, define target requirements, and generate appropriate scenarios for ground and flight tests.</li> <li>- Define test objectives and evaluation criteria via the Integrated Master Assessment Plans and Flight Test Strategic Plan for all System level test events to anchor Modeling and Simulation (M&amp;S) and address data collection requirements.</li> <li>- Perform System-level and interoperability analysis.</li> <li>- Lead test requirements and analysis reviews, and participate in major test reviews, analysis team meetings, and mission planning events.</li> <li>- Generate BMDS test observations and coordinate associated BMDS Discrepancy Reports within the Failure Reporting, Analysis, and Corrective Action System.</li> <li>- Produce the threat data required to enable BMDS ground tests, flight tests and performance assessment.</li> <li>- Utilize M&amp;S for pre-test assessment and post-test review, as well as M&amp;S updates.</li> <li>- Provide Systems Engineering and Integration (SE&amp;I) test configuration management; risk assessment; and anomaly/deficiency review, assessment and closure to support data gathering for BMDS hardware/software reliability improvements.</li> <li>- Analyze test results to identify shortfalls so that objectives can be reassigned to future events to provide required verification and model validation data.</li> <li>- Coordinate with BMDS Operational Test Agency (OTA) to address OTA issue sheets allocated to test events.</li> <li>- Develop and document long-range BMDS IMTP planning and integration strategies related to overarching BMDS analysis product integration.</li> <li>- Develop and provide capability upgrades to test analysis tools in concert with the BMDS evolution (e.g., Modular Analysis and Reporting Suite (MARS)) to enhance analysis capability and efficiency.</li> <li>- Populate the MARS database with data from the most recently completed tests to support as-built analysis and capability assessments.</li> <li>- Provide engineering analysis process software to include System Coordination and Observation Reporting Environment (SCORE), Software Change Analysis Review Environment (SCARE), File Manager (FileMan), and ManPower Loading (MPL).</li> <li>- Incrementally improve and provide infrastructure, software, and associated MDA/IA compliance for the RAPid Scenario Prototype (RASP) capability.</li> <li>- Develop and optimize candidate ground test scenarios and produce the associated scenario data packages.</li> <li>- Develop and establish hardware-in-the-loop (HWIL) M&amp;S integration test cases for ground and flight tests (pre-post mission).</li> <li>- Provide modeling and technical analysis support during Combatant Command wargames and exercises.</li> <li>- Integrate non-MDA element models and simulations for participation in IMTP events.</li> <li>- Develop, deliver, and present the Quick Look Brief, Mission Data Review (MDR), and Executive MDR.</li> <li>- Conduct M&amp;S HWIL Integration Benchmark testing for ground tests by integrating the BMDS HWIL M&amp;S framework with MDA and non-MDA Elements into the test event BMDS architecture.</li> <li>- Integrate, test, functionally qualify, and deliver end-to-end BMDS simulations supporting ground test missions.</li> </ul> <p><b>FY 2017 Plans:</b></p>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MT23 / Enabling - Test
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>FY 2017 increase keeps pace with projected FY 2017-FY 2021 IMTP events.</p> <p>FY 2017 Engineering &amp; Performance Analysis activities focus on projected FY 2017-FY 2020 IMTP events and analysis and assessments that support delivery of Near-term Discrimination Improvements for Homeland Defense and Enhanced Homeland Defense.</p> <p>Provide engineering support for planning, execution, and analysis of the test events listed in the IMTP:</p> <ul style="list-style-type: none"> <li>- Design test architecture, define target requirements, and generate appropriate scenarios for ground and flight tests.</li> <li>- Define test objectives and evaluation criteria via the Integrated Master Assessment Plans and Flight Test Strategic Plan for all System level test events to assess System performance, anchor M&amp;S and address data collection requirements.</li> <li>- Assess the feasibility of flight test design analysis results to meet test objectives, and provide inputs to Approved Test Configuration packages.</li> <li>- Perform System-level and interoperability analyses.</li> <li>- Lead test requirements and analysis reviews, and participate in major test reviews, analysis team meetings, and mission planning events.</li> <li>- Generate BMDS test observations and coordinate associated BMDS Discrepancy Reports within the Failure Reporting, Analysis, and Corrective Action System.</li> <li>- Produce the threat data required to conduct BMDS ground tests, flight tests and performance assessment.</li> <li>- Utilize M&amp;S for pre-test assessment and post-test review; update M&amp;S with flight and ground test data.</li> <li>- Provide SE&amp;I requirements and test configuration management; risk assessment and management; anomaly/deficiency review, assessment and closure; and data collection and analysis supporting BMDS hardware/software reliability improvements.</li> <li>- Analyze test results to identify data collection shortfalls so that objectives can be reallocated to future events to provide required verification and model validation data.</li> <li>- Coordinate with BMDS OTA to address OTA issue sheets allocated to test events.</li> <li>- Develop and document long-range BMDS IMTP planning and integration strategies related to overarching BMDS analysis product integration.</li> <li>- Develop and provide capability upgrades to test analysis tools in concert with the BMDS evolution (e.g., Modular Analysis and Reporting Suite (MARS)) to enhance analysis capability and efficiency.</li> <li>- Populate the MARS database with data from the most recently completed tests to support as-built analysis and capability assessments.</li> <li>- Provide engineering analysis process software to include System Coordination and Observation Reporting Environment (SCORE), Software Change Analysis Review Environment (SCARE), File Manager (FileMan), and ManPower Loading (MPL).</li> <li>- Incrementally improve and provide infrastructure, software, and associated MDA/IA compliance for the RAPid Scenario Prototype (RASP) capability.</li> <li>- Develop and optimize candidate ground test scenarios and produce the associated scenario data packages.</li> <li>- Develop operational overlay scenarios to support flight test planning and design.</li> </ul>			

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**Exhibit R-2A, RDT&E Project Justification:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MT23 / Enabling - Test
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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<ul style="list-style-type: none"> <li>- Develop and establish HWIL M&amp;S integration test cases for ground and flight tests (pre-post mission).</li> <li>- Provide modeling and technical analysis support during Combatant Command wargames and exercises.</li> <li>- Integrate non-MDA element models and simulations for participation in IMTP events.</li> <li>- Develop, deliver, and present the Quick Look Brief, Mission Data Review (MDR), and Executive MDR.</li> <li>- Conduct M&amp;S HWIL Integration Benchmark testing for ground tests by integrating the BMDS HWIL M&amp;S framework with MDA and non-MDA Elements into the test event BMDS architecture.</li> <li>- Integrate, test, functionally qualify, and deliver end-to-end BMDS simulations supporting ground test missions.</li> <li>- Coordinate with the OTA community and Element stakeholders to disposition open OTA Issue Sheets and recommend action plans to achieve closure.</li> </ul>			
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<b>Title:</b> Flight Test Engineering	14.567	0.000	0.000
<b>Articles:</b>	-	-	-

**Description:** FTO-02 E1 was a “no test” due to a target extraction failure that prevented target ignition. Completed the following additional Aegis BMD specific work/re-work to re-plan the test as FTO-02 Event 1a, which successfully executed in 1Q FY 2016.

**FY 2015 Accomplishments:**

- Re-conducted test milestone reviews to ensure all test participants mission assignments and execution readiness were adequate to ensure accomplishment of test objectives
- Provided additional Aegis BMD engineering test configuration management; risk assessment; and anomaly/deficiency review to support the Failure Review Board, and assessment and closure to support data gathering for BMDS hardware/software reliability improvements
- Provided support for additional use of Aegis BMD test event laboratories, field activities, range support activities, and land-based test site test teams
- Conducted further interoperability testing from the Aegis Ashore Missile Defense Test Complex (AAMDTC) at Pacific Missile Range Facility (PMRF) and the BMDS Test Site (BTS) lab in San Diego to evaluate link performance, data integrity, data handling and weapon system mission performance.
- Performed additional Range Integration Testing (RIT) with the AAMDTC and PMRF to ensure integrated systems are providing and passing data correctly, safety system interlocks and decision engines are working properly and to provide console operator training.
- Performed additional Distributed RIT (DRIT) with the AAMDTC and PMRF, other participating mission elements and the BTS lab to ensure all participating elements were working properly, passing reliable data and provide console operator training for off nominal situations.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MT23 / Enabling - Test
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	FY 2015	FY 2016	FY 2017
- Conducted mission scenario based dry run and dress rehearsal exercises to ensure range and tactical communication loops were adequate and working properly and to exercise diverse timelines for target deployment and range surveillance and ensure countdown recycle points were adequate.  <b>FY 2016 Plans:</b> N/A  <b>FY 2017 Plans:</b> N/A			
<b>Accomplishments/Planned Programs Subtotals</b>	32.792	16.611	17.449

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

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603914C: <i>Ballistic Missile Defense Test</i>	354.414	281.740	293.441	-	293.441	337.537	322.334	346.134	351.933	Continuing	Continuing
• 0604878C: <i>Aegis BMD Test</i>	88.041	78.468	95.012	-	95.012	127.720	91.461	88.217	98.525	Continuing	Continuing
• 0604887C: <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>	78.463	64.618	56.481	-	56.481	86.709	76.205	74.776	87.415	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

In order to optimize the performance of the BMDS, MDA leverages the nation's engineering Centers of Excellence at government agencies and Military Services, FFRDCs, UARCs, and industry. The executing agents utilize various contracting strategies in a flexible manner to maximize their contribution to the BMDS. MDA will acquire products and services by competitive means to the extent practical.

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MT23 / Enabling - Test
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-	-	-	-	-	-	-	-	-	-	-	-

**Remarks**  
N/A

Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering and Analysis - Engineering & Analysis - CSS Support	C/CPFF	Parsons : AL	0.000	1.000		1.276	Oct 2015	1.514	Oct 2016	-		1.514	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - FFRDC	MIPR	Aerospace : AL	0.000	0.000		0.000		0.385	Nov 2016	-		0.385	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - Industry	C/CPAF	Boeing : VA, AL	0.000	5.594		2.243	Oct 2015	2.382	Nov 2016	-		2.382	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - Integration Support CSS	C/CPAF	COLSA : AL, CO	0.000	2.790		5.076	Nov 2015	5.328	Nov 2016	-		5.328	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - OGA Support	MIPR	AMRDEC : AL	0.000	6.557		6.182	Oct 2015	7.301	Nov 2016	-		7.301	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - Technical Support	C/CPAF	Northrop Grumman : VA, AL	0.000	1.354		1.205	Oct 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - Test Engineering Support	Various	Various : AL, CO, VA	0.000	0.930		0.629	Nov 2015	0.539	Nov 2016	-		0.539	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	18.225		16.611		17.449		-		17.449	-	-	-

**Remarks**  
FY 2017 increase keeps pace with projected FY 2017-FY 2021 Integrated Master Test Plan (IMTP) events, and reflects increase in pre- and post-mission System-level analyses, Modeling and Simulation (M&S) integration, and supporting validation and assessment activities required to support EPAA Phase 3 Technical Capability Declaration.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MT23 / Enabling - Test
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Flight Test Engineering - Aegis BMD Flight Test Execution	MIPR	DMEA : CA	0.000	0.085		0.000		0.000		-		0.000	0	0.085	0
Flight Test Engineering - Aegis BMD Flight Test Execution - 2	MIPR	NAWC AD : Pax River, MD	0.000	0.509		0.000		0.000		-		0.000	0	0.509	0
Flight Test Engineering - Aegis BMD Flight Test Execution - 3	MIPR	NAWC : Pt. Mugu, CA	0.000	2.108		0.000		0.000		-		0.000	0	2.108	0
Flight Test Engineering - Aegis BMD Flight Test Execution - 4	MIPR	NSWC Dahlgren : Dahlgren, VA	0.000	0.602		0.000		0.000		-		0.000	0	0.602	0
Flight Test Engineering - Aegis BMD Flight Test Execution - 5	MIPR	NSWC PHD : Pt Heuneme, CA	0.000	0.778		0.000		0.000		-		0.000	0	0.778	0
Flight Test Engineering - Aegis BMD Flight Test Execution - 6	MIPR	PMRF : PMRF, HI	0.000	2.543		0.000		0.000		-		0.000	0	2.543	0
Flight Test Engineering - Aegis BMD Flight Test Execution - 7	MIPR	Various : HI, VA, CA, MA, NC	0.000	2.014		0.000		0.000		-		0.000	0	2.014	0
Flight Test Engineering - Aegis BMD Flight Test Execution - CSS	SS/CPAF	RMS : Tuscon, AZ	0.000	0.978		0.000		0.000		-		0.000	0	0.978	0
Flight Test Engineering - Aegis BMD Flight Test Execution - IA 1	IA	DOI : PMRF, HI	0.000	1.394		0.000		0.000		-		0.000	0	1.394	0
Flight Test Engineering - Aegis BMD Flight Test Execution - IA 2	IA	DOT : PMRF, HI	0.000	3.200		0.000		0.000		-		0.000	0	3.200	0
Flight Test Engineering - Aegis BMD Flight Test Execution - UARC	SS/CPAF	JHU / APL : MD	0.000	0.356		0.000		0.000		-		0.000	0	0.356	0
<b>Subtotal</b>			0.000	14.567		0.000		0.000		-		0.000	0.000	14.567	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MT23 / Enabling - Test
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Test and Evaluation (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

**Remarks**  
N/A

Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

**Remarks**  
N/A

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	0.000	32.792	16.611	17.449	-	17.449	-	-	-

**Remarks**  
N/A

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MT23 / Enabling - Test
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Significant Event Complete	Milestone Decision Complete	Element Test Complete	System Level Test Complete	Complete Activity
Significant Event Planned	Milestone Decision Planned	Element Test Planned	System Level Test Planned	Planned Activity

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2015		▲																										
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2015				▲																								
FT0-02 E1a (OTA, Intercept Flight Test)			+	+																								
FT0-02 E2a (OTA, Intercept Flight Test)			+	+																								
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2016					△																							
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2016							△																					
Integrated Master Test Plan (IMTP) Engineering Inputs - 1Q - FY 2017								△																				
Integrated Master Test Plan (IMTP) Engineering Inputs - 3Q - FY 2017									△																			
Integrated Master Test Plan (IMTP) Engineering Inputs - 1Q - FY 2018										△																		
Integrated Master Test Plan (IMTP) Engineering Inputs - 3Q - FY 2018											△																	
FT0-03 E1 (OTA, Intercept Flight Test)												△																
Integrated Master Test Plan (IMTP) Engineering Inputs - 1Q - FY 2019													△															
FT0-03 E2 (OTA, Intercept Flight Test)														△														
Integrated Master Test Plan (IMTP) Engineering Inputs - 3Q - FY 2019															△													
Integrated Master Test Plan (IMTP) Engineering Inputs - 1Q - FY 2020																△												
Integrated Master Test Plan (IMTP) Engineering Inputs - 3Q - FY 2020																	△											
Integrated Master Test Plan (IMTP) Engineering Inputs - 1Q - FY 2021																		△										
FT0-04 (OTA, Intercept Flight Test)																										△		
Integrated Master Test Plan (IMTP) Engineering Inputs - 3Q - FY 2021																										△		

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MT23 / Enabling - Test
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2015	2	2015	2	2015
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2015	4	2015	4	2015
FT0-02 E1a (OTA, Intercept Flight Test)	4	2015	1	2016
FT0-02 E2a (OTA, Intercept Flight Test)	4	2015	1	2016
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2016	2	2016	2	2016
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2016	4	2016	4	2016
Integrated Master Test Plan (IMTP) Engineering Inputs - 1Q - FY 2017	1	2017	1	2017
Integrated Master Test Plan (IMTP) Engineering Inputs - 3Q - FY 2017	3	2017	3	2017
Integrated Master Test Plan (IMTP) Engineering Inputs - 1Q - FY 2018	1	2018	1	2018
Integrated Master Test Plan (IMTP) Engineering Inputs - 3Q - FY 2018	3	2018	3	2018
FT0-03 E1 (OTA, Intercept Flight Test)	3	2018	3	2018
Integrated Master Test Plan (IMTP) Engineering Inputs - 1Q - FY 2019	1	2019	1	2019
FT0-03 E2 (OTA, Intercept Flight Test)	1	2019	1	2019
Integrated Master Test Plan (IMTP) Engineering Inputs - 3Q - FY 2019	3	2019	3	2019
Integrated Master Test Plan (IMTP) Engineering Inputs - 1Q - FY 2020	1	2020	1	2020
Integrated Master Test Plan (IMTP) Engineering Inputs - 3Q - FY 2020	3	2020	3	2020
Integrated Master Test Plan (IMTP) Engineering Inputs - 1Q - FY 2021	1	2021	1	2021
FT0-04 (OTA, Intercept Flight Test)	3	2021	3	2021
Integrated Master Test Plan (IMTP) Engineering Inputs - 3Q - FY 2021	3	2021	3	2021

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs				<b>Project (Number/Name)</b> MD28 / Intelligence & Security			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
MD28: <i>Intelligence &amp; Security</i>	69.469	38.485	40.263	41.254	-	41.254	45.192	45.654	48.462	49.348	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

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

Major program goals for the Intelligence and Security team are:

- Ensure the Intelligence Community (IC) understands and fulfills MDA's current and future prioritized intelligence requirements; advocate BMDS test support intelligence requirements; and maintain regular interactions with the IC.
- Continue the federated approach of supporting MDA by leveraging available National and DoD Counterintelligence resources. Ensure counterintelligence products and services are fully integrated into all RDT&E programs and activities to protect classified information and critical technologies and to support and protect MDA and BMDS personnel, facilities, information and activities.
- Consistently and comprehensively define cybersecurity systems engineering requirements for Continental United States (CONUS) and non-CONUS based BMDS assets. Identify cybersecurity systems engineering and infrastructure intelligence requirements to focus IC collection, analysis and production to target MDA/BMDS cyber vulnerabilities. Incorporate cybersecurity engineering requirements into the BMDS systems engineering process.
- Provide cross-Agency acquisition security oversight and support for the identification and protection of Critical Program Information (CPI), and evaluation and implementation of developing Supply Chain Risk Management (SCRM) requirements. Provide physical security support for BMDS weapons/sensor system deployments, including Foreign Military Sales. Implement MDA's information security and declassification programs. Strengthen Test and Operations Security (OPSEC) support across the Agency.

The Security and Intelligence Project captures five specific areas: Intelligence; Counterintelligence; Cybersecurity Engineering; Research, Development, and Acquisition (RDA) Security; and Threat Systems Engineering. Collectively, these efforts provide critical information regarding threat ballistic missile system capabilities; protect personnel, activities, and technology from espionage and terrorism; and identify and mitigate BMDS system vulnerabilities.

1) The Intelligence Requirements Program furnishes highly classified intelligence on foreign threat ballistic missile systems to the missile defense community. This program provides a clearing house for MDA's requirements to be presented to the IC for collection, analysis and production. The Intelligence Requirements Office registers MDA's requirements with the IC, which provides data to be disseminated and archived in the MDA Intelligence Knowledge Base. The intelligence and threat changes are provided to the MDA System Engineer, who uses the information to reduce risk and improve BMDS performance against the evolving threat. This enables MDA Program Managers to achieve a sufficiently accurate understanding of the threat environment to respond to relevant capabilities of immediate importance, make informed decisions, and invest limited resources on countering the most significant aspects of potential adversary capabilities. Other aspects of Intelligence Requirements allow MDA to gain access to and leverage unique IC capabilities, many of which are highly classified and require expertise to exploit.

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<p>2) The Counterintelligence (CI) Program undertakes defensive CI activities as part of an integrated DoD/National effort to detect and neutralize foreign intelligence collection efforts, espionage and International terrorist activities directed against MDA personnel, information, facilities, and activities, or against U.S. National Security. Pursuant to DoD Directive O-5240.02 (Counterintelligence) and other DoD CI policy issuances, the MDA CI Program:</p> <ul style="list-style-type: none"> <li>-- Conducts CI investigations, including initial inquiries into reported or suspected clandestine relationships between MDA personnel and agents of a foreign power or relationships between MDA personnel and individuals associated with international terrorist organizations;</li> <li>-- Conducts CI Collection Activities (CCA) to acquire information about the capabilities, intentions, and activities of foreign powers, organizations, or persons who engage in espionage, terrorism, sabotage, subversion, and clandestine intelligence activities against the United States, DoD and MDA. This includes establishing liaison relationships with U.S. and host-nation intelligence, CI and law enforcement organizations and debriefing MDA foreign travelers;</li> <li>-- Conducts CI analysis and production by performing research and analysis to produce assessments, analytical reports, threat advisories and other products to keep MDA apprised of current or emerging foreign intelligence concerns and international terrorism threats to MDA personnel, information, facilities and activities worldwide;</li> <li>-- Performs defensive CI activities, including CI Awareness Training. Provides specialized on-site support for MDA Special Access Programs (SAP), RDA programs, flight tests, and fielding/deployment activities worldwide to protect CPI, critical BMDS components, and sensitive SAP technologies/capabilities from foreign intelligence entity targeting, collection or compromise; and</li> <li>-- Ensures MDA's Insider Threat program is compliant with the minimum standards established by Executive Order 13587 (White House Memorandum on National Insider Threat Policy and Minimum Standards for Executive Branch Insider Threat Programs) and DoD Counterintelligence Policies.</li> </ul> <p>3) The Cybersecurity Engineering Program provides coherent cybersecurity systems engineering policy and guidance to BMDS system design and acquisition, enhancing BMDS resiliency against existing and emerging cyber threats. It develops and coordinates near-term and long-term engineering changes to the BMDS that advance MDA's ability to counter cyber threats posed by our adversaries. To fulfill this role, the BMDS Cybersecurity Engineering program works with Intelligence Requirements and Counterintelligence to obtain a comprehensive picture of the overall cyber threat for impacts to the BMDS design; identifies mitigation strategies and maps them to established National Security Systems and DoD policies; and then influences the design by:</p> <ul style="list-style-type: none"> <li>-- Identifying updates to the Core Standards and Requirements to implement Defense-in-Depth within planned development cycles (Builds);</li> <li>-- Providing oversight, coordination and management of cybersecurity technical requirements development and policy-mandated responsibilities;</li> <li>-- Coordinating evaluation of cybersecurity capability during BMDS tests; and</li> <li>-- Assessing the validated cyber threat intelligence for impact to the BMDS design.</li> </ul> <p>To fulfill mission requirements, the program interfaces with relevant Cybersecurity Systems Engineering experts to assess requirements, documentation and cybersecurity system design and assessment criteria.</p> <p>4) RDA Security develops and implements policy for, and manages the MDA Information, Acquisition, System Protection, Declassification, Security Matrix, and Test and OPSEC programs to enable the acquisition, testing, development, and fielding of BMDS capabilities. RDA Security:</p> <ul style="list-style-type: none"> <li>-- Manages the Agency-wide Information Security (INFOSEC) program, which includes: conducting annual INFOSEC reviews; executing the Security Manager program; providing INFOSEC training for marking, classifying, and protecting classified and controlled unclassified information; performing security reviews for all Congressional, Government Accountability Office (GAO), budget, Freedom of Information Act (FOIA), and Public Release actions; supporting the development and coordination of Security Classification Guides (SCGs); and overseeing MDA's collateral classification management program;</li> <li>-- Supports program offices by identifying CPI and critical components, analyzing risk, and recommending security measures to protect CPI and the BMDS supply chain;</li> </ul>		

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- Manages the Industrial Security and Acquisition Security programs to develop Contract Security Classification Specifications (DD-254s) and security content for all applicable MDA contracts and research initiatives;
- Provides planning support for BMDS development, test, and deployments by coordinating security requirements for BMDS assets internal to MDA and with the Combatant Commanders (CCMDs) and Services. Develops and coordinates BMDS and site security infrastructure requirements and designs in accordance with DoD direction to protect critical BMDS assets; and
- Conducts the MDA Declassification Program in compliance with Executive Order 13526 (Classified National Security Information), which requires mandatory review of 25 year-old missile defense documents to ensure classified and sensitive unclassified information is not inadvertently released into the public domain.

5) The Threat Systems Engineering effort defines adversary capabilities required for BMDS design and development, and maintains and updates the Agency-wide threat documentation to ensure the threat parameters used for BMD System performance predictions, analyses, design, verification, and assessment are correct and consistent. Threat Systems Engineering also provides, develops, coordinates, and baselines targets and countermeasures requirements to define target capabilities that support BMDS flight test objectives. Threat Systems Engineering:

- Defines the BMDS threat space and supports threat space allocation to specific BMDS capability increments;
- Guides missile requirements development, planning, and accreditation for BMDS ground tests and digital simulations;
- Supports development of target system specifications and guides targets requirements development, planning, and certification for BMDS flight tests;
- Analyzes flight test target performance relative to threat intelligence assessments to support target system verification and certification;
- Conducts verification and validation to ensure threat missile models meet specifications and are consistent with intelligence assessments at established cut-off dates; and
- Produces threat models and scenario data for BMDS development events and establishes threat consistency across the BMDS and Elements.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2015	FY 2016	FY 2017
<p><b>Title:</b> Intelligence</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> The Intelligence program provides expertise to develop intelligence products on threat ballistic missile system capabilities, and leverages unique intelligence-community developed, owned, and operated capabilities for the benefit and advocacy of the missile defense community.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>-Served as designated intelligence broker between MDA and the Intelligence Community:</li> <li>-- Maintained and communicated prioritized, specific BMDS intelligence requirements to the Intelligence Community.</li> <li>-- Maintained a focused dialog with members of the Intelligence Community to ensure understanding, urgency and context of MDA intelligence requirements.</li> </ul> <p>-Provided up-to-date and accurate intelligence to Missile Defense community.</p>	<p>8.415</p> <p align="center">-</p>	<p>8.767</p> <p align="center">-</p>	<p>9.203</p> <p align="center">-</p>

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>-Maintained and updated MDA's encyclopedic, all-source, and all-encompassing knowledge base of foreign ballistic missile threats, including development, enhancement, and population of the Missile Threat Portals with Intelligence Community produced documents at the appropriate security classification levels.</p> <p>-Fully characterized all ballistic missile threat systems from high priority countries for use by the MDA Systems Engineer, Program Managers, and Director for Test to perform modeling, simulation, and testing of the BMDS in FY 2015.</p> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>- Serve as designated intelligence broker between MDA and the Intelligence Community:</li> <li>-- Maintain and communicate prioritized, specific BMDS intelligence requirements to the Intelligence Community.</li> <li>-- Maintain a focused dialog with members of the Intelligence Community to ensure understanding, urgency and context of MDA intelligence requirements.</li> <li>- Provide up-to-date and accurate intelligence to Missile Defense community.</li> <li>- Maintain and update MDA's encyclopedic, all-source, and all-encompassing knowledge base of foreign ballistic missile threats, including development, enhancement, and population of the Missile Threat Portals with Intelligence Community produced documents at the appropriate security classification levels.</li> <li>- Fully characterize all ballistic missile threat systems from high priority countries for use by the MDA Systems Engineer, Program Managers, and Director for Test to perform modeling, simulation, and testing of the BMDS.</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Serve as designated intelligence broker between MDA and the Intelligence Community</li> <li>-- Maintain and communicate prioritized, specific BMDS intelligence requirements to the Intelligence Community.</li> <li>-- Maintain a focused dialog with members of the Intelligence Community to ensure understanding, urgency and context of MDA intelligence requirements.</li> <li>- Provide up-to-date and accurate Current, Technical, Acquisition, Collection and Cyber intelligence support to the BMDS throughout the acquisition life cycle.</li> <li>- Maintain and update MDA's encyclopedic, all-source, and all-encompassing knowledge base of foreign ballistic missile threats, including development, enhancement, and population of the Missile Threat Portals with Intelligence Community produced documents at the appropriate security classification levels.</li> <li>- Fully characterize all ballistic missile threat systems from high priority countries for use by the MDA Systems Engineer, Program Managers, and Director for Test to perform modeling, simulation, and testing of the BMDS.</li> <li>- Maintain Missile Intelligence Secure Link (MISL) classified portal (full operational capability).</li> </ul>				
<b>Title:</b> Counterintelligence		5.752	6.105	6.389
<b>Articles:</b>		-	-	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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<p><b>Description:</b> The Counterintelligence Program detects, exploits or neutralizes espionage, foreign intelligence collection activities and terrorist activities conducted for or on behalf of foreign powers, organizations, persons, or their agents directed against U.S. national security interests, or DoD/MDA and its personnel, information, material, facilities, and activities.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Served as MDA Office of Primary Responsibility with Federal, State and Local Law Enforcement and Counterintelligence (CI) Organizations for reporting and resolution of matters or incidents involving MDA personnel, information and technologies.</li> <li>-- Engaged National, Combatant Command and DoD CI resources to share and obtain threat information impacting MDA personnel, facilities, information, technologies, programs and activities, worldwide.</li> <li>-- Deployed organic CI and technical teams to support of BMDS fielding and deployment activities under the Phased Adaptive Approach and other initiatives under Foreign Military Sales Programs.</li> <li>- Conducted CI research and provided timely, relevant and accurate threat products to keep MDA program elements and senior leadership informed of criminal, terrorist and foreign intelligence threats to MDA personnel, facilities, programs, information, and activities.</li> <li>- Executed lifecycle replacement of outdated technical surveillance countermeasures and cyber forensics gear to employ the latest technologies during conferences, flight tests and other classified activities to detect, deter and prevent the loss or compromise of classified or sensitive but unclassified information to sophisticated foreign adversary collection activities.</li> <li>- Provided on-site CI and technical support for all MDA flight tests to detect, deter, or neutralize criminal, terrorist and foreign intelligence collection threats targeting MDA and BMDS technologies, personnel, facilities and activities.</li> <li>- Conducted CI in Cyberspace activities to detect malicious and insider threat activities targeting MDA administrative and fire control networks.</li> <li>- Initiated MDA Insider Threat Program to identify, deter and mitigate potential insider threats.</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>- Serve as MDA Liaison with Federal, State and Local Law Enforcement and Counterintelligence (CI) Organizations for reporting and resolution of matters or incidents involving MDA personnel, information and technologies.</li> <li>-- Engage National, Combatant Command and DoD CI resources to share and obtain threat information impacting MDA personnel, facilities, information, technologies, programs and activities, worldwide.</li> <li>-- Deploy organic CI and technical teams to support BMDS fielding and deployment activities in all regions and other initiatives under Foreign Military Sales Programs.</li> <li>- Conduct CI research and provide timely, relevant and accurate threat products to keep MDA program elements and senior leadership informed of criminal, terrorist and foreign intelligence threats to MDA personnel, facilities, programs, information, and activities.</li> </ul>			
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	FY 2015	FY 2016	FY 2017
<p>- Execute life cycle replacement of outdated technical surveillance countermeasures and cyber forensics gear to employ the latest technologies during conferences, flight tests and other classified activities to detect, deter and prevent the loss or compromise of classified or sensitive but unclassified information to sophisticated foreign adversary collection activities.</p> <p>- Provide on-site CI and technical support for all MDA flight tests to detect, deter, or neutralize criminal, terrorist and foreign intelligence collection threats targeting MDA and BMDS technologies, personnel, facilities and activities.</p> <p>- Conduct CI in Cyberspace activities to detect malicious and insider threat activities targeting MDA administrative and fire control networks.</p> <p>- Develop MDA Insider Threat Program Standard Operating Procedures (SOPs) and Tactics, Techniques, and Procedures (TTPs) for the collection and analysis of information required to identify, deter and mitigate potential insider threats, and establish capability to execute analysis of determined data feeds.</p> <p><b>FY 2017 Plans:</b></p> <p>- Serve as MDA Liaison with Federal, State and Local Law Enforcement and Counterintelligence (CI) Organizations for reporting and resolution of matters or incidents involving MDA personnel, information and technologies.</p> <p>-- Engage National, Combatant Command and DoD CI resources to share and obtain threat information impacting MDA personnel, facilities, information, technologies, programs and activities, worldwide.</p> <p>-- Provide CI, technical and cyber threat support to MDA flight tests, conferences, and BMDS deployment activities worldwide, including Foreign Military Sales Programs, to detect, deter, or neutralize criminal, terrorist and foreign intelligence collection threats targeting MDA and BMDS technologies, personnel, facilities and activities.</p> <p>- Execute life cycle replacement of outdated technical surveillance countermeasures and cyber forensics gear to employ the latest technologies during conferences, flight tests and other classified activities to detect, deter and prevent the loss or compromise of classified or sensitive but unclassified information to sophisticated foreign adversary collection activities.</p> <p>- Conduct CI in Cyberspace activities to detect malicious and insider threat activities targeting MDA administrative and fire control networks.</p> <p>- Conduct MDA Insider Threat Program to identify, deter and mitigate potential insider threats.</p> <p>- Provide initial, periodic and annual CI Awareness and Reporting training to entire MDA workforce.</p> <p>- Provide CI support for cyber forensics and analysis to identify insider and foreign entity cyber threats to MDA computer networks and BMDS fire control systems.</p> <p>- Conduct CI research and analysis to produce CI threat products that address foreign intelligence, cyber and international terrorist threats to MDA personnel, facilities, information, systems and activities worldwide.</p> <p>- Maintain state of the art technical surveillance countermeasures and cyber forensic gear to detect, identify and neutralize adversary collection platforms and capabilities used to gain unauthorized access to MDA classified and controlled unclassified information.</p>			
<b>Title:</b> Cybersecurity Engineering Program	4.584	4.687	4.958
<b>Articles:</b>	-	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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<p><b>Description:</b> The Cybersecurity Engineering Program is focused on developing designs and solutions to protect the BMDS from cybersecurity threats through coherent cybersecurity systems engineering.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Implemented the Deputy Assistant Secretary of Defense (DASD) for Cyber, Identity, and Information Assurance (CIIA) Strategy by achieving Cyberspace resiliency (being flexible, adaptable, and successful in the face of cyber degradation, loss or attack) by understanding the battle space; and engineering for survivability.</li> <li>- Ensured Cybersecurity is integrated into the Acquisition Process in accordance with DoD Instruction 8580.1.</li> <li>- Developed and coordinated near-term and long-term engineering changes to the BMDS that advance the resilience to cyber threats.</li> <li>- Defined cybersecurity engineering requirements for the BMD System Specification for continental U.S. (CONUS) and non-CONUS based BMDS assets. Developed requirements for building cybersecurity into incremental BMDS Hardware and Software builds, up front. Monitored allocation of these requirements to the Elements. Recommended updates to the BMDS Core Standards to include new Cyber-related specifications specified by the Agency, the Combatant Commanders, the DOD, and the Federal Government.</li> <li>- Assessed the Cybersecurity Architecture to address gaps/disconnects, enhance interoperability, and realize efficiencies across all mission systems. Defined the "As Built" and "To Be" Cybersecurity Systems Engineering concepts to support technical assessments and cybersecurity design solutions and implementation recommendations impacted by the change in requirements. Recommended updates to the BMD System Description Document, System Security Concept (SSC), and other planning documents to ensure cybersecurity issues are fully considered through the BMDS and element programs.</li> <li>- Developed technical requirements and interface documentation to execute an Integrated Cybersecurity Engineering Net-centric Architectural Concept.</li> <li>- Implemented the National Security Agency (NSA) Community Gold Standard to enhance the cybersecurity posture of the BMDS by delivering expert, responsive, cybersecurity systems engineering products and services supporting the Program Managers to meet BMDS and cybersecurity systems engineering needs and requirements for Enhanced Homeland Defense and Enhanced Medium Range Ballistic Missile (MRBM) Defense.</li> <li>- Implemented mitigations to cyber threats as system requirements and specifications for the BMDS design and architecture, and ensured mitigations trace to necessary components and interfaces supporting the BMDS mission.</li> <li>- Coordinated evaluation of cybersecurity capability during BMDS tests; developed verification and assessment strategies for system requirements.</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>- Implement the Deputy Assistant Secretary of Defense (DASD) for Cyber, Identity, and Information Assurance (CIIA) Strategy by achieving Cyberspace flexibility, adaptability, and resilience in the face of cyber degradation, loss or attack, through understanding of the battle space.</li> </ul>			
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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<ul style="list-style-type: none"> <li>- Ensure Cybersecurity is integrated into the Acquisition Process in accordance with DoD Instruction 8580.1.</li> <li>- Develop and coordinate near-term and long-term engineering changes to the BMDS that advance the resilience to cyber threats.</li> <li>- Define cybersecurity engineering requirements for the BMD System Specification for continental U.S. (CONUS) and non-CONUS based BMDS assets. Develop requirements for building cybersecurity into incremental BMDS Hardware and Software builds, up front. Monitor allocation of these requirements to the Elements. Recommend updates to the BMDS Core Standards to include new Cyber-related specifications specified by the Agency, the Combatant Commanders (COCOMs), the DOD, and the Federal Government.</li> <li>- Assess the Cybersecurity Architecture to address gaps/disconnects, enhance interoperability, and realize efficiencies across all mission systems. Define the "As Built" and "To Be" Cybersecurity Systems Engineering concepts to support technical assessments and cybersecurity design solutions and implementation recommendations impacted by the change in requirements. Recommend updates to the BMDS System Description Document, System Security Concept (SSC), and other planning documents to ensure cybersecurity issues are fully considered through the BMDS and Element programs.</li> <li>- Develop technical requirements and interface documentation to execute an Integrated Cybersecurity Engineering Net-centric Architectural Concept.</li> <li>- Implement the National Security Agency (NSA) Community Gold Standard to enhance BMDS cybersecurity posture by delivering expert and responsive cybersecurity systems engineering products and services, supporting Program Managers to meet BMDS and cybersecurity systems engineering needs and requirements for Enhanced Homeland Defense and Enhanced Medium Range Ballistic Missile (MRBM) Defense.</li> <li>- Implement cyber threat mitigation strategies within BMDS architecture, design, system requirements, and specifications documentation to ensure traceability to necessary components and interfaces supporting the BMDS mission.</li> <li>- Coordinate evaluation of cybersecurity capability during BMDS tests.</li> <li>- Develop verification and assessment strategies for system cybersecurity requirements.</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Ensure Cybersecurity is integrated into the Acquisition Process in accordance with DoD Instruction 8580.1.</li> <li>- Assess the Cybersecurity Architecture to address gaps/disconnects, enhance interoperability, and realize efficiencies across all mission systems. Define the "As Built" and "To Be" Cybersecurity Systems Engineering concepts to support technical assessments and cybersecurity design solutions and implementation recommendations impacted by the change in requirements. Recommend updates to the BMDS System Description Document, System Security Concept, and other planning documents to ensure cybersecurity issues are fully considered through the BMDS and Element programs.</li> <li>- Provide cybersecurity systems engineering policy and guidance for BMDS system design and acquisition to enhance BMDS resiliency against cyber threats</li> <li>-- Develop and coordinate near-term and long-term engineering changes to the BMDS that advance resilience to cyber threats.</li> <li>- Define cybersecurity engineering requirements for the BMD System Specification for CONUS and non-CONUS based BMDS assets</li> </ul>			

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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<ul style="list-style-type: none"> <li>-- Develop requirements for building cybersecurity into incremental BMDS Hardware and Software builds, up front.</li> <li>-- Monitor allocation of these requirements to the Elements.</li> <li>-- Recommend updates to the BMDS Core Standards, including Cyber-related requirements specified by the Agency, the CCMDs, the DoD, and the Federal Government.</li> <li>-- Perform cybersecurity systems engineering assessments for BMD System Specification changes and additions.</li> <li>- Perform cybersecurity systems engineering assessments for BMDS interface changes.</li> <li>- Implement cybersecurity engineering resiliency techniques.</li> <li>- Support cybersecurity requirement architecture, system design, testing, and assessment.</li> <li>- Provide independent cybersecurity reviews at critical engineering milestones.</li> <li>- Support information system security engineering by assessing cybersecurity requirements, design, and implementations and provide recommendations to address architecture gaps or shortfalls.</li> <li>- Implement cyber threat mitigation strategies within BMDS architecture, design, system requirements, and specifications documentation to ensure traceability to necessary components and interfaces supporting the BMDS mission.</li> <li>- Coordinate evaluation of cybersecurity capability during BMDS tests.</li> <li>- Develop verification and assessment strategies for system cybersecurity requirements.</li> </ul>			
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<b>Title:</b> Research, Development, and Acquisition (RDA) Security	9.945	10.434	10.965
<b>Articles:</b>	-	-	-

**Description:** RDA Security protects BMDS information, Critical Program Information, technologies, and deploying systems; develops and coordinates Security Classification Guides; and performs declassification reviews to identify equities that warrant continued protection in order to preserve the technological advantage of the BMDS. RDA Security also coordinates MDA intelligence, counterintelligence and security support to BMDS test activities.

**FY 2015 Accomplishments:**

- Performed all reviews supporting Agency public release, security classification, and required Freedom of Information Act (FOIA) and Mandatory Declassification Reviews (MDR) to ensure sensitive BMDS information is not inadvertently released into the public domain.
- Per Executive Order 13525, Classified National Security Program, provided a combination of digitized material, automated search tools, and Declassification specialists to identify sensitive BMDS material that qualifies for exemption from automatic declassification based on age. Declassification reviews identified equities that warrant continued protection to preserve the technological advantage of the BMDS.
- Performed Information Security staff assistance reviews and assessments of 90 MDA programs and coordinated required security incident reviews to identify and fix security deficiencies impacting Agency operations; supported continuing awareness and emphasis of security measures to protect critical BMDS technological information.

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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<ul style="list-style-type: none"> <li>- Provided security oversight for the Agency's classified contracts by drafting and coordinating DD254 "Contract Security Classification Specification" documents to support contracting efforts and ensure that appropriate protections for BMDS sensitive information are applied within the supporting industrial base.</li> <li>- Provided security support to Phased Adaptive Approach (PAA) and deployments of AN-TPY-2 radars to the CENTCOM and PACOM areas of responsibility to ensure effective physical protection is provided to extremely low density/high demand emerging warfighter capability.</li> <li>- Conducted program protection planning for the continuing assessment of candidate critical program information (CPI) for Advanced Technology programs and reassessment of other BMDS programs affected by technical baseline changes; ensured critical technologies embedded in Missile Defense systems are not vulnerable to compromise.</li> <li>- Executed an effective Supply Chain Risk Management (SCRM) program to prevent unmitigated risks from degrading the performance of components and systems across the BMDS supply chain.</li> <li>- Provided dedicated on-site security and protection of BMDS resources and personnel at operational sites in Alaska, California and Colorado to ensure 100% security protection coverage of the BMDS mission operations and test assets based in those regions.</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>- Perform reviews supporting all Agency public release, security classification, and required Freedom of Information Act and Mandatory Declassification Reviews to ensure sensitive BMDS information is not inadvertently released into the public domain.</li> <li>- Perform Information Security staff assistance reviews and assessments of MDA programs and coordinate required security incident reviews to identify and fix security deficiencies impacting Agency operations; support continuing awareness and emphasis of security measures to protect critical BMDS technological information.</li> <li>- Provide security oversight for the Agency's classified contracts by drafting and coordinating DD254 "Contract Security Classification Specification" documents to support contracting efforts and ensure that appropriate protections for BMDS sensitive information are applied within the supporting industrial base.</li> <li>- Provide security support to deployed assets to ensure effective physical protection is provided to extremely low density/high demand emerging warfighter capability.</li> <li>- Conduct program protection planning for the continuing assessment of candidate critical program information for Advanced Technology programs and reassessment of other BMDS programs affected by technical baseline changes; ensure critical technologies embedded in Missile Defense systems are not vulnerable to compromise.</li> <li>- Execute an effective Supply Chain Risk Management (SCRM) program to prevent unmitigated risks from degrading the performance of components and systems across the BMDS supply chain.</li> <li>- Provide dedicated on-site security and protection of BMDS resources and personnel at operational sites in Alaska, California and Colorado to ensure 100% security protection coverage of the BMDS mission operations and test assets based in those regions.</li> </ul>			
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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4		<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs		<b>Project (Number/Name)</b> MD28 / Intelligence & Security
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>- Per Executive Order 13525, Classified National Security Program, provide a combination of digitized material, automated search tools, and Declassification specialists to identify sensitive BMDS material that qualifies for exemption from automatic declassification based on age.</p> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Perform reviews supporting all Agency public release, security classification, and required Freedom of Information Act and Mandatory Declassification Reviews to ensure sensitive BMDS information is not inadvertently released into the public domain.</li> <li>- Perform Information Security staff assistance reviews and assessments of MDA programs</li> <li>-- Coordinate security incident reviews to identify and fix security deficiencies impacting Agency operations</li> <li>-- Support continuing awareness and emphasis of security measures to protect critical BMDS technological information.</li> <li>- Provide security oversight for the Agency's classified contracts by drafting and coordinating DD254 "Contract Security Classification Specification" documents to support contracting efforts and ensure that appropriate protections for BMDS sensitive information are applied within the supporting industrial base.</li> <li>- Execute an effective Supply Chain Risk Management program to prevent unmitigated risks from degrading the performance of components and systems across the BMDS supply chain.</li> <li>- Provide dedicated on-site security and protection of BMDS resources and personnel at operational sites in Alaska, California and Colorado to ensure 100% security protection coverage of the BMDS mission operations and test assets based in those regions.</li> <li>- Provide security support to deployed assets to ensure effective physical protection is provided to extremely low density/high demand emerging warfighter capability.</li> <li>- Expand security support activities to include Foreign Military Sales.</li> <li>- Conduct program protection planning for the continuing assessment of candidate critical program information for Advanced Technology programs and reassessment of other BMDS programs affected by technical baseline changes; ensure critical technologies embedded in missile defense systems are not vulnerable to compromise.</li> <li>- Keep pace with substantial mission growth in program protection, system security engineering, acquisition security, and SCRM.</li> </ul>				
<p><b>Title:</b> Threat Systems Engineering</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> Threat Systems Engineering will define the BMDS Threat Space and directly support a collaborative MDA engineering effort to develop, test, and field BMDS capabilities. Threat Engineering provides representations of adversary missile capabilities based on best available intelligence information, and develops, coordinates, and baselines BMDS-level targets and countermeasures requirements to define target capabilities that support BMDS flight test objectives.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Defined, developed, and maintained the BMDS threat.</li> <li>- Produced flight test targets and countermeasures requirements to support BMDS flight test testing.</li> <li>- Produced /updated threat specifications, models, and scenario data to support BMDS development and testing.</li> </ul>		9.789	10.270	9.739
		-	-	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / <i>BMD Enabling Programs</i>	<b>Project (Number/Name)</b> MD28 / <i>Intelligence &amp; Security</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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<ul style="list-style-type: none"> <li>- Produced Adversary Data Package (ADP) updates.</li> <li>- Provided Technical Data to support major reviews (System Requirements Reviews, Critical Design Reviews, etc.).</li> <li>- Supported verification and validation of threat models.</li> <li>- Certified that flight test targets meet the established requirements.</li> <li>- Analyzed threat representation of flight test targets and ensured target requirements were based on intelligence assessments and the threat.</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>- Ensure flight test targets meet operationally realistic conditions.</li> <li>- Define threat representative target requirements early in the development of Integrated Master Test Plan.</li> <li>- Define the BMDS threat space and support threat space allocation to specific BMDS capability increments.</li> <li>- Guide threat missile requirements development, planning, and accreditation for BMDS ground and digital simulation tests.</li> <li>- Develop target system specifications and guide targets requirements development, planning, and certification for BMDS flight tests.</li> <li>- Analyze flight test target performance relative to threat intelligence assessments to support target system verification and certification.</li> <li>- Conduct threat model verification and validation to verify missile models meet specifications and are consistent with intelligence assessments at established Intel-Cut-Off dates.</li> <li>- Produce threat / scenario data for BMDS development events and establish threat consistency across the BMDS and Elements.</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Develop threat definitions for system specifications</li> <li>-- Produce threat / scenario data for BMDS development events</li> <li>-- Perform Threat Verification and Validation analysis to verify missile models meet specifications and are consistent with intelligence assessments.</li> <li>- Produce Adversary Data Package (ADP) updates.</li> <li>- Develop target requirements to ensure flight test targets meet operationally realistic conditions.</li> <li>- Produce Target Assessment and Certification Reports.</li> <li>- Assess threat representation of flight test targets.</li> <li>- Develop target system specifications and guide targets requirements development, planning, and certification for BMDS flight tests.</li> <li>- Analyze flight test target performance relative to threat intelligence assessments to support target system verification and certification.</li> <li>- Provide Technical Data to support major reviews (System Requirements Reviews, Critical Design Reviews, etc.)</li> <li>- Complete Target Specification builds.</li> </ul>			
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**Exhibit R-2A, RDT&E Project Justification:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD28 / Intelligence & Security
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	FY 2015	FY 2016	FY 2017
- Update MDA INS 5000.06, Target Class Capabilities and Requirements documents as necessary.			
<b>Accomplishments/Planned Programs Subtotals</b>	38.485	40.263	41.254

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

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 0305103C: Cyber Security Initiative	0.944	0.963	0.969	-	0.969	0.986	0.997	1.031	1.051	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

This project leverages expertise in the intelligence community, counterintelligence community, and information assurance community, including the Military Services, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and industry. The executing agents utilize various contracting strategies in a flexible manner to maximize their contribution to the BMDS. Products and Services will be acquired by competitive means to the extent that is beneficial and practical.

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD28 / Intelligence & Security
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-	-	-	-	-	-	-	-	-	-	-	-

**Remarks**  
N/A

<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Intelligence - Intelligence Analysis & Support	Various	MDA : VA, AL, CO	9.100	3.641		4.251	Nov 2015	3.832	Oct 2016	-		3.832	Continuing	Continuing	Continuing
Intelligence - Intelligence Applications	MIPR	SMDC : Huntsville, AL	6.470	0.000		0.000		0.000		-		0.000	0	6.470	0
Intelligence - Intelligence Collections	MIPR	NASIC : Wright-Patterson AFB, OH	1.300	0.000		0.000		0.000		-		0.000	0	1.300	0
Intelligence - Intelligence Support	C/CPFF	Booz Allen Hamilton : AL, VA, CO	8.267	4.774		3.809	Nov 2015	4.746	Nov 2016	-		4.746	Continuing	Continuing	Continuing
Intelligence - Intelligence Support (2)	C/CPFF	Northrop Grumman : AL, CO	0.856	0.000		0.707	Nov 2015	0.625	Nov 2016	-		0.625	Continuing	Continuing	Continuing
Counterintelligence - CI Analysis & Support	Various	MDA : AL, CO, VA	3.566	1.263		2.138	Nov 2015	1.468	Oct 2016	-		1.468	Continuing	Continuing	Continuing
Counterintelligence - CI Analysis and Support 3	C/CPFF	ManTech : AL, CO, VA	3.331	4.489		3.105	Nov 2015	4.514	Nov 2016	-		4.514	Continuing	Continuing	Continuing
Counterintelligence - CI Insider Threat Analysis	C/CPFF	ManTech : VA	0.000	0.000		0.862	Nov 2015	0.407	Nov 2016	-		0.407	Continuing	Continuing	Continuing
Cybersecurity Engineering Program - Cybersecurity - FFRDC	FFRDC	Aerospace : CA, VA	1.650	0.120		0.755	Nov 2015	0.754	Nov 2016	-		0.754	Continuing	Continuing	Continuing
Cybersecurity Engineering Program - Cybersecurity - FFRDC (2)	FFRDC	MITRE : VA, VA	0.986	0.218		0.755	Nov 2015	0.754	Nov 2016	-		0.754	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency												Date: February 2016			
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)					
0400 / 4					PE 0603890C / BMD Enabling Programs					MD28 / Intelligence & Security					
Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Cybersecurity Engineering Program - Cybersecurity Engineering	Various	MDA : VA, AL	3.641	3.431		2.259	Nov 2015	2.355	Oct 2016	-		2.355	Continuing	Continuing	Continuing
Cybersecurity Engineering Program - Cybersecurity Engineering CSS	C/CPFF	Booz Allen Hamilton : VA, AL	0.000	0.815		0.918	Nov 2015	1.095	Nov 2016	-		1.095	Continuing	Continuing	Continuing
Research, Development, and Acquisition (RDA) Security - RDA Analysis & Support	C/CPFF	Mantech : AL, AK, CA, CO, VA	6.960	3.906		4.508	Nov 2015	4.322	Nov 2016	-		4.322	Continuing	Continuing	Continuing
Research, Development, and Acquisition (RDA) Security - RDA Declass Analysis	C/CPFF	Booz-Allen Hamilton : VA, AL	2.530	1.490		1.623	Nov 2015	1.853	Nov 2016	-		1.853	Continuing	Continuing	Continuing
Research, Development, and Acquisition (RDA) Security - RDA Security Analysis	Various	MDA : VA, AL	9.002	4.048		3.592	Nov 2015	4.250	Oct 2016	-		4.250	Continuing	Continuing	Continuing
Research, Development, and Acquisition (RDA) Security - RDA Security Support	Various	Various : VA, AL, CO	1.165	0.501		0.711	Nov 2015	0.540	Nov 2016	-		0.540	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering	Various	MDA : VA, AL, CO	2.268	3.012		3.153	Nov 2015	2.116	Oct 2016	-		2.116	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - CSS	C/CPFF	MEI : AL, MD, VA	3.811	3.868		4.139	Nov 2015	4.218	Nov 2016	-		4.218	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - CSS (2)	C/CPFF	Parsons : VA, AL	0.974	1.075		1.958	Nov 2015	2.230	Nov 2016	-		2.230	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat	FFRDC	MIT/LL : MA	0.643	1.226		0.000		0.000		-		0.000	Continuing	Continuing	Continuing

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD28 / Intelligence & Security
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<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering - FFRDC															
Threat Systems Engineering - Threat Systems Engineering - UARC	FFRDC	JHU/APL : MD	1.961	0.272		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Threat Systems Engineering - Unique RCS	FFRDC	NSWC Corona : CA, MD	0.988	0.336		1.020	Nov 2015	1.175	Nov 2016	-		1.175	Continuing	Continuing	Continuing
<b>Subtotal</b>			69.469	38.485		40.263		41.254		-		41.254	-	-	-

**Remarks**  
SMDC - Space & Missiles Development Center; NASIC - National Air and Space Intelligence Center

<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

**Remarks**  
N/A

<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

**Remarks**  
N/A

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**Exhibit R-3, RDT&E Project Cost Analysis:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD28 / Intelligence & Security
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	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	69.469	38.485	40.263	41.254	-	41.254	-	-	-

**Remarks**  
 Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD28 / Intelligence & Security
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Significant Event Complete     
 Milestone Decision Complete     
 Element Test Complete     
 System Level Test Complete     
 Complete Activity   
 Significant Event Planned     
 Milestone Decision Planned     
 Element Test Planned     
 System Level Test Planned     
 Planned Activity

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MD28 Intelligence & Security					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+				
Adversary Data Package (ADP) - 2017												△																
Submit Annual MDA OPSEC Report to USD(I) - 2017												△																
Complete Annual Declassification Review - 2017												△																
Adversary Data Package (ADP) - 2018																△												
Submit Annual MDA OPSEC Report to USD(I) - 2018																△												
Complete Annual Declassification Review - 2018																△												
Adversary Data Package (ADP) - 2019																												
Submit Annual MDA OPSEC Report to USD(I) - 2019																												
Complete Annual Declassification Review - 2019																												
Adversary Data Package (ADP) - 2020																												
Submit Annual MDA OPSEC Report to USD(I) - 2020																												
Complete Annual Declassification Review - 2020																												
Adversary Data Package (ADP) - 2021																												△
Submit Annual MDA OPSEC Report to USD(I) - 2021																												△
Complete Annual Declassification Review - 2021																												△

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD28 / Intelligence & Security
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD28 Intelligence & Security	1	2016	4	2020
Adversary Data Package (ADP) - 2017	4	2017	4	2017
Submit Annual MDA OPSEC Report to USD(I) - 2017	4	2017	4	2017
Complete Annual Declassification Review - 2017	4	2017	4	2017
Adversary Data Package (ADP) - 2018	4	2018	4	2018
Submit Annual MDA OPSEC Report to USD(I) - 2018	4	2018	4	2018
Complete Annual Declassification Review - 2018	4	2018	4	2018
Adversary Data Package (ADP) - 2019	4	2019	4	2019
Submit Annual MDA OPSEC Report to USD(I) - 2019	4	2019	4	2019
Complete Annual Declassification Review - 2019	4	2019	4	2019
Adversary Data Package (ADP) - 2020	4	2020	4	2020
Submit Annual MDA OPSEC Report to USD(I) - 2020	4	2020	4	2020
Complete Annual Declassification Review - 2020	4	2020	4	2020
Adversary Data Package (ADP) - 2021	4	2021	4	2021
Submit Annual MDA OPSEC Report to USD(I) - 2021	4	2021	4	2021
Complete Annual Declassification Review - 2021	4	2021	4	2021

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs				<b>Project (Number/Name)</b> MD30 / BMD Information Management Systems			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
MD30: BMD Information Management Systems	151.415	90.761	95.650	92.628	-	92.628	81.212	80.427	86.691	87.939	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

The reduction of \$3.022 million between FY 2016 and FY 2017 is due to delaying Information Technology (IT) equipment replacement beyond the lifecycle replacement standard.

Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

MDA must comply with National Command Authority Directives for rapid deployment of the BMDS while complying with DoD initiatives of the Joint Information Environment (JIE) and the Unified Capabilities Framework to ensure MDA remains compatible with the DoD Information Network (DODIN). Over the last 5 years, MDA funding in this Budget Project has been used to concentrate on meeting National Security Presidential Directive (NSPD-23) and DoD Directive 5134.09 to expand the global mission of MDA to the Global Information Grid (GIG) End-to-End Communications Architecture. The global expansion established classified and unclassified MDA communication and collaboration services to over 203 global locations. This enables a near real-time capability to execute BMD RDT&E mission and share missile threat data with the NATO members, CCMD, foreign governments, and industry partners.

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

The Ballistic Missile Defense (BMD) Information Management Systems Project funds the Information Technology (IT), Cybersecurity, Information Assurance (IA), and telecommunications infrastructure of the Agency. Information management systems are critical to the day-to-day functions of MDA personnel to communicate (classified and unclassified) with each other, Congress, senior DoD and other U.S. government agency personnel, CCMDs, NATO partners, and other industry partners. Communication among these organizations facilitates the MDA mission of developing and fielding an integrated BMDS to defend the United States, our deployed forces, allies, and friends against all ranges of enemy ballistic missiles in all phases of flight.

MDA information management systems capabilities support rigorous missile defense testing and facilitate the development of technologies to guard against evolving missile threat. Communications are vital for missile defense to continue a viable homeland defense against rogue threats and to provide the integration required to defend deployed forces, allies, and friends against theater threats. The management systems consist of MDA secure communication networks, IT systems, data centers, operations and monitoring centers which are vital to support the strategic mission of the Agency and necessary to meet disaster recovery and continuity of operations requirements. This infrastructure is required to sustain access to the Secret Internet Protocol Router Network (SIPRNET), Non secure Internet Protocol Router Network (NIPRNET), MDA classified and unclassified networks, classified and unclassified video conferencing services, test and business knowledge data centers, the Defense Research Engineering Network (DREN). These mission critical functions provide for the efficient operation and safeguarding of all agency information in locations supporting MDA around the world.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD30 / BMD Information Management Systems

This project funds IT, mission critical functions, providing for the efficient operation and safeguarding of Agency information in compliance with DoD policies and in keeping with the President's declaration on 29 May 2009, "cyber threat is one of the most serious economic and national security challenges we face as a nation".

Project MD30 was realigned into the following seven inter-agency mission critical IT services and the associated plans to align with the Federal Information Technology Shared Services Strategy.

1. End User Support

Covers licensing and sustainment of desktops, laptops, and associated hardware and software, printing and copy services, file and directory services, user authentication, and help desk support for break-fix actions.

2. Unified Communications

Supports leased communications (classified and unclassified wide area networks, metropolitan area networks, and local area networks), telecommunications (local and long distance telephone services and secure and non-secure mobile and desktop telephony devices), management, engineering, systems integration, operations, maintenance, and technical support services. Unified Communications also includes sustainment of Video Teleconferencing (VTC) hardware/software, and conference room scheduling, BlackBerrys and wireless services, instant messaging and collaboration, private branch exchange switches maintenance, unclassified desktop/laptop integrated audio/video collaboration services, secure Telepresence suites and secure mobile cell phones.

3. Business Automation Services

Provides, in accordance with the Clinger Cohen Act and Defense Business Systems Investment Management Process, for the licensing and sustainment of DoD business enterprise architecture approved applications. This function ensures that MDA business applications meet the interoperable defense business solutions requirements for federal accounting, financial management, and reporting requirements

4. Portal and Data Services

Enables knowledge and information sharing across MDA. This service includes operations and maintenance of the unclassified and classified MDA Knowledge Online portals and associated storage, and is also responsible for records management solutions, and privacy and civil liberties compliance and reporting.

5. Network and Infrastructure Services

Includes operations and sustainment of MDA classified and unclassified networks and data centers. Ensures DoD compliant delivery, oversight and performance monitoring of IT systems that enable, secures IT systems access, server and storage capacity management, and communications security status. Also supports Disaster Recovery and Continuity of Operations rehearsals, network hardware break/fix and end-of-life replacement.

6. Information Technology (IT) Planning and Solutions

Provides IT project planning and management, life-cycle asset management, enterprise architecture planning and documentation, architecture change and configuration management, and Office of Management and Budget (OMB) and DoD IT compliance tracking and reporting.

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> End User Support	19.402	20.217	18.859
<b>Articles:</b>	-	-	-
<b>Description:</b> Provides for operations, maintenance and helpdesk support to each MDA IT user desktop capability.			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD30 / BMD Information Management Systems

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p><b><i>FY 2015 Accomplishments:</i></b></p> <ul style="list-style-type: none"> <li>-Sustained End User core service support 18 hours a day, 6 days a week for administrative and business information systems for approximately 8,000 MDA unclassified users and approximately 3,500 classified users.</li> <li>-Monitored networks for user compliance and DoD policies, and report incidents.</li> <li>-Maintained Printing and Copy Services (386 multi-functional device printers and 12 print servers).</li> <li>-Sustained email services (24 Exchange servers, 4 BlackBerry Enterprise Services servers and 2 archiving storage area networks).</li> <li>-Sustained file services (8 file servers and 4 storage area networks) -Maintain Directory Services (24 Active Directory and domain controller servers).</li> <li>-Maintained Authentication services (Public Key Infrastructure/Common Area Card) -Maintain current hardware and software licenses for IT operational systems.</li> <li>-Maintained an Integrated Service Desk supporting 8,000 MDA users across all locations, resolving over 45,000 help desk tickets per quarter.</li> <li>-Maintained IT life-cycle asset management of over 15,000 end user devices (desktops, laptops, monitors, printers, thin clients, and BlackBerrys).</li> <li>-Funded MDA Chief Information Office (CIO) civilian salaries.</li> </ul> <p><b><i>FY 2016 Plans:</i></b></p> <ul style="list-style-type: none"> <li>-Perform IT receiving; warehousing; shipping; transportation and movement; and excess property management functions for over 103,000 IT assets at MDA warehouses in Huntsville, Alabama; Fort Belvoir, VA; Colorado Springs, CO.</li> <li>-Maintain Defense Property Accountability System (DPAS) property accountability artifacts to support DoD Audit Readiness activities.</li> <li>-Sustain End User support (IT Help Desk and Client Support Services) 18 hours a day, 6 days a week for administrative and business information systems for approximately 8,350 MDA unclassified users and approximately 4,300 classified users.</li> <li>-Address approximately 50,000 Client Support tickets per year.</li> <li>-Respond to approximately 77,000 IT Help Desk tickets per year.</li> <li>-Monitor networks for user compliance and DoD policies, and report incidents.</li> <li>-Maintain Printing and Copy Services (872 multi-functional device printers and 51 classified/unclassified print servers).</li> <li>-Sustain email services (103 Exchange servers, 12 Smart Phone Enterprise servers, 14 Lync communication servers and 12 archive servers).</li> <li>-Sustain file services (33 classified/unclassified file servers and 4 storage area networks).</li> <li>-Maintain Directory Services (70 classified/unclassified domain controller servers).</li> <li>-Maintain Authentication services (Public Key Infrastructure/Common Area Card).</li> <li>-Maintain current hardware and software licenses for IT operational systems.</li> </ul>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD30 / BMD Information Management Systems		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>-Maintain an Integrated Service Desk supporting 8,350 MDA users across all locations, resolving over 45,000 help desk tickets per quarter.</p> <p>-Maintain IT life-cycle asset management of over 15,000 end user devices (desktops, laptops, monitors, printers, thin clients, and BlackBerrys).</p> <p>-Fund MDA Chief Information Office (CIO) civilian salaries.</p> <p><b>FY 2017 Plans:</b></p> <p>-Perform IT receiving; warehousing; shipping; transportation and movement; and excess property management functions for over 103,000 IT assets at MDA warehouses in Huntsville, Alabama; Fort Belvoir, VA; Colorado Springs, CO.</p> <p>-Maintain Defense Property Accountability System (DPAS) property accountability artifacts to support DoD Audit Readiness activities.</p> <p>-Sustain End User support (IT Help Desk and Client Support Services) 18 hours a day, 6 days a week for administrative and business information systems for approximately 8,350 MDA unclassified users and approximately 4,300 classified users.</p> <p>-Address approximately 50,000 Client Support tickets per year.</p> <p>-Respond to approximately 77,000 IT Help Desk tickets per year.</p> <p>-Monitor networks for user compliance and DoD policies, and report incidents.</p> <p>-Maintain Printing and Copy Services (872 multi-functional device printers and 51 classified/unclassified print servers).</p> <p>-Sustain email services (103 Exchange servers, 12 Smart Phone Enterprise servers, 14 Lync communication servers and 12 archive servers).</p> <p>-Sustain file services (33 classified/unclassified file servers and 4 storage area networks).</p> <p>-Maintain Directory Services (70 classified/unclassified domain controller servers).</p> <p>-Maintain Authentication services (Public Key Infrastructure/Common Area Card).</p> <p>-Maintain current hardware and software licenses for IT operational systems.</p> <p>-Maintain an Integrated Service Desk supporting 8,350 MDA users across all locations, resolving over 45,000 help desk tickets per quarter.</p> <p>-Maintain IT life-cycle asset management of over 15,000 end user devices (desktops, laptops, monitors, printers, thin clients, and BlackBerrys).</p> <p>-Fund MDA CIO civilian salaries.</p>				
<b>Title:</b> Unified Communications		13.617	14.314	13.997
<b>Articles:</b>		-	-	-
<b>Description:</b> Provides for implementation, operations and maintenance of VTC, wireless and telephony services.				
<b>FY 2015 Accomplishments:</b>				

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**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2015	FY 2016	FY 2017
<ul style="list-style-type: none"> <li>-Funded recurring leased circuits (wide area, local area and metropolitan area networks), maintenance agreements and licenses for MDA Enterprise network and telecommunications equipment (classified and unclassified mobile and telephony devices).</li> <li>-Operated, monitored, and sustained recurring classified and unclassified telecommunications equipment to comply with DoD policies and Global Information Grid architecture plan.</li> <li>-Operated, monitored, and sustained recurring classified and unclassified wireless services.</li> <li>-Operated, monitored, and sustained recurring operations for agency wide video teleconference rooms and equipment.</li> <li>-Provided and implemented engineering solutions for all unified communication services.</li> <li>-Sustained unclassified desktop instant messaging and collaboration capabilities to MDA users.</li> <li>-Funded Chief Information Office (CIO) civilian salaries.</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>-Develop and maintain artifacts to obtain authority to operate VTC systems.</li> <li>-Fund recurring leased circuits (wide area, local area and metropolitan area networks), maintenance agreements and licenses for MDA Enterprise network and telecommunications equipment (classified and unclassified mobile and telephony devices).</li> <li>-Operate, monitor, and sustain recurring classified and unclassified telecommunications equipment to comply with DoD policies and Global Information Grid (GIG) architecture plan.</li> <li>-Operate, monitor, and sustain recurring classified and unclassified wireless services, 2,401 unclassified users.</li> <li>-Operate, monitor, and sustain recurring operations for agency wide video teleconference rooms and equipment. 10,000+ sessions per month increasing 11% per year.</li> <li>-Provide and implement engineering solutions for all unified communication services.</li> <li>-Sustain unclassified desktop instant messaging and collaboration capabilities to MDA users.</li> <li>-Fund Chief Information Office (CIO) civilian salaries.</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>-Develop and maintain artifacts to obtain authority to operate VTC systems.</li> <li>-Fund recurring leased circuits (wide area, local area and metropolitan area networks), maintenance agreements and licenses for MDA Enterprise network and telecommunications equipment (classified and unclassified mobile and telephony devices).</li> <li>-Operate, monitor, and sustain recurring classified and unclassified telecommunications equipment to comply with DoD policies and Global Information Grid (GIG) architecture plan.</li> <li>-Operate, monitor, and sustain recurring classified and unclassified wireless services, 2,401 unclassified users.</li> <li>-Operate, monitor, and sustain recurring operations for agency wide video teleconference rooms and equipment. 10,000+ sessions per month increasing 11% per year.</li> <li>-Provide and implement engineering solutions for all unified communication services.</li> <li>-Sustain unclassified desktop instant messaging and collaboration capabilities to MDA users.</li> </ul>			

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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD30 / BMD Information Management Systems

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
-Fund CIO civilian salaries.			
<p><b>Title:</b> Business Automation Services</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> Provides for the implementation, operations and maintenance of business specific applications.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>-Sustained an MDA community cloud to host and sustain business applications, storage administration, hosting and operations and maintenance of the virtual environment.</li> <li>-Sustained portal-based Learning Management System</li> <li>-Hosted and provided business applications support for Program Resource Internet Database Environment (PRIDE), Information Management Program Activity control Tool (IMPACT), Standard Procurement System (SPS), Personnel Tracking System (PTS), Human Resource Tracking System (HRTS), Computer-aided Facilities Management(CAFM).</li> <li>-Provided server administration hosting licensing and management.</li> <li>-Maintained Integrated Access Control System and Diamond II badge system.</li> <li>-Maintained hardware and licenses for Defense Enrollment Eligibility Reporting System (DEERS)/Real-time Automated Personnel Identification System (RAPIDS) stations for issuing DoD identification smart cards to MDA employees.</li> <li>-Replaced End-of-Life hardware platform to support Microsoft SharePoint software migration (version 2007 to version 2013).</li> <li>-Funded MDA Chief Information Office (CIO) civilian salaries.</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>-Operate MDA Enterprise Applications/Systems at a minimum availability of 98%.</li> <li>-Operate and maintain 9 Defense Business Systems that meet the reporting requirements of Title 10 United States Code section 2222.</li> <li>-Conduct annual reviews of Defense Business Systems to ensure compliance with current Business Enterprise Architecture (BEA).</li> <li>-Design a solution and procure IT products that comply with Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d).</li> <li>-Sustain an MDA community cloud to host and sustain business applications, storage administration, hosting and operations and maintenance of the virtual environment.</li> <li>-Sustain portal-based Learning Management System.</li> <li>-Host and provide business applications support for Microsoft SharePoint, Program Resource Internet Database Environment (PRIDE), Information Management Program Activity control Tool (IMPACT), Standard Procurement System (SPS), Personnel Tracking System (PTS), Human Resource Tracking System (HRTS), Computer-aided Facilities Management (CAFM).</li> <li>-Provide server administration hosting licensing and management.</li> <li>-Maintain Integrated Access Control System and Diamond II badge system.</li> </ul>	6.608	7.976	7.930
	-	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>-Maintain hardware and licenses for Defense Enrollment Eligibility Reporting System (DEERS)/Real-time Automated Personnel Identification System (RAPIDS) stations for issuing DoD identification smart cards to MDA employees. -Fund MDA Chief Information Office (CIO) civilian salaries.</p> <p><b>FY 2017 Plans:</b></p> <p>-Operate MDA Enterprise Applications/Systems at a minimum availability of 98%. -Operate and maintain 9 Defense Business Systems that meet the reporting requirements of Title 10 United States Code section 2222. -Conduct annual reviews of Defense Business Systems to ensure compliance with current Business Enterprise Architecture (BEA). -Design a solution and procure IT products that comply with Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d). -Sustain an MDA community cloud to host and sustain business applications, storage administration, hosting and operations and maintenance of the virtual environment. -Sustain portal-based Learning Management System. -Host and provide business applications support for Microsoft SharePoint, Program Resource Internet Database Environment (PRIDE), Information Management Program Activity control Tool (IMPACT), Standard Procurement System (SPS), Personnel Tracking System (PTS), Human Resource Tracking System (HRTS), Computer-aided Facilities Management (CAFM). -Provide server administration hosting licensing and management. -Maintain Integrated Access Control System and Diamond II badge system. -Maintain hardware and licenses for Defense Enrollment Eligibility Reporting System (DEERS)/Real-time Automated Personnel Identification System (RAPIDS) stations for issuing DoD identification smart cards to MDA employees. -Fund MDA CIO civilian salaries.</p>				
<p><b>Title:</b> Portal and Data Services</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> Provides for the implementation, operations and maintenance of Portal, digital records and data archiving functions.</p> <p><b>FY 2015 Accomplishments:</b></p> <p>-Sustained the classified and unclassified MDA Knowledge On-line portal environment including data management, data storage, and data mining services providing access to over four hundred terabytes of Ballistic Missile Defense data available to 8,000 users. -Maintained a MDA Privacy Office, conducted privacy impact surveys and completed Civil Liberties compliance reporting. -Maintained compliance with Section 508 of the Rehabilitation Act to ensure electronic information technology is accessible to persons with disabilities.</p>		5.530 -	6.783 -	6.831 -

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>-Sustained the Ballistic Missile Defense System (BMDS) Integrated Master Schedule and the Ballistic Missile Defense (BMD) Asset Management Tool.</p> <p>-Managed a software assessment program and conducted reviews of proposed software applications for DoD compliance.</p> <p>-Sustained a DoD mandated Electronics Records Management system.</p> <p>-Provided MDA web-based training programs for information assurance, business applications, workforce certification, security, and ethics.</p> <p>-Provided for the engineering and sequenced migration of one billion software objects and knowledge files from the Microsoft SharePoint 2007 to the 2013 platform.</p> <p>-Funded MDA Chief Information Office (CIO) civilian salaries.</p> <p><b>FY 2016 Plans:</b></p> <p>-Manage demands on data storage capacity to accommodate the current and increasing number of users in the MDA RDT&amp;E community.</p> <p>-Provide twenty four hours a day, seven days a week, 365 days a year access to MDA test and administrative data and information to support the increasing demands on the MDA workforce around the world in the classified and unclassified environment.</p> <p>-Develop and maintain executive digital dashboards.</p> <p>-Sustain a DoD compliant Electronics Records Management system.</p> <p>-Digitize official records for more efficient storage and retrieval.</p> <p>-Sustain the classified and unclassified MDA Knowledge On-line portal environment including data management, data storage, and data mining services providing access to over four hundred terabytes of Ballistic Missile Defense data available to 8,000 users.</p> <p>-Maintain a MDA Privacy Office, conducted privacy impact surveys and completed Civil Liberties compliance reporting.</p> <p>-Maintain compliance with Section 508 of the Rehabilitation Act to ensure electronic information technology is accessible to persons with disabilities.</p> <p>-Sustain the Ballistic Missile Defense System (BMDS) Integrated Master Schedule and the Ballistic Missile Defense (BMD) Asset Management Tool.</p> <p>-Manage a software assessment program and conducted reviews of proposed software applications for DoD compliance.</p> <p>-Provide MDA web-based training programs for information assurance, business applications, workforce certification, security, and ethics.</p> <p>-Fund MDA Chief Information Office (CIO) civilian salaries.</p> <p><b>FY 2017 Plans:</b></p> <p>-Manage demands on data storage capacity to accommodate the current and increasing number of users in the MDA RDT&amp;E community.</p>			

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>-Provide twenty four hours a day, seven days a week, 365 days a year access to MDA test and administrative data and information to support the increasing demands on the MDA workforce around the world in the classified and unclassified environment.</p> <p>-Develop and maintain executive digital dashboards.</p> <p>-Sustain a DoD compliant Electronics Records Management system.</p> <p>-Digitize official records for more efficient storage and retrieval.</p> <p>-Sustain the classified and unclassified MDA Knowledge On-line portal environment including data management, data storage, and data mining services providing access to over four hundred terabytes of Ballistic Missile Defense data available to 8,000 users.</p> <p>-Maintain a MDA Privacy Office, conducted privacy impact surveys and completed Civil Liberties compliance reporting.</p> <p>-Maintain compliance with Section 508 of the Rehabilitation Act to ensure electronic information technology is accessible to persons with disabilities.</p> <p>-Sustain the BMDS Integrated Master Schedule and the BMD Asset Management Tool.</p> <p>-Manage a software assessment program and conducted reviews of proposed software applications for DoD compliance.</p> <p>-Provide MDA web-based training programs for information assurance, business applications, workforce certification, security, and ethics.</p> <p>-Fund MDA CIO civilian salaries.</p>			
<p><b>Title:</b> Network and Infrastructure Services (Retitled: MDA Special Purpose Processing Node - PBR16)</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> Provides for the implementation, operations, maintenance and Communications Security (COMSEC) for the MDA UNET/CNET. Real-world issues and the global demand for the Missile Defense Agency (MDA) BMDS capabilities are increasing the demand for more complex information technology products and highly specialized IT services.</p> <p><b>FY 2015 Accomplishments:</b></p> <p>-Sustained core communications distribution services across the MDA Enterprise consisting of two wide area networks, three metropolitan area networks, fourteen local area networks, one hundred eighty sub-networks and over five thousand network devices</p> <p>-Sustained two computing and data centers (Huntsville, Alabama and Colorado Springs, Colorado) across the MDA Enterprise including network operations and performance monitoring; Disaster Recovery and Continuity of Operations rehearsals; internet access management; and web filtering</p> <p>-Architected and developed plans to repair general IT service and business systems</p> <p>-Performed network tracking and analysis and reported metrics on equipment lifecycle and average time to repair</p> <p>-Planned, engineered and implemented sustainment projects for general IT service and business systems</p>	31.613 -	31.669 -	30.636 -

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>-Procured, received, inventoried, and managed IT equipment to include network devices and desktop and laptop computers</p> <p>-Provided Communications Security (COMSEC) operations and maintenance services for over 4,000 COMSEC items</p> <p>-Funded MDA Chief Information Office (CIO) civilian salaries.</p> <p><b>FY 2016 Plans:</b></p> <p>-Sustain core communications distribution services across the MDA Enterprise consisting of six wide area networks, 16 metropolitan area networks, 288 local area networks, two principle sites, 11 major sites, 205 remote sites</p> <p>-Sustain two SPPNs (Huntsville, Alabama and Colorado Springs, Colorado) across the MDA Enterprise including network operations and performance monitoring; Disaster Recovery and Continuity of Operations rehearsals; internet access management; and web filtering</p> <p>-Maintain MDA IT Infrastructure Services at a 99.99% availability level.</p> <p>-Operate and maintain the MDA SPPNs consisting of 1202 servers both classified and unclassified, 500 equipment racks, 148 network devices (routers, switches, Wide Area Network (WAN) accelerators, firewalls, intrusion detection systems (IDS)) and back office IT infrastructure associated with 10,000 Voice-over-Internet Protocol (VoIP) telephones, 2400 wireless devices, 50 secure wireless devices</p> <p>-Continue server virtualization to meet DoD mandates and Federal green standards, 22% still require virtualization.</p> <p>-Develop solutions, provide designs and execute transition plans, consistent with the architecture roadmap</p> <p>-Provide Detailed Designs, Implementation Plans, Interface Control Document (ICD) updates, Information Assurance assessments, Change Management, and DR COOP implementation engineering services.</p> <p>-Assist in performing configuration tests and assisting the O&amp;M RBA crews with execution of operational readiness tests.</p> <p>-Manage MDA increasing need of data storage capacity, over 5 Petabytes.</p> <p>-Support constant modifications and reconfigurations of network infrastructure for mission and event unique configurations.</p> <p>-Architect and develop plans to repair general IT service and business systems</p> <p>-Perform network tracking and analysis and reported metrics on equipment lifecycle and average time to repair</p> <p>-Plan, engineer and implement sustainment projects for general IT service and business systems</p> <p>-Procure, receive, inventory, and manage IT equipment to include network devices and desktop and laptop computers</p> <p>-Fund MDA Chief Information Office (CIO) civilian salaries.</p> <p><b>FY 2017 Plans:</b></p> <p>-Sustain core communications distribution services across the MDA Enterprise consisting of six wide area networks, 16 metropolitan area networks, 288 local area networks, two principle sites, 11 major sites, 205 remote sites</p> <p>-Sustain two SPPNs (Huntsville, Alabama and Colorado Springs, Colorado) across the MDA Enterprise including network operations and performance monitoring; Disaster Recovery and Continuity of Operations rehearsals; internet access management; and web filtering</p> <p>-Maintain MDA IT Infrastructure Services at a 99.99% availability level.</p>			

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>-Operate and maintain the MDA SPPNs consisting of 1202 servers both classified and unclassified, 500 equipment racks, 148 network devices (routers, switches, Wide Area Network (WAN) accelerators, firewalls, intrusion detection systems (IDS)) and back office IT infrastructure associated with 10,000 Voice-over-Internet Protocol (VoIP) telephones, 2400 wireless devices, 50 secure wireless devices</p> <p>-Continue server virtualization to meet DoD mandates and Federal green standards, 22% still require virtualization.</p> <p>-Develop solutions, provide designs and execute transition plans, consistent with the architecture roadmap</p> <p>-Provide Detailed Designs, Implementation Plans, Interface Control Document (ICD) updates, Information Assurance assessments, Change Management, and DR COOP implementation engineering services.</p> <p>-Assist in performing configuration tests and assisting the O&amp;M RBA crews with execution of operational readiness tests.</p> <p>-Manage MDA increasing need of data storage capacity, over 5 Petabytes.</p> <p>-Support constant modifications and reconfigurations of network infrastructure for mission and event unique configurations.</p> <p>-Architect and develop plans to repair general IT service and business systems</p> <p>-Perform network tracking and analysis and reported metrics on equipment lifecycle and average time to repair</p> <p>-Plan, engineer and implement sustainment projects for general IT service and business systems</p> <p>-Procure, receive, inventory, and manage IT equipment to include network devices and desktop and laptop computers</p> <p>-Fund MDA CIO civilian salaries.</p>				
<p><b>Title:</b> Information Technology (IT) Planning and Solutions</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> Provides IT engineering support for new requirements analysis, design, planning and implementation of IT solutions to real-world issues and an increasing demand for more complex IT products and highly specialized IT services.</p> <p><b>FY 2015 Accomplishments:</b></p> <p>-Supported the MDA CIO Enterprise Architecture Board, Program Management Integration Board, and Change Control Board.</p> <p>-Updated and maintained current Enterprise architecture documentation.</p> <p>-Provided engineering support for change management, configuration management, validation testing and quality assurance.</p> <p>-Managed MDA customer IT requirements planning, engineering and project management.</p> <p>-Supported MDA Command Group IT project planning and documentation.</p> <p>-Maintained asset management of IT equipment in accordance with DoD policies.</p> <p>-Provided planning, budgeting, and management oversight of IT projects.</p> <p>-Ensured compliance with Federal Laws and DoD policies, directives and regulations, including: Clinger-Cohen Act, the Federal Information Security Management Act, and Office of Management and Budget (OMB) IT budget reporting policies.</p> <p>-Funded MDA Chief Information Office (CIO) civilian and matrix civilian salaries.</p> <p><b>FY 2016 Plans:</b></p>		13.991 -	14.691 -	14.375 -

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<ul style="list-style-type: none"> <li>-Design and engineer IT solutions for DoD directed JIE projects.</li> <li>-Provide DoD Architecture Framework compliant engineering designs and solutions.</li> <li>-Provide project planning and oversight for approximately 150 IT projects per year.</li> <li>-Process over 800 Agency-wide IT commodity requests per year.</li> <li>-Support the MDA CIO Enterprise Architecture Board, Program Management Integration Board, and Change Control Board.</li> <li>-Update and maintain current Enterprise architecture documentation.</li> <li>-Provide engineering support for change management, configuration management, validation testing and quality assurance.</li> <li>-Manage MDA customer IT requirements planning, engineering and project management.</li> <li>-Support MDA Command Group IT project planning and documentation.</li> <li>-Provide planning, budgeting, and management oversight of the Agency-wide IT program.</li> <li>-Ensure compliance with Federal Laws and DoD policies, directives and regulations, including: Clinger-Cohen Act, the Federal Information Security Management Act, and Office of Management and Budget (OMB) IT budget reporting policies.</li> <li>-Fund MDA Chief Information Office (CIO) civilian and matrix civilian salaries.</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>-Design and engineer IT solutions for DoD directed JIE projects.</li> <li>-Provide DoD Architecture Framework compliant engineering designs and solutions.</li> <li>-Provide project planning and oversight for approximately 150 IT projects per year.</li> <li>-Process over 800 Agency-wide IT commodity requests per year.</li> <li>-Support the MDA CIO Enterprise Architecture Board, Program Management Integration Board, and Change Control Board.</li> <li>-Update and maintain current Enterprise architecture documentation.</li> <li>-Provide engineering support for change management, configuration management, validation testing and quality assurance.</li> <li>-Manage MDA customer IT requirements planning, engineering and project management.</li> <li>-Support MDA Command Group IT project planning and documentation.</li> <li>-Provide planning, budgeting, and management oversight of the Agency-wide IT program.</li> <li>-Ensure compliance with Federal Laws and DoD policies, directives and regulations, including: Clinger-Cohen Act, the Federal Information Security Management Act, and OMB IT budget reporting policies.</li> <li>-Fund MDA CIO civilian and matrix civilian salaries.</li> </ul>				
<b>Accomplishments/Planned Programs Subtotals</b>		90.761	95.650	92.628

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency										<b>Date:</b> February 2016	
<b>Appropriation/Budget Activity</b> 0400 / 4				<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs				<b>Project (Number/Name)</b> MD30 / BMD Information Management Systems			

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

Line Item	FY 2015	FY 2016	FY 2017	FY 2017	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Cost To	
			Base	OCO	Total					Complete	Total Cost
• 0603176C: <i>Advanced Concepts and Performance Assessment</i>	9.999	12.139	17.880	-	17.880	12.599	12.897	13.004	13.221	Continuing	Continuing
• 0603177C: <i>Discrimination Sensor Technology</i>	35.223	28.200	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• 0603178C: <i>Weapons Technology</i>	61.396	51.153	71.843	-	71.843	69.004	53.745	66.400	67.487	Continuing	Continuing
• 0603180C: <i>Advanced Research</i>	18.476	17.364	23.433	-	23.433	19.870	20.529	21.131	21.494	Continuing	Continuing
• 0603294C: <i>Common Kill Vehicle Technology</i>	24.836	61.753	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	161.298	212.230	206.834	-	206.834	231.105	197.018	250.227	260.613	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	863.965	1,269.913	862.080	-	862.080	701.311	585.079	600.710	535.614	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	260.347	228.392	230.077	-	230.077	144.893	141.815	171.644	158.421	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	761.646	830.647	959.066	-	959.066	841.738	700.596	592.940	528.744	Continuing	Continuing
• 0603893C: <i>Space Tracking and Surveillance System</i>	29.530	28.605	32.129	-	32.129	33.869	34.884	36.203	36.821	Continuing	Continuing
• 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	7.560	21.507	20.690	-	20.690	15.670	11.641	11.796	11.992	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management &amp; Communication</i>	420.516	429.853	439.617	-	439.617	413.198	432.763	454.601	462.065	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	44.220	47.898	47.776	-	47.776	49.621	50.564	53.151	54.042	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	53.972	47.939	54.750	-	54.750	53.894	55.524	58.100	59.029	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	64.610	71.266	68.787	-	68.787	73.329	70.423	85.881	74.189	Continuing	Continuing

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency										<b>Date:</b> February 2016	
<b>Appropriation/Budget Activity</b> 0400 / 4				<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs				<b>Project (Number/Name)</b> MD30 / BMD Information Management Systems			

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

Line Item	FY 2015	FY 2016	FY 2017	FY 2017	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Cost To	
			Base	OCO	Total					Complete	Total Cost
• 0603913C: <i>Israeli Cooperative Programs</i>	268.842	267.595	103.835	-	103.835	105.612	108.271	110.009	112.168	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	354.414	281.740	293.441	-	293.441	337.537	322.334	346.134	351.933	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	447.424	527.563	563.576	-	563.576	471.059	431.349	454.830	462.429	Continuing	Continuing
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	121.413	34.970	43.293	-	43.293	29.045	19.259	21.294	21.646	Continuing	Continuing
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	259.278	172.645	106.038	-	106.038	0.000	0.000	0.000	0.000	0	537.961
• 0901598C: <i>Management HQ - MDA</i>	35.598	35.871	31.160	-	31.160	29.814	27.889	27.131	27.737	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

In 2016, the MDA Joint National Integration Center Research and Development (JRDC) contract is scheduled to be recompeted and will be called the Integrated Research and Development for Enterprise Solutions (IRES).

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD30 / BMD Information Management Systems
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

**Remarks**  
N/A

<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
End User Support - End User Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay : AL, CO, NM, VA	5.448	3.116		3.121	Oct 2015	3.148	Oct 2016	-		3.148	Continuing	Continuing	Continuing
End User Support - End User Civilian Travel	Allot	MDA Civilian Travel : AL, AK, CA, CO, HI, NM, VA	0.446	0.206		0.223	Oct 2015	0.228	Oct 2016	-		0.228	Continuing	Continuing	Continuing
End User Support - End User IT Hardware/ Software Support	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	8.799	7.778		8.590	Oct 2015	7.483	Oct 2016	-		7.483	Continuing	Continuing	Continuing
End User Support - End User IT Licenses	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	8.431	1.107		1.138	Oct 2015	1.161	Oct 2016	-		1.161	Continuing	Continuing	Continuing
End User Support - End User Operational Support	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	24.437	7.195		7.145	Oct 2015	6.839	Oct 2016	-		6.839	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay : AI, CO, VA	2.644	1.081		1.092	Oct 2015	1.102	Oct 2016	-		1.102	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Leased Communications/ Licenses	MIPR	DISA/DREN/IT2S : AL, AK, CA, CO, HI, NM, VA	8.907	4.869		5.973	Oct 2015	6.093	Oct 2016	-		6.093	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency												Date: February 2016			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603890C / BMD Enabling Programs				MD30 / BMD Information Management Systems							
Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Unified Communications - Unified Communications Operational Support	Allot	Northrop Grumman : AL, CO, VA	2.776	2.051		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Unified Communications - Unified Communications VTC Operations Support	C/CPIF	NMR : AL, AK, CO, NM, VA	9.790	5.616		7.249	Oct 2015	6.802	Oct 2016	-		6.802	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay : AL, CO, VA	1.475	0.772		0.780	Oct 2015	0.472	Oct 2016	-		0.472	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Licenses	C/CPAF	Northrop Grumman : AL, CO, VA	1.749	0.897		0.916	Oct 2015	0.934	Oct 2016	-		0.934	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Operational Support	C/CPAF	Northrop Grumman : AL, CO, VA	7.308	4.919		6.259	Oct 2015	6.503	Oct 2016	-		6.503	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Services Support	MIPR	CACI : AL, CO, VA	0.020	0.020		0.021	Oct 2015	0.021	Oct 2016	-		0.021	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Civilian Pay/Travel/PCS	Allot	MDS Civilian Pay : AL, CO, VA	1.770	0.926		0.936	Oct 2015	0.944	Oct 2016	-		0.944	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Licenses and Maintenance	C/CPAF	Northrop Grumman : AL, CO, VA	3.744	1.472		1.573	Oct 2015	1.605	Oct 2016	-		1.605	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Operational	C/CPAF	Online Subscriptions Services : AL, CO, VA	0.623	0.399		0.408	Oct 2015	0.416	Oct 2016	-		0.416	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Operational Support	C/FFP	NMR : AL, CO, VA	6.489	2.733		3.866	Oct 2015	3.866	Oct 2016	-		3.866	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency												Date: February 2016			
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)					
0400 / 4					PE 0603890C / BMD Enabling Programs					MD30 / BMD Information Management Systems					
Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network and Infrastructure Services (Retitled: MDA Special Purpose Processing Node - PBR16) - Network and Infrastructure Services Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay : AL, CO, VA	2.210	1.235		1.271	Oct 2015	1.259	Oct 2016	-		1.259	Continuing	Continuing	Continuing
Network and Infrastructure Services (Retitled: MDA Special Purpose Processing Node - PBR16) - Network and Infrastructure Services Licenses	C/CPAF	Northrop Grumman : AL, CO, VA	24.590	13.485		13.275	Oct 2015	13.450	Oct 2016	-		13.450	Continuing	Continuing	Continuing
Network and Infrastructure Services (Retitled: MDA Special Purpose Processing Node - PBR16) - Network and Infrastructure Services Operational Support	C/CPAF	Northrop Grumman : AL, CO, VA	17.037	16.893		17.123	Oct 2015	15.927	Oct 2016	-		15.927	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Advisory and Assistance Services	C/CPFF	Colsa : AL, CO, VA	1.526	4.544		4.628	Oct 2015	4.713	Oct 2016	-		4.713	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay : AL, CO, VA	1.770	0.926		0.815	Oct 2015	0.352	Oct 2016	-		0.352	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions OMB,OSD, and DOD Compliance Monitoring	C/CPFF	Colsa : AL, CO, VA	0.510	0.160		0.164	Oct 2015	0.167	Oct 2016	-		0.167	Continuing	Continuing	Continuing

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD30 / BMD Information Management Systems
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<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
and Reporting/Contract Deliverable															
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Operational Support	C/CPAF	Northrop Grumman : AL, CO, VA	8.007	7.366		7.514	Oct 2015	7.664	Oct 2016	-		7.664	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - MDA Agency Business Operations	Allot	MDA Business Operations : AL, CO, VA	0.909	0.995		1.570	Oct 2015	1.479	Oct 2016	-		1.479	Continuing	Continuing	Continuing
<b>Subtotal</b>			151.415	90.761		95.650		92.628		-		92.628	-	-	-

**Remarks**  
N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

**Remarks**  
N/A

<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

**Remarks**  
N/A

**UNCLASSIFIED**

<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2017 Missile Defense Agency								<b>Date:</b> February 2016					
<b>Appropriation/Budget Activity</b> 0400 / 4				<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs				<b>Project (Number/Name)</b> MD30 / BMD Information Management Systems					
	<b>Prior Years</b>	<b>FY 2015</b>		<b>FY 2016</b>		<b>FY 2017 Base</b>		<b>FY 2017 OCO</b>		<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	151.415	90.761		95.650		92.628		-		92.628	-	-	-

**Remarks**

N/A

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD30 / BMD Information Management Systems
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Significant Event Complete ▲      Milestone Decision Complete ★      Element Test Complete ◆      System Level Test Complete ●      Complete Activity ✦  
 Significant Event Planned △      Milestone Decision Planned ☆      Element Test Planned ◇      System Level Test Planned ○      Planned Activity ✧

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications Follow-On					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - Follow-On					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - Follow-On					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Revise and Test Contingency Plans for Information Technology Systems - Follow-On					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - Follow-On					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Procure, Implement, and Asset Control for Information Technology Operational Systems - Follow-On					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications	✦	✦	✦	✦																								
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems	✦	✦	✦	✦																								
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week	✦	✦	✦	✦																								
Revise and Test Contingency Plans for Information Technology Systems	✦	✦	✦	✦																								
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services	✦	✦	✦	✦																								
Procure, Implement, and Asset Control for Information Technology Operational Systems	✦	✦	✦	✦																								

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2017 Missile Defense Agency</b>		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD30 / BMD Information Management Systems

Significant Event Complete ▲      Milestone Decision Complete ★      Element Test Complete ◆      System Level Test Complete ●      Complete Activity +  
 Significant Event Planned △      Milestone Decision Planned ☆      Element Test Planned ◇      System Level Test Planned ○      Planned Activity +

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce	+	+	+	+																								
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise	+	+	+	+																								
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications	+	+	+	+																								
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool	+	+	+	+																								
Sustain the Information Technology Infrastructure Across the MDA Enterprise	+	+	+	+																								
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle	+	+	+	+																								
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - Follow-On					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - Follow-On					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - Follow-On					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - Follow-On					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Sustain the Information Technology Infrastructure Across the MDA Enterprise - Follow-On					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - Follow-On					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD30 / BMD Information Management Systems

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications Follow-On	1	2016	4	2021
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - Follow-On	1	2016	4	2021
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - Follow-On	1	2016	4	2021
Revise and Test Contingency Plans for Information Technology Systems - Follow-On	1	2016	4	2021
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - Follow-On	1	2016	4	2021
Procure, Implement, and Asset Control for Information Technology Operational Systems -Follow-On	1	2016	4	2021
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications	1	2015	4	2015
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems	1	2015	4	2015
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week	1	2015	4	2015
Revise and Test Contingency Plans for Information Technology Systems	1	2015	4	2015
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services	1	2015	4	2015
Procure, Implement, and Asset Control for Information Technology Operational Systems	1	2015	4	2015
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce	1	2015	4	2015
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise	1	2015	4	2015

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD30 / BMD Information Management Systems
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<b>Events</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications	1	2015	4	2015
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool	1	2015	4	2015
Sustain the Information Technology Infrastructure Across the MDA Enterprise	1	2015	4	2015
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle	1	2015	4	2015
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - Follow-On	1	2016	4	2021
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - Follow-On	1	2016	4	2021
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - Follow-On	1	2016	4	2021
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - Follow-On	1	2016	4	2021
Sustain the Information Technology Infrastructure Across the MDA Enterprise - Follow-On	1	2016	4	2021
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - Follow-On	1	2016	4	2021

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs				<b>Project (Number/Name)</b> MC30 / Cyber Operations			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
MC30: <i>Cyber Operations</i>	12.314	19.189	20.017	22.881	-	22.881	21.019	21.184	23.922	24.396	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

The increase of \$2.864M between FY 2016 to FY 2017 provides for compliance with expanding White House, Secretary of Defense, and U.S. Cyber Command DoD-wide Cybersecurity Initiatives, and the FISMA. The most significant includes: \$2.550 million increase for the tri-annual license renewal of ArcSight. This helps safeguard MDA data by giving complete visibility into activity across the IT infrastructure-including external threats such as malware and hackers, internal threats such as data breaches and fraud, risks from application flaws and configuration changes, and compliance pressures from failed audits. This software enables MDA to collect, analyze, and assess IT security, enterprise security and non-security events for rapid identification, prioritization and response.

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

A number of key IT strategies were also identified in the DoD Information Technology Enterprise Strategy and Roadmap issued by the Deputy Secretary of Defense in 2011. The IT Roadmap specifically addresses the need to improve Cybersecurity. It states that DoD networks are under constant attack from cybersecurity threats launched from various sources. MDA must meet the National Command Authority Directives for rapid deployment of the BMDS while complying with the key principles of the Cybersecurity standards to ensure MDA remains a secure member of the DoD Information Network (DODIN).

DoD Instruction 8500.01 “Cybersecurity” issued in March 2014, requires continuous monitoring, data analysis, reporting and incident mitigation of DoD classified and unclassified, mission, test and administrative networks. To comply with the Instruction, MDA must implement a multi-tiered cybersecurity risk management capability to protect critical BMD data and systems from rapidly evolving internal and external threats.

The issuance of DoD Instruction 8510.01, “Risk Management Framework (RMF) Information Technology” in March 2014 requires additional resources to implement, manage, monitor and report as a result of a thirty five percent increase in controls (237 controls with 817 enhancements). DoD 8510.01 also states that “resources for implementing the RMF must be identified and allocated as part of the Defense planning, programming, budgeting, and execution process.” The Controls must be tested on all IT supporting research, development, test and evaluation and DoD-controlled IT operated by a contractor or other entity on behalf of DoD and reported.

The Cyber Operations budget project in the Enabling Program Element is executed by the MDA Chief Information Officer who is the Agency Authorizing Official (AO) for MDA Administrative information technology systems. The project provides funds to sustain the Risk Management Framework (RMF) and Controls Validation Testing (CVT) activities, analysis of validation results, risk assessments and reviews of proposed Program Manager/Information Systems Security Officer (PM/ISSO) Plan of Action and Milestones (POA&M) for the MDA mission, test and administrative systems. It maintains the Certification and Accreditation (C&A) data repository, capturing the RMF documentation (artifacts, validation results, and Cybersecurity Risk Assessment results, and Authorizing Official (AO) accreditation decisions) and POA&M on all MDA information systems. It support the monitoring and tracking of Cybersecurity mitigations detailed in IT security POA&Ms. Activities include preparation of C&A documentation and accreditation recommendations to the MDA PM/ISSO and AO. Independent Verification and Validation (IV&V) team actions ensure the availability, integrity, confidentiality and non-repudiation of the MDA mission, test and administrative systems. Activities in the Project are necessary to comply with FISMA.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MC30 / Cyber Operations
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This project funds the MDA Security Operations Center (SOC), responsible for monitoring, managing, patching, and maintaining MDA network and core IT services; issuing and tracking Technical Compliance Orders; and coordinating overarching Enterprise NetOps. The SOC provides the network security operations centers and supporting processes to protect and defend BMDS and the MDA Enterprise information and information systems.

The MDA Computer Emergency Response Team (CERT), funded in this project, monitors the classified and unclassified information technology MDA administrative IT networks and report vulnerabilities. The MDA CERT coordinates with U.S. Cyber Command to identify and implement network vulnerability updates and patches to comply with U.S. Cyber Command vulnerabilities identified for DoD networks.

The project funds IA governance management and administrative management support, annual Agency-wide computer-based IA training and metrics reporting, implementation of Public Key Infrastructure and Enabling and COMSEC related activities.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2015	FY 2016	FY 2017
<p><b>Title:</b> Information Assurance/Computer Network Defense (IA/CND)</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> Provides for the certification of Information Technology networks and systems, monitoring and computer emergency response services.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>-Monitored and defended MDA mission, test, and administrative information systems 24 hours a day, 7 days a week, 365 days a year.</li> <li>-Collected, analyzed, and reported vulnerability and cyber warfare attack metrics to the MDA Chief Information Officer (CIO), MDA leadership, and U.S. Cyber Command.</li> <li>-Ensured MDA mission, test, and administrative systems are operated securely in accordance with DoD Information Assurance Certification and Accreditation policies.</li> <li>-Implemented Information Assurance Vulnerability Alerts and Communication Tasking Orders remediation and patches.</li> <li>-Prepared and maintained current certification and accreditation documentation for general service networks reported to DoD and Office of Management and Budget.</li> <li>-Managed data-at-rest encryption to ensure compliance with Global Information Grid mandated policies.</li> <li>-Revised and updated Information Assurance certification and accreditation packages for system level Ballistic Missile Defense Systems reported to DoD and Office of Management and Budget.</li> <li>-Managed the Information Assurance Workforce Improvement Program to certify Cybersecurity professionals and report compliance in accordance with Federal Information Security Management Act (FISMA) and Information Assurance Workforce Improvement Program (DoD Manual 8570.1), achieving the DoD certification goal.</li> <li>-Completed DoD mandated annual Cybersecurity user training for the MDA workforce.</li> <li>-Provided Information Assurance engineering and planning guidance and vulnerability assessment for all MDA Information Technology acquisition programs.</li> </ul>	<p>19.189</p> <p align="center">-</p>	<p>20.017</p> <p align="center">-</p>	<p>22.881</p> <p align="center">-</p>

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MC30 / Cyber Operations
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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<p>-Funded MDA Chief Information Office (CIO) Cybersecurity civilian salaries.</p> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>-Document and maintain Standard Operating Instructions/Procedures for consistent interface with the MDA BMDS Network Operations Support Center (BNOSC) and the BMDS elements.</li> <li>-Publish MDA policies to incorporate new requirements stated in DoDI 8510.01 Risk Management Framework (RMF) to comply with 237 new controls and 817 control enhancements into controls validation testing of BMDS elements and networks.</li> <li>-Test RMF controls on all IT supporting research, development, test and evaluation and DoD-controlled IT operated by a contractor or other entity on behalf of DoD and reported.</li> <li>-Conduct RMF analysis and reporting for the BMDS such as evaluation of residual risk by incorporating current and proposed BMDS monitoring and mitigations.</li> <li>-Maintain a current Information Assurance risk and residual risk assessment of the BMDS.</li> <li>-Provide coordination on all IT projects and remote sites for Cybersecurity compliance.</li> <li>-Maintain MDA Computer Emergency Response Team (MDA CERT) as a fully accredited Tier II Computer Network Defense Service provider (CNDSP) in accordance with CJCSI 6510.01F and DoD O-8530.1.</li> <li>-Perform CNDSP services (protect, detect, respond and sustain) for all MDA Admin/GENSER, MDA Mission and test networks and enclaves 24 hours per day, seven days a week.</li> <li>-Conduct penetration and application testing that looks for vulnerabilities and issues using a number of tactics, technical and procedures.</li> <li>-Implement methodologies and goals to identify insecure and unauthorized vectors of access to networks or applications, analyze the threat, attempt to exploit the vectors and confirm existence and analyze the risk for exploiting an application, network or service.</li> <li>-Conduct vulnerability scanning of MDA network to assess risks to MDA data from inside and outside sources.</li> <li>-Conduct monthly information assurance vulnerability audits.</li> <li>-Issue and track implementation of Information Assurance Vulnerability Alerts (IAVA), Bulletins (IAVB) and Technical Advisories (IAVT).</li> <li>-Track ports, protocols, and services.</li> <li>-Perform network security monitoring of all MDA subscriber networks and enclaves.</li> <li>-Conduct system forensic analysis, review content of compromised system, document files and data, and identify tactics, techniques and procedures used by an attacker to gain access.</li> <li>-Develop and maintain the RMF package for the BMDS Mission System to support a full Authorization to Operation (ATO).</li> <li>-Compile and validate BMDS Mission Element-level certification and accreditation documents to include BMDS Element-level SIPs, DIPs, C&amp;A Scorecards, POA&amp;M artifacts (CVT reports IA Risk Assessments, Primary RMF artifacts).</li> <li>-Interface with Central Command (CENTCOM) to provide BMDS Mission RMF package.</li> <li>-Conduct an annual IA Security review of the BMDS in accordance with 8510.01 and provide an analysis of changes in IA posture.</li> </ul>			
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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MC30 / Cyber Operations
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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<ul style="list-style-type: none"> <li>-Manage the Information Assurance Workforce Improvement Program to certify Cybersecurity professionals and report compliance in accordance with Federal Information Security Management Act (FISMA) and Information Assurance Workforce Improvement Program (DoD Manual 8570.1), achieving the DoD certification goal.</li> <li>-Complete DoD mandated annual Cybersecurity user training for the MDA workforce.</li> <li>-Manage data-at-rest encryption to ensure compliance with Global Information Grid mandated policies.</li> <li>-Collect, analyze, and report vulnerability and cyber warfare attack metrics to the MDA Chief Information Officer (CIO), MDA leadership, and U.S. Cyber Command.</li> <li>-Ensure MDA mission, test, and administrative systems are operated securely in accordance with DoD Information Assurance Certification and Accreditation policies.</li> <li>-Implement Information Assurance Vulnerability Alerts and Communication Tasking Orders remediation and patches.</li> <li>-Prepare and maintain current certification and accreditation documentation for general service networks reported to DoD and Office of Management and Budget.</li> <li>-Provide Information Assurance engineering and planning guidance and vulnerability assessment for all MDA Information Technology acquisition programs.</li> <li>-Fund MDA Chief Information Office (CIO) Cybersecurity civilian salaries.</li> </ul> <p><b>FY 2017 Plans:</b> The increase of \$2.864M between FY 2016 to FY 2017 provides for compliance with expanding White House, Secretary of Defense, and U.S. Cyber Command DoD-wide Cybersecurity Initiatives, and the FISMA. The most significant includes: \$2.550 million increase for the tri-annual license renewal of ArcSight. This helps safeguard MDA data by giving complete visibility into activity across the IT infrastructure-including external threats such as malware and hackers, internal threats such as data breaches and fraud, risks from application flaws and configuration changes, and compliance pressures from failed audits. This software enables MDA to collect, analyze, and assess IT security, enterprise security and non-security events for rapid identification, prioritization and response.</p> <ul style="list-style-type: none"> <li>-Document and maintain Standard Operating Instructions/Procedures for consistent interface with the MDA BMDS Network Operations Support Center (BNOSC) and the BMDS elements.</li> <li>-Publish MDA policies to incorporate new requirements stated in DoDI 8510.01 Risk Management Framework (RMF) to comply with 237 new controls and 817 control enhancements into controls validation testing of BMDS elements and networks.</li> <li>-Test RMF controls on all IT supporting research, development, test and evaluation and DoD-controlled IT operated by a contractor or other entity on behalf of DoD and reported.</li> <li>-Conduct RMF analysis and reporting for the BMDS such as evaluation of residual risk by incorporating current and proposed BMDS monitoring and mitigations.</li> <li>-Maintain a current Information Assurance risk and residual risk assessment of the BMDS.</li> <li>-Provide coordination on all IT projects and remote sites for Cybersecurity compliance.</li> </ul>			
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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / <i>BMD Enabling Programs</i>	<b>Project (Number/Name)</b> MC30 / <i>Cyber Operations</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<ul style="list-style-type: none"> <li>-Maintain MDA Computer Emergency Response Team (MDA CERT) as a fully accredited Tier II Computer Network Defense Service provider (CNDSP) in accordance with CJCSI 6510.01F and DoD O-8530.1.</li> <li>-Perform CNDSP services (protect, detect, respond and sustain) for all MDA Admin/GENSER, MDA Mission and test networks and enclaves 24 hours per day, seven days a week.</li> <li>-Conduct penetration and application testing that looks for vulnerabilities and issues using a number of tactics, technical and procedures.</li> <li>-Implement methodologies and goals to identify insecure and unauthorized vectors of access to networks or applications, analyze the threat, attempt to exploit the vectors and confirm existence and analyze the risk for exploiting an application, network or service.</li> <li>-Conduct vulnerability scanning of MDA network to assess risks to MDA data from inside and outside sources.</li> <li>-Conduct monthly information assurance vulnerability audits.</li> <li>-Issue and track implementation of Information Assurance Vulnerability Alerts (IAVA), Bulletins (IAVB) and Technical Advisories (IAVT).</li> <li>-Track ports, protocols, and services.</li> <li>-Perform network security monitoring of all MDA subscriber networks and enclaves.</li> <li>-Conduct system forensic analysis, review content of compromised system, document files and data, and identify tactics, techniques and procedures used by an attacker to gain access.</li> <li>-Develop and maintain the RMF package for the BMDS Mission System to support a full Authorization to Operation (ATO).</li> <li>-Compile and validate BMDS Mission Element-level certification and accreditation documents to include BMDS Element-level SIPs, DIPs, C&amp;A Scorecards, POA&amp;M artifacts (CVT reports IA Risk Assessments, Primary RMF artifacts).</li> <li>-Interface with Central Command (CENTCOM) to provide BMDS Mission RMF package.</li> <li>-Conduct an annual IA Security review of the BMDS in accordance with 8510.01 and provide an analysis of changes in IA posture.</li> <li>-Manage the Information Assurance Workforce Improvement Program to certify Cybersecurity professionals and report compliance in accordance with Federal Information Security Management Act (FISMA) and Information Assurance Workforce Improvement Program (DoD Manual 8570.1), achieving the DoD certification goal.</li> <li>-Complete DoD mandated annual Cybersecurity user training for the MDA workforce.</li> <li>-Manage data-at-rest encryption to ensure compliance with Global Information Grid mandated policies.</li> <li>-Collect, analyze, and report vulnerability and cyber warfare attack metrics to the MDA Chief Information Officer (CIO), MDA leadership, and U.S. Cyber Command.</li> <li>-Ensure MDA mission, test, and administrative systems are operated securely in accordance with DoD Information Assurance Certification and Accreditation policies.</li> <li>-Implement Information Assurance Vulnerability Alerts and Communication Tasking Orders remediation and patches.</li> <li>-Prepare and maintain current certification and accreditation documentation for general service networks reported to DoD and Office of Management and Budget.</li> </ul>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MC30 / Cyber Operations
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	FY 2015	FY 2016	FY 2017
-Provide Information Assurance engineering and planning guidance and vulnerability assessment for all MDA Information Technology acquisition programs. -Fund MDA Chief Information Office (CIO) Cybersecurity civilian salaries.			
<b>Accomplishments/Planned Programs Subtotals</b>	19.189	20.017	22.881

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MC30 / Cyber Operations
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<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Information Assurance/ Computer Network Defense (IA/CND) - BMDs IA Advisory and Assistance Services	C/CPFF	Booz Allen Hamilton : AL, CO, VA	0.630	0.641		1.308	Oct 2015	1.334	Oct 2016	-		1.334	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/IA Advisory and Assistance Services	C/CPFF	Torch Technologies : AL, CO, VA	2.737	2.783		2.529	Oct 2015	2.580	Oct 2016	-		2.580	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/ IA Civilian Travel	Allot	MDA Civilian Travel : AL, AK, CA, CO, HI, NM, VA	0.088	0.105		0.104	Oct 2015	0.106	Oct 2016	-		0.106	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/ IA Civilian pay/Travel/PCS	Allot	MDA Civilian Pay : AL, CO, VA	2.064	2.778		2.809	Oct 2015	2.844	Oct 2016	-		2.844	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/ IA Comsec	MIPR	NSA : AL, CO, VA	0.104	0.105		0.108	Oct 2015	0.110	Oct 2016	-		0.110	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/ IA Licenses	C/CPAF	Northrop Grumman : AL, CO, VA	0.000	3.737		2.516	Oct 2015	5.218	Oct 2016	-		5.218	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/ IA Operational Support	C/FFP	Northrop Grumman : AL, CO, VA	6.691	9.040		10.643	Oct 2015	10.689	Oct 2016	-		10.689	Continuing	Continuing	Continuing
<b>Subtotal</b>			12.314	19.189		20.017		22.881		-		22.881	-	-	-

**Remarks**  
N/A

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**Exhibit R-3, RDT&E Project Cost Analysis:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MC30 / Cyber Operations
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	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	12.314	19.189	20.017	22.881	-	22.881	-	-	-

**Remarks**  
N/A

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MC30 / Cyber Operations
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Significant Event Complete ▲    Milestone Decision Complete ★    Element Test Complete ◆    System Level Test Complete ●    Complete Activity ✦  
 Significant Event Planned △    Milestone Decision Planned ☆    Element Test Planned ◇    System Level Test Planned ○    Planned Activity ✧

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - Follow-On					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - Follow-On					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - Follow-On					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command	✦	✦	✦	✦																								
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance	✦	✦	✦	✦																								
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs	✦	✦	✦	✦																								
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance - Follow-On					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Complete Annual Information Assurance user Training for MDA Workforce	✦	✦	✦	✦																								
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services	✦	✦	✦	✦																								

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MC30 / Cyber Operations
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Significant Event Complete ▲      Milestone Decision Complete ★      Element Test Complete ◆      System Level Test Complete ●      Complete Activity ✦  
 Significant Event Planned △      Milestone Decision Planned ☆      Element Test Planned ◇      System Level Test Planned ○      Planned Activity ✧

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems	✦	✦	✦	✦																								
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance	✦	✦	✦	✦																								
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - Follow-On					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Complete Annual Information Assurance user Training for MDA Workforce - Follow-On					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - Follow-On					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MC30 / Cyber Operations
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - Follow-On	1	2016	4	2021
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - Follow-On	1	2016	4	2021
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - Follow-On	1	2016	4	2021
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command	1	2015	4	2015
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance	1	2015	4	2015
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs	1	2015	4	2015
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance - Follow-On	1	2016	4	2021
Complete Annual Information Assurance user Training for MDA Workforce	1	2015	4	2015
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services	1	2015	4	2015
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems	1	2015	4	2015
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance	1	2015	4	2015
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - Follow-On	1	2016	4	2021
Complete Annual Information Assurance user Training for MDA Workforce - Follow-On	1	2016	4	2021

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / <i>BMD Enabling Programs</i>	<b>Project (Number/Name)</b> MC30 / <i>Cyber Operations</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - Follow-On	1	2016	4	2021

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs				<b>Project (Number/Name)</b> MD31 / Modeling & Simulation			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
MD31: <i>Modeling &amp; Simulation</i>	85.843	39.589	42.668	44.458	-	44.458	47.278	47.837	50.226	50.984	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

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

The mission of MDA's M&S Program is 1) to execute a single, integrated, and synchronized program to manage M&S development in support of MDA's BMDS acquisition, 2) to support BMDS Flight and Ground Test execution, 3) to drive MDA test activities to collect data to anchor M&S, and 4) to support warfighter training and tactics validation.

M&S develops, sustains and delivers system-level models, frameworks, and simulations which are used to examine and evaluate BMDS performance and behaviors of the associated components and elements within a virtual and constructive simulation environment. MDA's M&S Program assists the development and acquisition of the BMDS by providing: M&S system and product planning, development, integration, and operation; threat model development, verification, and analysis; and integration and deployment of MDA's Distributed BMDS real-time Hardware-in-the-Loop (HWIL) and digital M&S simulation capabilities.

MDA's M&S program is essential to ensuring missile defense capabilities are affordable and effective. MDA's M&S program provides a cost effective means to assess and explore the performance space of the BMDS beyond what can be physically tested under current test range conditions and within fiscal constraints. Through conceptual simulation activities, M&S provides the capability to design and develop technologies to hedge against future missile threats. These efforts require close coordination with the DoD, Joint Staff, Military Services, Combatant Commands (CCMDs), Operational Test Agencies (OTAs), MDA Program Elements, and the Intelligence Community.

In response to a Director of Operational Test and Evaluation (DOT&E) BMDS Assessment Report, M&S has developed and is executing Corrective Action Plans. Key tasks include:

- Ensure that future M&S architectures are composable and flexible, and simplify the integration process to conserve resources and improve capabilities.
- Ensure that future M&S architectures incorporate and require the use of consistent "truth" representations (environmental factors, threat simulations, etc.).
- Improve cross-organizational system engineering processes to optimize requirements generation and ensure the inclusion of all stakeholders.
- Develop refined M&S accreditation criteria between MDA and the OTA.

The M&S objective is to evolve the various systems and products to incrementally improve the fidelity of MDA's M&S representations to match, as appropriate, the real world performance of the BMDS and meet Warfighter and Agency needs. In particular, MDA's M&S systems and products provide analysis and decision-making and planning capabilities for Real-World Operations in support of the National Command Authority, Joint Staff, Military Services, NATO, CCMDs, OTAs, Director of Operational Test & Evaluation (DOT&E), and Allies. Models and simulations are tailored to the specific needs of the Agency's test events and to match BMDS

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / <i>BMD Enabling Programs</i>	<b>Project (Number/Name)</b> MD31 / <i>Modeling &amp; Simulation</i>
<p>components in their various stages of development, ranging from low-to-medium fidelity analyses supporting concept definitions studies, to high-fidelity models used to support engineering level activities.</p> <p>MDA's M&amp;S mission has relied on the use of two simulation frameworks to execute requirements to support various stakeholder applications such as Ground Tests, Flights Tests and digital performance assessments. The Single Stimulation Framework (SSF) has supported all HWIL stakeholder applications, while the Digital Simulation Architecture (DSA) was used to support all Digital stakeholder applications. MDA established requirements for the Objective Simulation Framework (OSF) to move towards a single simulation framework that support all MDA M&amp;S stakeholder applications: HWIL, digital, and hybrid configurations. OSF will provide a composable simulation framework that promotes significant reuse of authoritative, community-validated truth models and is extensible to facilitate integration of new models as they evolve. OSF threat scenarios and simulated BMDS operating environments will allow assessment of the BMDS capabilities to support various agency objectives and decisions. In addition to supporting BMDS system assessments, OSF will support CCMDs by delivering a framework that provides the BMDS operational crews and command staffs with the capability to work together to exercise a spectrum of offensive and defensive operations, as well as a venue for the operational community to experiment with new Concepts of Operation and Tactics, Techniques and Procedures.</p> <p>The Core Truth Modeling program provides consistent and common Phenomenology, Lethality, and Environment models, and threat capabilities for Agency M&amp;S venues. Phenomenology models address missile hard body visible and infrared signatures, as well as the plume produced by the missile engines. Lethality models represent the impact of the BMDS missile kill vehicles (i.e. GBI, SM-3, THAAD) on reentry vehicles. Lethality results include percentage of destruction and the direction and speed of debris fragments. Environment modeling provides a representation of natural and man-made endo and exo-atmospheric conditions (e.g., rain, wind, sea state) for simulations.</p> <p>The Threat Modeling Center (TMC) uses all-source intelligence products to produce credible, high resolution threat models and simulation media to support analysis, development, test, and assessment of the defense of the U.S., deployed forces, and allies against ballistic missile attacks. The threat models are used to produce accurate kinematic threat trajectories and signature data (radar cross-section (RCS), hardbody infrared (IR), and plume IR) of ballistic missiles and air breathing threats to drive the M&amp;S tools of the missile defense community, and enable design, verification, and assessment of the BMDS and associated components' concepts and requirements. BMDS simulation events use common threat data to prove the performance of the BMDS.</p> <p>MDA's M&amp;S capabilities, systems and products are in use throughout the BMDS and provide the Warfighter and OTAs the capability to evaluate both the BMDS and individual components. MDA validates and accredits system-level models and simulations by anchoring them to ground and flight test events to support accurate and comprehensive assessments of the BMDS. MDA bases M&amp;S system and product testing on an integrated, comprehensive, and phased test program as outlined in MDA's IMTP. Within the construct of the IMTP, MDA Element-unique M&amp;S systems, subsystems, and components are tested as part of their respective development and integration, a necessary precursor to conducting BMD System-level M&amp;S testing (e.g., integrated ground test, performance/technical assessment venues). Resources for the planning, design, execution and management of this testing are provided in accordance with the BMDS Test Policy, as listed in the most current version of the IMTP.</p> <p>MDA's M&amp;S program also supports Allied/Coalition Partner cooperative activities, real-world pre- and post-flight launch analyses, and the Israeli Cooperative Programs.</p>		

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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<b>Title:</b> Modeling and Simulation (M&S) Requirements, Design Support, Scenario Optimization	7.819	7.628	7.919
<b>Articles:</b>	-	-	-

**Description:** M&S capability development executes an integrated, synchronized program to manage M&S development in support of BMDS development, testing, and assessment.

- FY 2015 Accomplishments:**
- Maintained traceability between the M&S requirements database and M&S product development.
  - Produced capability documents and specifications for M&S product development to enable BMDS Ground Tests, Training events, Exercises, Wargames, Digital simulations, and Element Integration.
  - Supported requests to export M&S software to nations or international organizations.
  - Supported system engineering capability trades which are essential in the assessment of all BMDS capability deliveries (including BMDS capability deliveries for Phased Adaptive Approach (PAA) and Homeland Defense).
  - Continued the transition to replace the Digital Simulation Architecture (DSA) and Single Stimulation Framework (SSF) with an Objective Simulation Framework (OSF) to support M&S Intended Uses.
  - Supported M&S technical interchange with the Department of Defense of Australia under the Ballistic Missile Defense Modeling, Simulation and Analysis Project arrangement .

- FY 2016 Plans:**
- Maintain and update MDA's M&S model capability descriptions catalog.
  - Maintain traceability between the M&S requirements database and M&S product development.
  - Produce capability documents and specifications for M&S product development to enable BMDS Flight and Hardware in the Loop (HWIL) tests, training events, exercises, wargames, digital simulations, and Element integration.
  - Support requests to export M&S software and technical data to nations or international organizations.
  - Support Technical Interchange Meetings and bilateral agreements with allies and partners.
  - Support system engineering capability trades which are essential for the assessment of all BMDS capability deliveries (including BMDS capability deliveries for Phased Adaptive Approach and Homeland Defense).
  - Continue the transition to replace the Single Stimulation Framework with the Objective Simulation Framework to support M&S Intended Uses.

- FY 2017 Plans:**
- Maintain traceability between the M&S Systems Requirements Documents and M&S product development.
  - Produce capability documents and specifications for M&S product development to enable BMDS flight and HWIL tests, training events, exercises, wargames, digital simulations, and Element integration.
  - Maintain and update MDA's M&S model capability descriptions catalog.
  - Support MDA response to export requests for M&S software and technical data to nations or international organizations.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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<ul style="list-style-type: none"> <li>- Participate in Technical Interchange Meetings and provide support for bilateral agreements with allies and partners.</li> <li>- Support system engineering capability trades for all BMDS capability deliveries (including BMDS capability deliveries for Phased Adaptive Approach and Homeland Defense).</li> <li>- Continue the transition to replace the Single Stimulation Framework with the Objective Simulation Framework to support M&amp;S Intended Uses.</li> <li>- Provide integrated program lifecycle planning and scheduling of all BMDS M&amp;S models and capabilities to enable assessment of BMDS capability deliveries for Phased Adaptive Approach and Homeland Defense.</li> </ul>			
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<b>Title:</b> M&S Digital Framework, Simulation, Models	10.015	11.366	11.836
<b>Articles:</b>	-	-	-

**Description:** The M&S Digital Framework, simulation, and models effort includes: development and sustainment of digital products and the architecture framework, and delivery/maintenance of infrastructure for BMDS performance assessments, Warfighter events, and BMD International Simulation events.

**FY 2015 Accomplishments:**

Development and Sustainment:

- Initiated the re-architecting of MDA's BMD International Simulation (I-SIM) to adapt to growing distributed event requirements in support of CCMD and International Wargames, conceptual planning, BMD visualizations, BMD training/orientation, and M&S demonstrations.
- Continued development and sustainment of the Missile Defense Space Warning Tool (MDST) to keep pace with fielded BMDS OPIR Architectures in support of Warfighter events.
- Provided software operations/maintenance support to the Extended Air Defense Simulation (EADSIM) code base for use in Warfighter exercises, training venues, and CCMD planning tools.
- Provided software development/sustainment for BMDS component models of PATRIOT weapon system for use in MDA test and validation events.

Maintenance:

- Initiated the replacement of Discrete Event Simulation (DESIM) with existing modernized M&S tools in support of some COCOM events and operating potential replacement simulations in "shadow mode" for others.

Event Integration/Support Operations:

- Integrated, tested, functionally qualified, and delivered legacy M&S tools for use in MDA test events, Wargames, and exercises (includes models for PATRIOT, and communications).
- Continued the transition of real-time digital simulation capability to the Objective Simulation Framework (OSF) to support Intended Uses.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / <i>BMD Enabling Programs</i>	<b>Project (Number/Name)</b> MD31 / <i>Modeling &amp; Simulation</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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<ul style="list-style-type: none"> <li>- Controlled and maintained simulations for Element M&amp;S development laboratory use in the Digital M&amp;S Integration Center (DMIC) in Huntsville, AL.</li> <li>- Provided digital representations for use during International Simulations/Wargames and demonstrations as well as Missile Defense Space Warning Tool operations.</li> <li>- Provided threat representations (kinematic trajectories, RCS, and IR signature data) for use in real-world events, simulations, exercises, wargames, and test and evaluation activities across the DoD.</li> <li>- Performed operational planning for the FY 2016 BMDS assessment events.</li> </ul> <p><b>FY 2016 Plans:</b> Development and Sustainment:</p> <ul style="list-style-type: none"> <li>- Continue re-architecting of MDA's BMD International Simulation (I-SIM) to adapt to growing distributed event requirements in support of COCOM and International Wargames, conceptual planning, BMD visualizations, BMD training/orientation, M&amp;S demonstrations, and the Warfighter's Modification &amp; Fielding Requirements List (MFRL).</li> <li>- Maintain the Missile Defense Space Warning Tool (MDST) to keep pace with fielded BMDS Overhead Persistent Infrared (OPIR) Architectures in support of Warfighter events.</li> <li>- Provide software operations/maintenance support to the Extended Air Defense Simulation (EADSIM) code base for use in Warfighter exercises, training venues, and COCOM planning tools.</li> <li>- Provide Software development/sustainment for BMDS component models of PATRIOT weapon system for use in MDA test and validation events.</li> </ul> <p>Event Integration/Support Operations:</p> <ul style="list-style-type: none"> <li>- Integrate, test, functionally qualify, and deliver M&amp;S tools for use in MDA test events, Wargames, and exercises.</li> <li>- Continue the transition of real-time digital simulation capability to the Objective Simulation Framework (OSF) to support Intended Uses.</li> <li>- Control and maintain simulations for Element M&amp;S development laboratory use in the Digital M&amp;S Integration Center (DMIC) in Huntsville, AL.</li> <li>- Provide digital representations for use during International Simulations/Wargames and demonstrations, and exercise/training events.</li> <li>- Provide threat representations (kinematic trajectories, radar cross sections, and infrared signature data) for use in real-world events, simulations, exercises, wargames, and test and evaluation activities across the DoD.</li> <li>- Perform operational planning for the FY 2017 BMDS assessment events.</li> </ul> <p><b>FY 2017 Plans:</b> Event Integration/Support Operations:</p>			
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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<ul style="list-style-type: none"> <li>- Provide the ground test architecture integration expertise to meet the testing requirements of the IMTP. Support delivery of integrated architectures for test across all test venues using the BMDS test framework to integrate distributed architectures in support of BMDS capability deployments for EPAA Phase 3.</li> <li>- Integrate, test, and verify the M&amp;S enterprise supporting BMDS testing, assessment, exercises, and wargaming, including testing infrastructure. Guide and facilitate integration testing of MDA's M&amp;S frameworks and core truth models, and all M&amp;S components into virtual representations of the BMDS that are credible, affordable, and provide decision makers with the data needed.</li> <li>- Integrate, test, functionally qualify, and deliver M&amp;S tools and complex test architectures to provide system test capabilities to support MDA IMTP based test events, wargames, and exercises.</li> <li>- Continue the transition of real-time digital simulation capability to the Objective Simulation Framework to support Intended Uses.</li> <li>- Maintain simulations for Element M&amp;S development laboratories used in the BMDS Integration &amp; Development Lab and Digital M&amp;S Integration Center (DMIC) in Huntsville, AL and in the MDIOC Simulation Center.</li> <li>- Begin providing required integration, testing and system-level verification manpower to achieve digital System Requirements Document threshold performance. Operate the test-bed to support maturation of an OSF-based digital system simulation.</li> <li>- Provide threat representations (kinematic trajectories, radar cross sections, and infrared signature data) for use in real-world events, simulations, exercises, wargames, and test and evaluation activities across the DoD.</li> <li>- Perform operational planning for the FY 2017 BMDS assessment events.</li> <li>- Deploy System Interface Units (SIUs) for BMDS testing - materials, licenses, SIU fleet purchasing. Deploy SIUs and components to maintain and sustain SIU fleet including cybersecurity; enables Developmental and Operational testing with full BMDS as required in IMTP, to meet EPAA Phase 3 requirements.</li> <li>- Conduct M&amp;S system integration and verification to support M&amp;S system architecture development. Provide developmental integration testing to support M&amp;S system architecture integration.</li> </ul> <p>M&amp;S Operations:</p> <ul style="list-style-type: none"> <li>- Continue to implement the re-architecture requirements of MDA's BMD International Simulation (I-SIM) as well as implement emerging requirements such as IAMD/Fog of War to adapt to growing distributed event requirements in support of CCMD and International Wargames, conceptual planning, BMD visualizations, BMD training/orientation, M&amp;S demonstrations, and the Warfighter's Modification &amp; Fielding Requirements List (MFRL).</li> <li>- Develop and maintain the Missile Defense Space Warning Tool (MDST) to keep pace with fielded BMDS Overhead Persistent Infrared (OPIR) Architectures in support of Warfighter training events and BMDS exercise events.</li> <li>- Provide software operations/maintenance support to the Extended Air Defense Simulation (EADSIM) code base for use in Warfighter exercises, training venues, and CCMD planning tools.</li> <li>- Provide Event Integration Support for BMDS component models of PATRIOT weapon system for use in MDA test and validation events.</li> <li>- Provide Software development/sustainment for BMDS component models (PSEM and FMS/D) of PATRIOT weapon system for use in IMTP events.</li> </ul>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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<ul style="list-style-type: none"> <li>- Provide HWIL/M&amp;S Benchmarking/Integration, documentation and coordination. Sustain, integrate and execute ground tests, FAST Events and Exercises/Wargames to include Patriot FMS/D HWIL representations and improved model validation and accreditation.</li> <li>- Provide communications emulation (MTJ, STJ, and Link-16) and network analysis support via the Tactical Communications Environment Segment (TCES) for use in IMTP events such as integrated ground tests, HWIL SPFRs and HWIL SPMTs.</li> <li>- Provide digital representations for use during International Simulations/Wargames and demonstrations, and exercise/training events.</li> <li>- Support the Re-Architecture of BMDS simulations via compliance upgrades to legacy models, new designs or as software as required by the Agency M&amp;S efforts.</li> </ul>			
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<b>Title:</b> M&S HWIL Framework, Simulations, Models	12.402	13.341	13.948
<b>Articles:</b>	-	-	-

**Description:** The M&S HWIL Framework, Models and Simulations effort develops, maintains and deploys the HWIL framework hardware and software for use at element laboratories and Combatant Command locations to support IMTP test events, BMDS capability delivery assessments, Warfighter training, exercises, and wargames.

**FY 2015 Accomplishments:**

- Delivered the initial version of the Objective Simulation Framework (OSF), which included Hardware-in-the-loop (HWIL) capabilities.
- Incorporated advanced M&S capabilities into the next version of the OSF for tracking, discrimination, engagement and associated upper tier debris mitigation, launch/engage on remote, as well as lower tier engagement coordination to satisfy PAA needs.
- Controlled and maintained the HWIL Integration Laboratory for Element M&S in Huntsville, AL.
- Provided support for scheduled events including Wargames and Combatant Command Exercises and the Distributed, Focused and Integrated Ground Test Events as presented in the Integrated Master Test Plan (IMTP).
- Developed, maintained, tested, fielded, and operated model representations for use in Ground Tests.

**FY 2016 Plans:**

- Develop Objective Simulation Framework upgrades to incorporate advanced tracking, discrimination, engagement and associated upper tier debris mitigation capabilities, as well as other requirements and capabilities to meet MDA's evolving M&S Enterprise needs.
- Begin implementation of new capabilities needed to support MDA's Tier 2 Digital requirements, including hardware and software, data storage and transmission, and verification tools.
- Control and maintain the M&S Integration and Development Laboratories for Element M&S. Maintain venue for stakeholders to conduct early integration efforts and identification of issues prior to event architecture integration to support system development.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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<ul style="list-style-type: none"> <li>- Develop plans, procedures and documentation for scheduled events including Wargames and Combatant Command Exercises and the Distributed, Focused and Integrated HWIL Events as presented in the Integrated Master Test Plan (IMTP). Provide event architecture integration and checkout of Wargames for these same scheduled events.</li> <li>- Develop, maintain, test, field, and operate model representations for use in events and other MDA M&amp;S stakeholder application areas. Deploy hardware and software updates to Continental U.S. (CONUS) and Outside CONUS (OCONUS) distributed sites. Perform regular maintenance and critical repairs of hardware and software.</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Develop plans, procedures and documentation for scheduled events including Wargames and Combatant Command Exercises and the Distributed, Focused and Integrated HWIL Events as presented in the IMTP. Provide event architecture integration and checkout of Wargames for these same scheduled events.</li> <li>- Develop, maintain, test, field, and operate model representations for use in events and other MDA M&amp;S stakeholder application areas. Deploy hardware and software updates to CONUS and OCONUS distributed sites. Perform regular maintenance and critical repairs of hardware and software.</li> <li>- Enhance and publish the OSF framework interface to facilitate element integration in support of the GT-07 campaign.</li> <li>- Evolve the OSF product to integrate and take advantage of new Core Truth Models in support of the GT Re-architecture efforts.</li> <li>- Implement framework functionality needed to support MDA's reconstitution of the Tier 2 Digital capabilities.</li> <li>- Implement OSF into the Flight Test and Warfighter Training venues.</li> <li>- Sustain and enhance framework products to maintain capabilities to support stakeholders.</li> <li>- Provide System Engineering support to the Ground Test Re-architecture effort.</li> <li>- Implement Objective Simulation Framework capabilities to incorporate advanced tracking, discrimination, engagement and associated upper tier debris mitigation capabilities, as well as other requirements and capabilities to meet MDA's evolving M&amp;S Enterprise needs.</li> <li>- Continue maintenance of the Single Stimulation Framework in the required venues until the transition of the Objective Simulation Framework into the venues completes.</li> </ul>			
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<b>Title:</b> M&S Core Truth Modeling	9.353	10.333	10.755
<b>Articles:</b>	-	-	-

**Description:** The Core Truth Model (CTM) program provides consistent and common Phenomenology, Lethality, Environment, Communications, and Threat models for BMDS M&S venues and supports all Digital and Ground Test Events and Wargaming Exercises. The Core Truth Model efforts are critical in the assessment of all BMDS capability deliveries.

**FY 2015 Accomplishments:**

- Continued the implementation of next generation truth representations for phenomenology and lethality to meet advanced BMDS capability needs for tracking, discrimination and engagement in support of Phased Adaptive Approach (PAA).

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
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-Maintained legacy truth representations (e.g., Parametric Endoatmospheric-Exoatmospheric Lethality Simulation (PEELS), Kinetic Intercept Debris Distribution (KIDD) and Optical Signatures Code/Optical Signature Inline Generator (OSC/OPTISIG)) until fully transitioned.

-Provided M&S software for the Threat Modeling Simulation System (TMSS) threat production architecture (e.g. integration of new/updated missile models and threat system capabilities) to enable threat production for real-world events; BMDS development, system-level events, and exercises; and Wargames.

-Provided M&S software for the Threat Generator External (TGx) analyst/planner tool (e.g. integration of new/updated missile models and threat system capabilities) for threat studies throughout the DoD.

-Continued efforts to support integration of all applicable Core Truth Model (CTM) functions into Objective Simulation Framework (OSF) framework.

-Provided support for scheduled events including Wargames, Exercises, and the Distributed, Focused and Integrated Ground Test Events as presented in the IMTP.

- Continued development of CTM Toolkit for integrated truth representations across the M&S enterprise.

- Continued assessment of Environment models for ground test implementation.

**FY 2016 Plans:**

- Continue implementation of next generation truth representations for signatures and lethality to address advanced BMDS capability needs for tracking, discrimination and engagement in support of European Phased Adaptive Approach (EPAA) Phase 3.

- Maintain legacy truth representations (e.g., Parametric Endoatmospheric-Exoatmospheric Lethality Simulation (PEELS), Kinetic Intercept Debris Distribution (KIDD) and Optical Signatures Code/Optical Signature Inline Generator (OSC/OPTISIG)) until fully transitioned.

- Provide M&S software for the Threat Modeling Simulation System (TMSS) threat production architecture (e.g. integration of new/updated missile models and threat system capabilities) to enable threat production for real-world events, BMDS development, BMD system-level events, training, exercises, and Wargames.

- Provide M&S software for the Threat Generator External (TGx) analyst/planner tool (e.g. integration of new/updated missile models and threat system capabilities) for threat studies throughout the DoD.

- Continue efforts to support integration of all applicable Core Truth Model (CTM) functions into Objective Simulation Framework (OSF) framework.

- Provide support for scheduled events including training, exercises, Wargames, and the Distributed, Focused and Integrated HWIL Events as presented in the IMTP.

- Deliver CTM Toolkit for integrated truth representations across the M&S enterprise.

- Continue efforts to develop radar cross section (RCS) prediction tool that provides consistent RCS data for system and element simulations.

- Continue the re-establishment of the Environments Program that will provide consistent environment models for system and element level simulations.

<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>

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**Exhibit R-2A, RDT&E Project Justification:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<ul style="list-style-type: none"> <li>- Continue development of Truth Interaction which includes infrared (IR) propagation, radio frequency (RF) propagation, and aerodynamic propagation. This will provide consistent models and truth to system and element level simulations.</li> <li>- Continue generating CTM Sensitivity analysis to identify the sensitivity within system simulation of CTM models and boundary.</li> <li>- Continue development of CTM design to support system and element level simulations.</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue implementation of next generation truth representations for signatures and lethality; establish truth representations for environments and truth interaction to address advanced BMDS capability needs for tracking, discrimination and engagement in support of EPAA Phase 3.</li> <li>- Maintain legacy truth representations (e.g., Parametric Endoatmospheric-Exoatmospheric Lethality Simulation (PEELS), Kinetic Intercept Debris Distribution (KIDD) and Optical Signatures Code/Optical Signature Inline Generator (OSC/OPTISIG)) until fully transitioned.</li> <li>- Deliver Core Truth Models (CTM) Toolkit for integrated truth representations across the M&amp;S enterprise.</li> <li>- Continue efforts to develop radar cross section prediction tool that provides consistent data for system and element simulations.</li> <li>- Continue integration of applicable Core Truth Model functions into Objective Simulation Framework.</li> <li>- Support training, exercises, Wargames, and the Distributed, Focused and Integrated HWIL Events as presented in the IMTP.</li> <li>- Provide consistent environment models for system and element level simulations.</li> <li>- Continue development of Truth Interaction capability, to include infrared, radio frequency, and aerodynamic propagation. Provide consistent models and truth to system and element level simulations.</li> <li>- Continue generating CTM Sensitivity Analysis to identify the sensitivity within system simulation of CTM models and boundary.</li> <li>- Continue development of CTM design to support system and element level simulations.</li> <li>- Sustain the Threat Modeling Simulation System (TMSS) threat production architecture (e.g. integration of new/updated missile models and threat system capabilities) to enable efficient and timely BMD threat production for real-world events, BMDS development, BMD system-level events, training, exercises, and Wargames.</li> <li>- Sustain the Threat Generator External (TGx) analyst/planner tool (e.g. integration of new/updated missile models and threat system capabilities) for BMD threat studies throughout the DoD.</li> <li>- Provide Integrated Threat Packages of red-force representations (kinematic trajectories, radar cross sections, and infrared signature data) for use in BMD real-world events, simulations, exercises, wargames, and test and evaluation activities across the DoD</li> <li>- Continue System Engineering efforts in Support of GT Re-architecture efforts</li> <li>- Identify SBIR Technology to be transitioned to core program in support of increasing capabilities across the CTM areas</li> <li>- Continue efforts to develop prediction tools/capabilities covering all threat data types for radar cross section, kinematics, infrared hardbody and plume signatures which provide consistent data for system and element simulations.</li> </ul>			
<b>Accomplishments/Planned Programs Subtotals</b>	39.589	42.668	44.458

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**Exhibit R-2A, RDT&E Project Justification:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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**C. Other Program Funding Summary (\$ in Millions)**

<b>Line Item</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• 0603881C: <i>Ballistic Missile</i>	161.298	212.230	206.834	-	206.834	231.105	197.018	250.227	260.613	Continuing	Continuing
<i>Defense Terminal Defense Segment</i>											
• 0603882C: <i>Ballistic</i>	863.965	1,269.913	862.080	-	862.080	701.311	585.079	600.710	535.614	Continuing	Continuing
<i>Missile Defense Midcourse</i>											
<i>Defense Segment</i>											
• 0603892C: <i>AEGIS BMD</i>	761.646	830.647	959.066	-	959.066	841.738	700.596	592.940	528.744	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

The M&S acquisition strategy utilizes full and open competition to develop, acquire and deliver the integrated architectures/frameworks while the Elements, using the same open competition methods, develop and deliver models of their systems. The Digital and HWIL product centers integrate the suite of M&S into a composite simulation capability, all based on an open architecture. M&S achieves this end-state via close collaboration between its integrating contractor teams (Digital and HWIL) and those of the Element prime contractors, with additional technical standards and engineering oversight provided by FFRDCs and UARCs.

**E. Performance Metrics**

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency												Date: February 2016			
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)					
0400 / 4					PE 0603890C / BMD Enabling Programs					MD31 / Modeling & Simulation					
Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Modeling and Simulation (M&S) Requirements, Design Support, Scenario Optimization - FFRDC & UARC	MIPR	Various : CO, AL	0.000	1.460		1.574	Nov 2015	1.728	Nov 2016	-		1.728	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Requirements, Design Support, Scenario Optimization - Requirements & Design - CSS 2	C/CPFF	Parsons : CO	0.000	5.375		5.294	Nov 2015	5.433	Nov 2016	-		5.433	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Requirements, Design Support, Scenario Optimization - Requirements & Design - OGA	MIPR	SMDC : AL	0.000	0.476		0.486	Nov 2015	0.482	Nov 2016	-		0.482	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Requirements, Design Support, Scenario Optimization - Requirements & Design Support	Various	MDA : CO, AL	3.728	0.508		0.274	Oct 2015	0.276	Nov 2016	-		0.276	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Requirements, Design Support, Scenario Optimization - Requirements & Scenario Design Support - OGA	MIPR	AMRDEC : AL	1.933	0.000		0.000		0.000		-		0.000	0	1.933	0
M&S Digital Framework, Simulation, Models - Digital Framework Development	C/CPAF	Northrop Grumman : CO	5.744	4.351		5.067	Oct 2015	4.720	Nov 2016	-		4.720	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - Digital Simulation Development / Support	MIPR	SMDC : AL	1.750	0.873		0.924	Oct 2015	0.000		-		0.000	Continuing	Continuing	Continuing

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
M&S Digital Framework, Simulation, Models - M&S / Digital Framework Support	Various	MDA : CO, AL	0.506	0.608		0.551	Oct 2015	0.895	Nov 2016	-		0.895	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - M&S / Digital Framework Support - CSS	C/CPFF	Parsons : CO	0.000	0.000		0.000		2.000	Nov 2016	-		2.000	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - M&S / Digital Framework Support - Industry	C/CPFF	TBE : AL	0.000	0.000		0.000		0.959	Nov 2016	-		0.959	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - M&S / Digital Framework Support - OGA	MIPR	AMRDEC : AL	2.390	4.183		4.824	Oct 2015	3.262	Nov 2016	-		3.262	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models - M&S HWIL - CSS	C/CPFF	Parsons : CO	0.000	0.000		0.000		2.200	Nov 2016	-		2.200	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models - M&S HWIL - Industry	C/CPAF	Northrop : CO	2.608	0.000		3.162	Oct 2015	0.620	Nov 2016	-		0.620	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models - M&S HWIL Framework Development and Support	C/CPFF	Teledyne Brown Engineering : AL, CO	6.315	5.402		3.928	Oct 2015	3.405	Nov 2016	-		3.405	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models - M&S HWIL Simulations / Models Development	MIPR	AMRDEC : AL	9.049	5.692		5.090	Oct 2015	4.411	Nov 2016	-		4.411	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models - M&S HWIL Support / GT re-architecture	Various	MDA : AL, CO	0.600	1.308		1.161	Oct 2015	3.312	Nov 2016	-		3.312	Continuing	Continuing	Continuing
M&S Core Truth Modeling - M&S Core Truth Modeling - OGA	MIPR	AFRL : CO	0.000	0.000		0.000		1.300	Nov 2016	-		1.300	Continuing	Continuing	Continuing

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
M&S Core Truth Modeling - Core Truth Models Validation	Various	MDA : CO, AL	3.789	1.258		1.260	Oct 2015	0.500	Oct 2016	-		0.500	Continuing	Continuing	Continuing
M&S Core Truth Modeling - M&S Core Truth Modeling - Lethality/ Phenomenology Modeling	MIPR	AMRDEC : AL	26.056	1.509		2.437	Oct 2015	2.400	Nov 2016	-		2.400	Continuing	Continuing	Continuing
M&S Core Truth Modeling - M&S Core Truth Modeling Simulation System	C/CPAF	Northrop Grumman : CO	21.375	6.586		6.636	Oct 2015	6.555	Nov 2016	-		6.555	Continuing	Continuing	Continuing
<b>Subtotal</b>			85.843	39.589		42.668		44.458		-		44.458	-	-	-

**Remarks**  
N/A

<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

**Remarks**  
N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

**Remarks**  
N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

**Remarks**  
N/A

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	85.843	39.589	42.668	44.458	-	44.458	-	-	-

**Remarks**  
Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ✦
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ✧

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Combatant Command Exercise (Vigilant Shield / Global Thunder 15) 1Q-FY 2015	▲																											
International Simulation v.8.2 – 1Q-FY 2015	▲																											
Missile Defense Space Warning Tool (MDST) v16 - 1Q-FY 2015	▲																											
Multi-National Missile Defense Conference Seminar 1Q-FY 2015	▲																											
GTD-04e Part 2 (BMDs Ground Test) M&S Test Integration	▲																											
BMDs Wargame 2015 2Q-FY 2015		▲																										
Global Response (GREx06 Part 2) 3Q-FY 2015			▲																									
Combatant Command Exercise (Global Lightning 15) 3Q-FY 2015			▲																									
Key Resolve 15 Combatant Command Exercise Objective Simulation Framework (OSF) v1.0.2.2 - 4Q-FY 2015			▲																									
FTO-02 Event 2 - HWIL SPMT			▲																									
Ground Test, Integrated 06 Part 3 (GTI-06 Part 3)			◆																									
International Simulation v.8.3 – 1Q-FY 2016				▲																								
Missile Defense Space Warning Tool (MDST) v16.1 - 1Q-FY 2016				▲																								
CTV-02 HWIL System Pre-Mission Test (SPMT) (EX) Global Lightning 16				▲																								
GM CTV-02+ (GM Intercept Flight Test) Countdown Exercise					△																							
Combatant Command Exercise (Keen Edge 16)					△																							
Flight Test, Operational (FTO) 02 E2 HWIL System Post Flight Reconstruction (SPFR)					△																							
FTG-15 (GM Intercept Flight Test) HWIL System Pre-Mission Test (SPMT)					△																							
Objective Simulation Framework (OSF) v1.5 - 3Q-FY 2016						△																						
FTG-15 Countdown Event							△																					

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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Significant Event Complete ▲      Milestone Decision Complete ★      Element Test Complete ◆      System Level Test Complete ●      Complete Activity +  
 Significant Event Planned △      Milestone Decision Planned ☆      Element Test Planned ◇      System Level Test Planned ○      Planned Activity +

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
(WG) Multi-National Missile Defense Conference (MNC) 16								◆	◆																				
International Simulation v 8.4 – 1Q-FY 2017								△																					
Missile Defense Space Warning Tool (MDST) v16.2 - 1Q-FY 2017								△																					
FTX-22 HWIL System Pre-Mission Test (SPMT)								△																					
Objective Simulation Framework (OSF) v1.0.4.x - 1Q FY 2017								△																					
(EX) Global Lightning 17								◆	◆																				
FTG-11 HWIL System Pre-Mission Test (SPMT)									△																				
FTG-15 (GM Intercept Flight Test) HWIL System Post Flight Reconstruction (SPFR)										△																			
FTM-29 (AEGIS 5.1 Intercept Flight Test) HWIL System Pre-Mission Test (SPMT)										△																			
Single Stimulation Framework (SSF) 1.1.7.Z										△																			
(EX) KEEN Sword 17										◆	◆	◆																	
FTG-11 Count Down Exercise											△																		
(WG) Multi-National Missile Defense Conference (MNC) 17											◆	◆																	
Objective Simulation Framework (OSF) 1.0.3												△																	
Missile Defense Space Warning Tool (MDST) v16.3												△																	
International Simulation v8.5												△																	
Flight Test, Operational (FTO) 03 E1 HWIL System Pre-Mission Test (SPMT)												△																	
GTX-07b												△																	
FTG-11 (OT) HWIL System Post Flight Reconstruction (SPFR)													△																
CTV-03 HWIL System Pre-Mission Test (SPMT)													△																
Global Response GREx 07b 3Q-FY 2018														△															
Flight Test, Operational 03 E1 (FTO-03 E1) Count Down Exercise															△														
CTV-03 Count Down Exercise																△													
FTM-29 HWIL System Post Flight Reconstruction (SPFR)																△													

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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Significant Event Complete ▲      Milestone Decision Complete ★      Element Test Complete ◆      System Level Test Complete ●      Complete Activity +  
 Significant Event Planned △      Milestone Decision Planned ☆      Element Test Planned ◇      System Level Test Planned ○      Planned Activity ✦

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Flight Test, Operational (FTO) 03 E2 HWIL System Pre-Mission Test (SPMT)															△													
Flight Test, Operational 03 E2 (FTO-03 E2) Count Down Exercise															△													
(WG) Multi-National Missile Defense Conference (MNC) 18															✦	✦												
Performance Assessment (PA07b OT)															△													
International Simulation v8.6															△													
Objective Simulation Framework v2.0															△													
Flight Test, Operational (FTO) 03 E1 HWIL System Post Flight Reconstruction (SPFR)															△													
FTG-17 (GM Intercept Flight Test) HWIL System Pre-Mission Test (SPMT)															△													
Ground Test, Distributed (GTD) 07b Part 1															△													
CTV-03 HWIL System Post Flight Reconstruction (SPFR)															△													
Flight Test, Operational (FTO) 03 E2 HWIL System Post Flight Reconstruction (SPFR)																△												
FTM-35 (AEGIS 5.1 Intercept Flight Test) HWIL System Pre-Mission Test (SPMT)																△												
FTT-19 (TH Intercept Flight Test) HWIL System Pre-Mission Test (SPMT)																△												
Ground Test, Distributed 07b Part 2 (GTD-07b Part 2)																△												
Global Responder GREx 08 Part 1 3Q-FY 2019																	△											
FTG-17 Count Down Exercise																△												
GTX-08 Part 1																△												
(EX) KEEN Sword 19																	✦	✦	✦									
(WG) Multi-National Missile Defense Conference (MNC) 19																		✦	✦									
International Simulation v8.7																			△									
FTG-17 (GM Intercept Flight Test) HWIL System Post Flight Reconstruction (SPFR)																			△									
FTX-26 (SN Target Only Flight Test) HWIL System Pre-Mission Test (SPMT)																				△								
FTO-04 HWIL System Pre-Mission Test (SPMT)																					△							

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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Significant Event Complete ▲      Milestone Decision Complete ★      Element Test Complete ◆      System Level Test Complete ●      Complete Activity +  
 Significant Event Planned △      Milestone Decision Planned ☆      Element Test Planned ◇      System Level Test Planned ○      Planned Activity ☆

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
GTX-08 Part 2																												
Objective Simulation Framework 2.0.3 (FY 2020 update 1)																					▲							
FTT-19 (TH Intercept Flight Test) HWIL System Post Flight Reconstruction (SPFR)																					▲							
Flight Test, Operational 04 (FTO-04) Count Down Exercise																						▲						
(EX) KEEN Sword 21																						☆	☆	☆	☆			
Objective Simulation Framework v.2.0.4																						▲						
Ground Test, Integrated 08 (GTI-08)																						▲						
Ground Test, Distributed 08 Part 1 (GTD-08 Part 1)																						▲						
(WG) Multi-National Missile Defense Conference (MNC) 20																							☆	☆				
International Simulation v8.8 - 1Q-FY 2021																							▲					
Flight Test, Operational (FTO-04) HWIL System Post Flight Reconstruction (SPFR)																							▲					
FTG-16 HWIL System Pre-Mission Test (SPMT)																							▲					
FTX-25 HWIL System Pre-Mission Test (SPMT)																							▲					
Ground Test, Distributed 08 Part 2 (GTD-08 Part 2)																							▲					
FTG-16 Count Down Exercise																											▲	

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Combatant Command Exercise (Vigilant Shield / Global Thunder 15) 1Q-FY 2015	1	2015	1	2015
International Simulation v.8.2 – 1Q-FY 2015	1	2015	1	2015
Missile Defense Space Warning Tool (MDST) v16 - 1Q-FY 2015	1	2015	1	2015
Multi-National Missile Defense Conference Seminar 1Q-FY 2015	1	2015	1	2015
GTD-04e Part 2 (BMDS Ground Test) M&S Test Integration	1	2015	1	2015
BMDS Wargame 2015 2Q-FY 2015	2	2015	2	2015
Global Response (GREx06 Part 2) 3Q-FY 2015	3	2015	3	2015
Combatant Command Exercise (Global Lightning 15) 3Q-FY 2015	3	2015	3	2015
Key Resolve 15 Combatant Command Exercise	3	2015	3	2015
Objective Simulation Framework (OSF) v1.0.2.2 - 4Q-FY 2015	4	2015	4	2015
FTO-02 Event 2 - HWIL SPMT	4	2015	4	2015
Ground Test, Integrated 06 Part 3 (GTI-06 Part 3)	4	2015	4	2015
International Simulation v.8.3 – 1Q-FY 2016	1	2016	1	2016
Missile Defense Space Warning Tool (MDST) v16.1 - 1Q-FY 2016	1	2016	1	2016
CTV-02 HWIL System Pre-Mission Test (SPMT)	1	2016	1	2016
(EX) Global Lightning 16	1	2016	2	2016
GM CTV-02+ (GM Intercept Flight Test) Countdown Exercise	2	2016	2	2016
Combatant Command Exercise (Keen Edge 16)	2	2016	2	2016
Flight Test, Operational (FTO) 02 E2 HWIL System Post Flight Reconstruction (SPFR)	2	2016	2	2016
FTG-15 (GM Intercept Flight Test) HWIL System Pre-Mission Test (SPMT)	2	2016	2	2016
Objective Simulation Framework (OSF) v1.5 - 3Q-FY 2016	3	2016	3	2016
FTG-15 Countdown Event	4	2016	4	2016
(WG) Multi-National Missile Defense Conference (MNC) 16	4	2016	1	2017

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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Events	Start		End	
	Quarter	Year	Quarter	Year
International Simulation v 8.4 – 1Q-FY 2017	1	2017	1	2017
Missile Defense Space warning Tool (MDST) v16.2 - 1Q-FY 2017	1	2017	1	2017
FTX-22 HWIL System Pre-Mission Test (SPMT)	1	2017	1	2017
Objective Simulation Framework (OSF) v1.0.4.x - 1Q FY 2017	1	2017	1	2017
(EX) Global Lightning 17	1	2017	2	2017
FTG-11 HWIL System Pre-Mission Test (SPMT)	2	2017	2	2017
FTG-15 (GM Intercept Flight Test) HWIL System Post Flight Reconstruction (SPFR)	3	2017	3	2017
FTM-29 (AEGIS 5.1 Intercept Flight Test) HWIL System Pre-Mission Test (SPMT)	3	2017	3	2017
Single Stimulation Framework (SSF) 1.1.7.Z	3	2017	3	2017
(EX) KEEN Sword 17	3	2017	1	2018
FTG-11 Count Down Exercise	4	2017	4	2017
(WG) Multi-National Missile Defense Conference (MNC) 17	4	2017	1	2018
Objective Simulation Framework (OSF) 1.0.3	1	2018	1	2018
Missile Defense Space Warning Tool (MDST) v16.3	1	2018	1	2018
International Simulation v8.5	1	2018	1	2018
Flight Test, Operational (FTO) 03 E1 HWIL System Pre-Mission Test (SPMT)	1	2018	1	2018
GTX-07b	1	2018	1	2018
FTG-11 (OT) HWIL System Post Flight Reconstruction (SPFR)	2	2018	2	2018
CTV-03 HWIL System Pre-Mission Test (SPMT)	2	2018	2	2018
Global Response GREx 07b 3Q-FY 2018	3	2018	3	2018
Flight Test, Operational 03 E1 (FTO-03 E1) Count Down Exercise	3	2018	3	2018
CTV-03 Count Down Exercise	3	2018	3	2018
FTM-29 HWIL System Post Flight Reconstruction (SPFR)	3	2018	3	2018
Flight Test, Operational (FTO) 03 E2 HWIL System Pre-Mission Test (SPMT)	4	2018	4	2018
Flight Test, Operational 03 E2 (FTO-03 E2) Count Down Exercise	4	2018	4	2018
(WG) Multi-National Missile Defense Conference (MNC) 18	4	2018	1	2019

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD31 / Modeling & Simulation
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Events	Start		End	
	Quarter	Year	Quarter	Year
Performance Assessment (PA07b OT)	1	2019	1	2019
International Simulation v8.6	1	2019	1	2019
Objective Simulation Framework v2.0	1	2019	1	2019
Flight Test, Operational (FTO) 03 E1 HWIL System Post Flight Reconstruction (SPFR)	1	2019	1	2019
FTG-17 (GM Intercept Flight Test) HWIL System Pre-Mission Test (SPMT)	1	2019	1	2019
Ground Test, Distributed (GTD) 07b Part 1	1	2019	1	2019
CTV-03 HWIL System Post Flight Reconstruction (SPFR)	1	2019	1	2019
Flight Test, Operational (FTO) 03 E2 HWIL System Post Flight Reconstruction (SPFR)	2	2019	2	2019
FTM-35 (AEGIS 5.1 Intercept Flight Test) HWIL System Pre-Mission Test (SPMT)	2	2019	2	2019
FTT-19 (TH Intercept Flight Test) HWIL System Pre-Mission Test (SPMT)	2	2019	2	2019
Ground Test, Distributed 07b Part 2 (GTD-07b Part 2)	2	2019	2	2019
Global Responder GREx 08 Part 1 3Q-FY 2019	3	2019	3	2019
FTG-17 Count Down Exercise	3	2019	3	2019
GTX-08 Part 1	3	2019	3	2019
(EX) KEEN Sword 19	3	2019	1	2020
(WG) Multi-National Missile Defense Conference (MNC) 19	4	2019	1	2020
International Simulation v8.7	1	2020	1	2020
FTG-17 (GM Intercept Flight Test) HWIL System Post Flight Reconstruction (SPFR)	1	2020	1	2020
FTX-26 (SN Target Only Flight Test) HWIL System Pre-Mission Test (SPMT)	1	2020	1	2020
FTO-04 HWIL System Pre-Mission Test (SPMT)	1	2020	1	2020
GTX-08 Part 2	1	2020	1	2020
Objective Simulation Framework 2.0.3 (FY 2020 update 1)	2	2020	2	2020
FTT-19 (TH Intercept Flight Test) HWIL System Post Flight Reconstruction (SPFR)	2	2020	2	2020
Flight Test, Operational 04 (FTO-04) Count Down Exercise	3	2020	3	2020
(EX) KEEN Sword 21	3	2020	2	2021
Objective Simulation Framework v.2.0.4	4	2020	4	2020

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / <i>BMD Enabling Programs</i>	<b>Project (Number/Name)</b> MD31 / <i>Modeling &amp; Simulation</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Ground Test, Integrated 08 (GTI-08)	4	2020	4	2020
Ground Test, Distributed 08 Part 1 (GTD-08 Part 1)	4	2020	4	2020
(WG) Multi-National Missile Defense Conference (MNC) 20	4	2020	1	2021
International Simulation v8.8 - 1Q-FY 2021	1	2021	1	2021
Flight Test, Operational (FTO-04) HWIL System Post Flight Reconstruction (SPFR)	1	2021	1	2021
FTG-16 HWIL System Pre-Mission Test (SPMT)	1	2021	1	2021
FTX-25 HWIL System Pre-Mission Test (SPMT)	1	2021	1	2021
Ground Test, Distributed 08 Part 2 (GTD-08 Part 2)	1	2021	1	2021
FTG-16 Count Down Exercise	3	2021	3	2021

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs				<b>Project (Number/Name)</b> MC31 / M&S Cyber Operations			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
MC31: M&S Cyber Operations	-	0.204	0.225	0.253	-	0.253	0.258	0.263	0.268	0.274	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Project MC31 is the Defensive Cyber Operations Project established in this Program Element (PE) for PB 2015. Funds were previously reported in Project MD31 of this PE.

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

The funds in this project sustain MDA DoD Information Assurance Certification and Accreditation Program (DIACAP) and Controls Validation Testing (CVT) activities, analysis of validation results, risk assessments and reviews of proposed Program Manager/Information Assurance Manager (PM/IAM) Plans of Action and Milestones (POAMs) for enabling M&S mission systems. This project maintains the Certification and Accreditation (C&A) data repository, capturing the DIACAP documentation (artifacts, validation results, Information Assurance Risk Assessment results, and Designated Approving Authority (DAA) accreditation decisions) and POAM on all M&S information systems.

This project supports the monitoring and tracking of Cybersecurity mitigations detailed in Information Technology security POAMs. Activities include preparation of C&A documentation and accreditation recommendations to the MDA Senior Information Assurance Officer (SIAO)/Certification Authority (CA) and DAA. Independent Verification and Validation team actions ensure the availability, integrity, authentication, confidentiality and non-repudiation of the MDA mission, test and administrative systems. Activities in the Project are necessary to comply with the Federal Information Security Management Act.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> Network/System Certification and Accreditation (C&A) for Modeling & Simulation (M&S)	0.204	0.225	0.253
<b>Articles:</b>	-	-	-
<b>Description:</b> See Mission Description Above.			
<b>FY 2015 Accomplishments:</b>			
- Conducted Cybersecurity/information assurance engineering and architecture planning for Enabling information technology systems.			
- Planned and tested the information assurance controls for Enabling systems.			
- Developed Enabling M&S DoD Information Assurance Certification and Accreditation Program (DIACAP) certification and accreditation packages.			
- Conducted Controls Validation Testing (CVT) of Enabling systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies.			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MC31 / M&S Cyber Operations
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>- Conducted annual information assurance reviews to assess compliance in implementing and maintaining information assurance controls.</p> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>- Conduct Cybersecurity/information assurance engineering and architecture planning for M&amp;S information technology systems.</li> <li>- Plan and test the information assurance controls for M&amp;S systems.</li> <li>- Develop M&amp;S DoD Information Assurance Certification and Accreditation Program (DIACAP) certification and accreditation packages.</li> <li>- Conduct Controls Validation Testing (CVT) of M&amp;S systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies.</li> <li>- Conduct annual information assurance reviews to assess compliance in implementing and maintaining information assurance controls.</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Conduct Cybersecurity/information assurance engineering and architecture planning for Engineering information technology systems.</li> <li>- Plan and test the information assurance controls for Engineering systems.</li> <li>- Develop Engineering DoD Information Assurance Certification and Accreditation Program (DIACAP) certification and accreditation packages.</li> <li>- Conduct Controls Validation Testing of systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies.</li> <li>- Conduct annual information assurance reviews to assess compliance in implementing and maintaining information assurance controls.</li> </ul>			
<b>Accomplishments/Planned Programs Subtotals</b>	0.204	0.225	0.253

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MC31 / M&S Cyber Operations
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<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Network/System Certification and Accreditation (C&A) for Modeling & Simulation (M&S) - CSS	C/CPFF	Torch Technologies : CO, AL	0.000	0.204		0.225	Nov 2015	0.253	Nov 2016	-		0.253	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	0.204		0.225		0.253		-		0.253	-	-	-

**Remarks**  
N/A

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	0.000	0.204	0.225	0.253	-	0.253	-	-	-

**Remarks**  
N/A

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MC31 / M&S Cyber Operations
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity +
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ✦

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MC31 M&S Cyber Operations					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MC31 / M&S Cyber Operations
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC31 M&S Cyber Operations	1	2016	4	2021

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs				<b>Project (Number/Name)</b> MD32 / Quality, Safety, and Mission Assurance			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
MD32: <i>Quality, Safety, and Mission Assurance</i>	148.024	29.358	29.986	31.022	-	31.022	29.582	29.970	31.470	31.967	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

The FY 2017 increase in funding allows for additional Audits and Quality On-Site Support as well as Pedigree and Design Certification deferred from prior years. Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

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

**Quality:** Provides on-site Quality Assurance (QA) inspection for all ground and flight tests to ensure that all processes and procedures are adhered to and no short cuts or deviations occur. Quality management system audits are performed on the sub tier supply chain to determine adequacy of contractor requirement flow down and sub tier supplier compliance to industry standards. Quality Subject Matter Experts (SMEs) attend BMDS configuration control boards to ensure quality is implemented across all Programs. Provides quality on-site formal inspection and resolution when troubled suppliers are identified and also initiates and leads on-site Joint Government and Industry Team field support and expertise to assist when critical sole source suppliers are failing. Conducts initiatives to revamp sole source suppliers by assisting them to get healthy and perform at world class levels, establishes consistent acquisition and award fee contractual requirements to ensure that a strategic approach is applied to all mission critical systems and maintains MDA Assurance Provisions for the Agency.

**Safety:** Responsible for system safety of the BMDS and for the Safety and Occupational Health of personnel located in the National Capital Region (NCR); Huntsville, Alabama; Fort Greely, Alaska; Vandenberg Air Force Base (VAFB), California; and, Dahlgren, VA. additionally responsible for ensuring the overall safety of the civilian, contractor and military workforce. BMDS Safety Officers (BSO) provide on-site support 24 hours a day, 7 days a week, 365 days a year to ensure operational safety of systems. Quality, Safety, and Mission Assurance verifies that all systems are functioning and tracking against actual verified targets and that all associated processes and procedures are strictly followed.

**Mission Assurance:** Provides in-plant MDA Assurance Representatives (MARs) for the MDA at government and contractor facilities. MARs are Government Mission Assurance and Quality experts who provide quality and technical oversight of contractor manufacturing. Mission Assurance Audits are conducted which focus on design margin, the effectiveness of acceptance testing and the sufficiency of manufacturing processes. Audits are performed for contractual requirements, internal requirements, and industry best practices. These audits are one of MDA's most effective methods of enabling change among the MDA contractors and suppliers. Quality, Safety, and Assurance provides Subject Matter Experts (SMEs) who attend all technical reviews (i.e. Design, Test, Mission Readiness Reviews, and Failure Review Boards) to ensure mission assurance principles are consistently implemented across the Ballistic Missile Defense System (BMDS). Quality, Safety, and Mission Assurance develops overarching design and quality standards such as the MDA Assurance Provisions (MAP) for MDA which enhances BMDS reliability. Hardware acceptance reviews and pedigree documentation reviews are performed to ensure all manufacturing rework and repair is performed within approved processes.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD32 / Quality, Safety, and Mission Assurance

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p><b>Title:</b> Quality, Safety &amp; Mission Assurance</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> N/A</p> <p><b>FY 2015 Accomplishments:</b> Quality:</p> <ul style="list-style-type: none"> <li>- Provided Government inspection and process control for flight test operations</li> <li>- Performed non-conformance reporting, tracking, and mitigation for all major flight and ground tests Provided non-advocate independent quality oversight/support to Agency operations such as configuration control boards, engineering forums, and material release activities</li> <li>- Performed configuration management verification and reconciliation for all major flight and ground test assets</li> <li>- Delivered detailed training on the updated MDA standards for quality, safety, and mission assurance to more than 160 MDA personnel</li> </ul> <p>Safety:</p> <ul style="list-style-type: none"> <li>- Maintained on-site safety oversight at key suppliers and Government facilities</li> <li>- Conducted safety risk assessments per Department of Defense Standards on all test and operational systems to ensure catastrophic risks remain improbable. All safety risks which were higher in probability were presented to MDA senior leadership for acceptance prior to experiencing risk.</li> <li>- Conducted system analysis/assessments such as safety risk assessments, failure modes and effects criticality analysis, safety hazards analysis etc., to minimize flight and operational system risks</li> <li>- Coordinated with NORTHCOM and STRATCOM to reduce safety risks possibly introduced into the BMDS by testing of ITW/AA radar systems.</li> <li>- Released the RFP for the first MDA Technical, Engineering, Analysis, and Management Support (TEAMS) contract, for follow on safety support when the MiDAESS contract.</li> </ul>	29.358	29.986	31.022
	-	-	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD32 / Quality, Safety, and Mission Assurance

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>Mission Assurance:</p> <ul style="list-style-type: none"> <li>- Provided the MDA Director non-advocate, independent technical assessments on system, subsystem and component design, manufacturing and test activities in support of operational deployment and flight test activities.</li> <li>- Provided non-advocate technical support to MDA and Program risk boards, configuration control boards, technical interchange meetings and failure review boards</li> <li>- Conducted Mission Assurance audits throughout the Missile Defense Agency's supply chain. Provided in-plant Mission Assurance and Quality Representatives at 23 critical locations/ suppliers.</li> <li>- Performed on-site Mission Assurance oversight for major flight and ground tests. Provided dedicated software quality and reliability support to various MDA Program Offices.</li> </ul> <p>BMDS Safety Officers (BSOs):</p> <ul style="list-style-type: none"> <li>- Provided 24 hours a day, 7 days a week, 365 days a year safety monitoring of operational and test systems to ensure safe transition between test and operations</li> <li>- Monitored and tracked non-conformance behavior of the operational and flight test systems</li> <li>- Performed software and hardware configuration verification along with supporting the Warfighter to asset management</li> <li>- Provided safety support for Eastern, Western and Pacific Range activities such as safety training and certification</li> </ul> <p>MDA Parts and Materials Program:</p> <ul style="list-style-type: none"> <li>- Enhanced BMDS reliability through the following activities:</li> <li>- Enforced Program compliance to the MDA Part, Material and Processes Assurance Provisions (PMAP)</li> <li>- Provided a Part and Material knowledge center to address Program and Supplier part and material issues arising from development or fielded systems</li> <li>- Updated the Agency's preferred parts and materials list database to include 250,000 items to facilitate new system design and to identify</li> </ul>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD32 / Quality, Safety, and Mission Assurance		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>part obsolescence issues</p> <ul style="list-style-type: none"> <li>- Pursued remedies against counterfeit parts that enter the supply chain. Analyzed eight suspect counterfeit parts for authenticity.</li> <li>- Conducted corrosion assessments and mitigation actions on MDA systems.</li> </ul> <p>Acquisition Support:</p> <ul style="list-style-type: none"> <li>- Ensured all new acquisitions are in compliance with the MDA Assurance Provisions (MAP), the MDA Parts, Materials and Processes Assurance Provisions and all applicable Defense Federal Acquisition Regulation (DFAR), Federal Acquisition Regulation (FAR), and clauses regarding quality, safety and mission assurance</li> <li>- Improved MDA's acquisition through participation in multiple source selections</li> </ul> <p>Technical Assistance to MDA Elements:</p> <ul style="list-style-type: none"> <li>- Performed independent/non-advocate reviews, such as design certification, pedigree, failure, preliminary design, critical design and technical interchange reviews to ensure compliance with industry best practices</li> <li>- Provided mission assurance support to major failure review boards to ensure comprehensive mitigation strategies for operational assets are employed</li> <li>- Provided propulsion, solid rocket motor, avionics, mechanical structures, guidance, navigation and control, and parts, materials, and processes expertise to enhance reliability</li> </ul> <p>Intra-Agency &amp; Industry Activities:</p> <ul style="list-style-type: none"> <li>- Performed major stakeholder quality initiatives to improve quality of products, improve onsite processes, and internal requirements at critical sole source suppliers</li> <li>- Participated in the Defense Standardization Board to ensure that MDA has an equal voice in the specification and standard requirements used across the DoD</li> </ul>				

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / <i>BMD Enabling Programs</i>	<b>Project (Number/Name)</b> MD32 / <i>Quality, Safety, and Mission Assurance</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>- Delivered training on the updated MDA standards for quality, safety, and mission assurance to more than 45 DCMA and Air Force and more than 40 industry personnel</p> <p>Safety and Occupational Health:</p> <ul style="list-style-type: none"> <li>- Ensured compliance with DoD Safety and Occupational Health regulations and requirements</li> <li>- Performed all required Occupational Safety and Health inspections of MDA facilities including those in the National Capital Region, Huntsville, AL, Colorado, Vandenberg Air Force Base, Dahlgren, VA and selected OCONUS locations.</li> <li>- Monitored/responded to reports of incidents affecting the health and safety of MDA employees and investigated accidents involving Agency personnel, equipment and operations.</li> <li>- Participated in the monthly DoD Safety and Occupational Health Integrating Council and the quarterly Field Federal Safety and Health Councils located in regions where MDA operates.</li> </ul> <p><b>FY 2016 Plans:</b> Continuation of FY 2015 plans.</p> <p><b>FY 2017 Plans:</b> The FY 2017 increase in funding allows for additional Audits and Quality On-Site Support as well as Pedigree and Design Certification deferred from prior years</p> <p>Quality:</p> <ul style="list-style-type: none"> <li>- Provide Government inspection and process control for flight test operations</li> <li>- Perform non-conformance reporting, tracking, and mitigation for all major flight and ground tests Provide non-advocate independent quality oversight/support to Agency operations such as configuration control boards, engineering forums, and material release activities</li> <li>- Perform configuration management verification and reconciliation for all major flight and ground test assets</li> </ul> <p>Safety:</p> <ul style="list-style-type: none"> <li>- Maintain on-site safety oversight at key suppliers and Government facilities</li> <li>- Conduct safety risk assessments per Department of Defense Standards on all test and operational systems to ensure catastrophic risks remain improbable</li> </ul>				

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD32 / Quality, Safety, and Mission Assurance		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>- Conduct system analysis/assessments such as safety risk assessments, failure modes and effects criticality analysis, safety hazards analysis etc., to minimize flight and operational system risks</p> <p>Mission Assurance:</p> <ul style="list-style-type: none"> <li>- Provide the MDA Director non-advocate, independent technical assessments on system, subsystem and component design, manufacturing and test activities in support of operational deployment and flight test activities Provide non-advocate technical support to MDA and Program risk boards, configuration control boards, technical interchange meetings and failure review boards</li> <li>- Conduct Mission Assurance audits throughout the MDA's supply chain Provide in-plant Mission Assurance and Quality Representatives at 23 Mission Critical Suppliers</li> </ul> <p>BMDS Safety Officers (BSOs):</p> <ul style="list-style-type: none"> <li>- Provide 24 hours a day, 7 days a week, 365 days a year safety monitoring of operational and test systems to ensure safe transition between test and operations</li> <li>- Monitor and track non-conformance behavior of the operational and flight test systems</li> <li>- Perform software and hardware configuration verification along with supporting the Warfighter to asset management</li> <li>- Provide safety support for Eastern, Western and Pacific Range activities such as safety training and certification</li> </ul> <p>MDA Parts and Materials Program:</p> <ul style="list-style-type: none"> <li>- Enhance BMDS reliability through the following activities:</li> <li>- Enforce Program compliance to the MDA Part, Material and Processes Assurance Provisions (PMAP)</li> <li>- Provide a Part and Material knowledge center to address Program and Supplier part and material issues arising from development or fielded systems</li> <li>- Update the Agency's preferred parts and materials list database to facilitate new system design and to identify part obsolescence issues</li> <li>- Pursue remedies against counterfeit parts</li> </ul> <p>Acquisition Support:</p> <ul style="list-style-type: none"> <li>- Ensure all new acquisitions are in compliance with the MDA Assurance Provisions (MAP), the MDA Parts, Materials and Processes Assurance Provisions</li> </ul>				

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD32 / Quality, Safety, and Mission Assurance		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>and all applicable Defense Federal Acquisition Regulation (DFAR), Federal Acquisition Regulation (FAR), and clauses regarding quality, safety and mission assurance</p> <ul style="list-style-type: none"> <li>- Update the MDA Assurance Provisions (MAP) and the MDA Parts Materials and Processes Mission Assurance Plan (PMAP) to incorporate design, test, manufacturing, quality, safety, and mission assurance methods to further improve future product reliability</li> <li>- Improve MDA's acquisition strategy through participation in the definition and determination of all award fees</li> </ul> <p>Technical Assistance to MDA Elements:</p> <ul style="list-style-type: none"> <li>- Perform independent/non-advocate reviews, such as design certification, pedigree, failure, preliminary design, critical design and technical interchange reviews to ensure compliance with industry best practices</li> <li>- Provide mission assurance support to major failure review boards to ensure comprehensive mitigation strategies for operational assets are employed</li> <li>- Provide propulsion, solid rocket motor, avionics, mechanical structures, guidance, navigation and control, and parts, materials, and processes expertise to enhance reliability</li> </ul> <p>Intra-Agency &amp; Industry Activities:</p> <ul style="list-style-type: none"> <li>- Perform major stakeholder quality initiatives to improve quality of products, improve onsite processes, and internal requirements at critical sole source suppliers</li> <li>- Participate in the Defense Standardization Board to ensure that MDA has an equal voice in the specification and standard requirements used across the DoD</li> <li>- Initiate and lead quality, safety, and mission assurance forums to obtain lessons learned and understand/promote new requirements or methods</li> </ul> <p>Safety and Occupational Health:</p> <ul style="list-style-type: none"> <li>- Ensure compliance with DoD Safety and Occupational Health regulations and requirements</li> <li>- Perform all required Occupational Safety and Health inspections of MDA facilities including those in the National Capital Region, Huntsville, AL, Colorado, Vandenberg Air Force Base and Dahlgren, VA.</li> </ul>				

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD32 / Quality, Safety, and Mission Assurance

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
- Monitor/respond to reports of incidents affecting the health and safety of MDA employees.			
<b>Accomplishments/Planned Programs Subtotals</b>	29.358	29.986	31.022

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

N/A

**Remarks**

**D. Acquisition Strategy**

The Quality, Safety and Mission Assurance program is a collaboration between subject matter expertise in the Government, Federally Funded Research and Development Centers (FFRDC), University Affiliated Research Centers (UARC), Contract Support Services (CSS), and Industry.

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD32 / Quality, Safety, and Mission Assurance
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

**Remarks**  
N/A

<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Quality, Safety & Mission Assurance - Agency Safety & Occupational Health	C/CPFF	Various Multi : AL, CO, AK, DC	1.779	0.288		0.260	Oct 2015	0.266	Sep 2017	-		0.266	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Audits & Quality On-site Support	MIPR	NSWC Corona : AL, CA	13.542	3.297		3.000	Oct 2015	3.338	Sep 2017	-		3.338	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Mission Assurance Agency Operations	C/CPFF	AI Solutions : AL	5.445	1.102		1.198	Oct 2015	1.009	Sep 2017	-		1.009	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Quality Support	C/CPFF	AI Solutions : AL	6.004	0.593		1.300	Oct 2015	1.710	Sep 2017	-		1.710	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Safety	C/CPFF	APT, INC : AL	7.268	1.180		1.180	Oct 2015	1.208	Sep 2017	-		1.208	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Safety Officers	MIPR	AMRDEC : AL	3.368	0.330		0.318	Oct 2015	0.281	Sep 2017	-		0.281	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - HQ & Core Management	MIPR	AMRDEC : AL	1.850	0.300		0.300	Oct 2015	0.300	Sep 2017	-		0.300	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - In-Plant Quality Support (MARS)	C/CPFF	Various Multi : AL, AK, AZ, CA, CO, FL,	8.269	1.802		1.355	Oct 2015	1.413	Sep 2017	-		1.413	Continuing	Continuing	Continuing

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD32 / Quality, Safety, and Mission Assurance
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<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		HI, NJ, MA, MO, MD, UT													
Quality, Safety & Mission Assurance - Independent Readiness Review Team	C/CPFF	AI Solutions : AL	3.740	0.529		0.540	Oct 2015	0.550	Sep 2017	-		0.550	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Mission Assurance Subject Matter Experts	C/CPFF	APT, INC. : AL	5.751	0.839		0.522	Oct 2015	0.531	Sep 2017	-		0.531	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Operations Support	MIPR	Various Multi : AL, CA	4.376	0.233		0.200	Oct 2015	0.200	Sep 2017	-		0.200	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Parts, Materials and Processes (PMP) Program	MIPR	Various Multi : AL, CA, IN	7.765	2.100		2.155	Oct 2015	2.015	Sep 2017	-		2.015	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Parts, Materials and Processes - PMP - Program	C/CPFF	APT, INC : AL	2.886	0.559		0.641	Oct 2015	0.600	Sep 2017	-		0.600	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Pedigree & Design Certification - FFRDC	MIPR	Aerospace : AL, CA	15.167	2.900		3.000	Oct 2015	3.000	Sep 2017	-		3.000	Continuing	Continuing	Continuing
<b>Subtotal</b>			87.210	16.052		15.969		16.421		-		16.421	-	-	-

**Remarks**  
N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD32 / Quality, Safety, and Mission Assurance
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

**Remarks**  
N/A

<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Quality, Safety & Mission Assurance - Quality, Safety & Mission Assurance HQ & Core Management (MDA CIV)	Allot	MDA QS : AL, VA, MD, CA, AZ, HI, AK, MA, NJ, FL, AR, UT	41.949	10.800		11.584	Oct 2015	11.751	Oct 2016	-		11.751	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Quality, Safety & Mission Assurance Operations Support	C/CPFF	MDA QS : AL, DC, VA	6.309	1.406		1.295	Oct 2015	1.527	Nov 2016	-		1.527	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Quality, Safety & Mission Assurance Operations Support (Travel/PCS)	Allot	MDA QS : AL, CO, AK, DC, VA	12.556	1.100		1.138	Oct 2015	1.323	Nov 2016	-		1.323	Continuing	Continuing	Continuing
<b>Subtotal</b>			60.814	13.306		14.017		14.601		-		14.601	-	-	-

**Remarks**  
N/A

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	148.024	29.358	29.986	31.022	-	31.022	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2017 Missile Defense Agency							<b>Date:</b> February 2016			
<b>Appropriation/Budget Activity</b> 0400 / 4			<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs			<b>Project (Number/Name)</b> MD32 / Quality, Safety, and Mission Assurance				
	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	

**Remarks**  
 Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD32 / Quality, Safety, and Mission Assurance
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ✦
Significant Event Planned ▲	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ✧

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MD32 Quality, Safety, and Mission Assurance					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦				

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2017 Missile Defense Agency		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD32 / Quality, Safety, and Mission Assurance

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD32 Quality, Safety, and Mission Assurance	1	2016	4	2020

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Missile Defense Agency										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs				<b>Project (Number/Name)</b> MD40 / Program-Wide Support			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
MD40: <i>Program-Wide Support</i>	88.202	18.924	17.992	18.483	-	18.483	19.655	20.873	22.014	22.982	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY 2016, Program Wide Support (PWS) reflects a proportional change as a result of decreases in BMD Enabling Programs and in FY 2017 PWS reflects a proportional change as a result of increases in BMD Enabling Programs.  
 Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts and Military Interdepartmental Purchase Requests on the R-3.

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

PWS contains non-headquarters management costs in support of MDA functions and activities across the entire BMDS. It Includes Government Civilians, and Contract Support Services. This provides integrity and oversight of the BMDS as well as supports MDA in the development and evaluation of technologies that will respond to the changing threat. Additionally, PWS includes Global Deployment personnel and support performing deployment site preparation and activation and, provides facility capabilities for MDA Executing Agent locations. Other MDA wide costs includes: physical and technical security; civilian drug testing; audit readiness; the Science, Technology, Engineering, and Mathematics (STEM) program; legal services and settlements; travel and agency training; office, equipment, vehicle, and warehouse leases; utilities and base operations; data and unified communications support; supplies and maintenance; materiel and readiness and central property management of equipment; and similar operating expenses. PWS is allocated on a pro-rata basis and therefore, fluctuates by year based on the adjusted RDT&E profile (which excludes: 0305103C Cyber Security Initiative, 0603274C Special Programs, 0603913C Israeli Cooperative Program and 0901598C Management Headquarters).

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> Program Wide Support	18.924	17.992	18.483
<b>Articles:</b>	-	-	-
<b>Description:</b> N/A			
<b>FY 2015 Accomplishments:</b> See paragraph A: Mission Description and Budget Item Justification			
<b>FY 2016 Plans:</b> See paragraph A: Mission Description and Budget Item Justification			
<b>FY 2017 Plans:</b> - See paragraph A: Mission Description and Budget Item Justification			
<b>Accomplishments/Planned Programs Subtotals</b>	18.924	17.992	18.483

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**Exhibit R-2A, RDT&E Project Justification:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / <i>BMD Enabling Programs</i>	<b>Project (Number/Name)</b> MD40 / <i>Program-Wide Support</i>
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**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD40 / Program-Wide Support
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<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Facilities and Maintenance (MIPR)	MIPR	Various Multi: AL, CO, CA, VA etc.	7.523	0.600		6.934	Jan 2016	7.063	Jan 2017	-		7.063	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Allot	Various: Multi: AL, CA, CO, VA	5.411	0.005		0.000		0.236	Jul 2017	-		0.236	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations User Services	C/CPAF	Various: Multi: AL, CO, NM, VA, various	0.000	5.602		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	MDA: AK, AL, CA, CO, VA	32.378	0.000		0.000		0.000		-		0.000	32.378	64.756	0
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various: Multi: AL, CO, CA, VA	42.890	12.717		10.253	Nov 2015	10.253	Nov 2016	-		10.253	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (Reqn)	Reqn	Various: Multi: AK, AL, CA, CO, VA	0.000	0.000		0.805	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services MIPRs	MIPR	Various: Multi: AK, AL, CO, CA, HI, MD, VA, NJ, NY, OCONUS	0.000	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - FFRDC	C/CPFF	JHU: CA	0.000	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Facilities and Maintenance SRM	MIPR	Various: Multi: AL, CA, AL, AK	0.000	0.000		0.000		0.931	Jul 2017	-		0.931	Continuing	Continuing	Continuing
<b>Subtotal</b>			88.202	18.924		17.992		18.483		-		18.483	-	-	-

**Remarks**  
N/A

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD40 / Program-Wide Support
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	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	88.202	18.924	17.992	18.483	-	18.483	-	-	-

**Remarks**

N/A

**UNCLASSIFIED**

**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD40 / Program-Wide Support
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ✦
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ✧

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MD40 Program-Wide Support					✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧				

**UNCLASSIFIED**

**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Missile Defense Agency **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603890C / BMD Enabling Programs	<b>Project (Number/Name)</b> MD40 / Program-Wide Support
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2016	4	2020