Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Missile Defense Agency											Date: February 2015	
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	949.270	368.965	401.971	409.088	-	409.088	423.092	417.831	420.104	433.604	Continuing	Continuing
MD24: *System Engineering & Integration*	341.857	123.434	138.633	141.651	-	141.651	137.594	139.599	141.353	142.459	Continuing	Continuing
MT23: *Enabling - Test*	29.288	30.298	18.961	19.576	-	19.576	23.709	27.677	26.632	24.968	Continuing	Continuing
MD28: *Intelligence & Security*	62.314	37.969	37.131	40.263	-	40.263	45.182	45.773	46.108	48.378	Continuing	Continuing
MD30: *BMD Information Management Systems*	82.677	79.572	95.197	95.710	-	95.710	97.050	83.201	82.506	87.440	Continuing	Continuing
MC30: *Cyber Operations*	-	12.389	15.452	20.017	-	20.017	23.044	21.164	21.330	24.088	Continuing	Continuing
MD31: *Modeling & Simulation*	245.823	36.388	41.957	43.668	-	43.668	45.989	48.495	48.953	50.782	Continuing	Continuing
MC31: *M&S Cyber Operations*	-	-	0.223	0.225	-	0.225	0.227	0.233	0.235	0.244	Continuing	Continuing
MD32: *Quality, Safety, and Mission Assurance*	122.042	25.982	30.637	29.986	-	29.986	30.294	30.291	30.607	31.756	Continuing	Continuing
MD40: *Program-Wide Support*	65.269	22.933	23.780	17.992	-	17.992	20.003	21.398	22.380	23.489	Continuing	Continuing
Program MDAP/MAIS Code: 362												

Note

N/A

A. Mission Description and Budget Item Justification

The Ballistic Missile Defense (BMD) System Enabling Programs provide the Missile Defense Agency (MDA) with the critical products and processes needed to combine element missile defense systems into a single, integrated and layered Ballistic Missile Defense System (BMDS), providing the capability required by the BMD Review while improving protection performance and minimizing force structure costs. BMD System-level engineering and integration enables interoperability and drives future capability development from a System perspective to maximize the effectiveness of BMD technologies. Specifically, the Enabling Programs evaluate the integrated BMD System functionality, threat, manufacturing maturity, technical safeguards, and mission assurance effectiveness while simultaneously assessing whether the System is proficient at maintaining its integrity and superiority with advances in technology development. As a result, MDA is able to provide evolving, integrated and layered BMDS performance and capabilities that have been thoroughly assessed and validated through testing and Modeling and Simulation.

This Program Element includes support for the Discrimination Improvements for Homeland Defense (DIHD) effort. The goal of this effort is 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 future BMDS architecture more capable of discriminating and destroying a re-entry vehicle with a high degree of confidence, improving Warfighter shot doctrine and preserving inventory. This

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Missile Defense Agency	Date: February 2015
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*

effort encompasses a Near-term, Mid-term, and Far-term DIHD capability fielding. DIHD is a combined 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).

The MDA Enabling Programs are:
-(MD24) Systems Engineering and Integration (SE&I) - Systems Engineering and Integration leads the integration of the Ballistic Missile Defense (BMD) System using Element and Component capabilities to provide the Warfighter with the ability to defend the United States and its friends and allies from ballistic missile attacks. Systems Engineering defines and develops integrated BMD System capability improvements through BMD level control of system requirements, and allocates those requirements to the Elements and Components most capable of supporting intercepts in a particular Phased Adaptive Approach (PAA) phase.
-(MT23) Enabling-Test - The Enabling Programs Test project drives BMDS test planning, execution and post-test assessment and provides critical data for proving that missile defense works.
-(MD28) Intelligence and Security - MDA develops data from intelligence sources into the necessary engineering products that drive the design, development, and testing used to inform and support decision-making for BMD System capability deliveries. Engineering processes translate missile data into threat parameter space and generate threat scenarios contained in the SE&I-developed Adversary Capability Document. These products are also fundamental for system ground testing, hardware-in-the-loop testing, and the target development for live-fire testing necessary to assess system operation and verify and validate system performance. Security is also provided as an Enabling Program to apply protection across the entire BMDS and MDA.
-(MD30) Information Management Systems - Information Management is vital to the efficient operation and safeguarding of all information, from development to fielding new BMDS capabilities.
-(MC30) Cyber Operations - The Cyber Operations project 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 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) - As missile defense technologies continually advance and the threat changes, M&S develops system-level models, simulations, and environments, then evaluates performance of the Elements, Components, and overall BMD System in support of verification, validation and accreditation activities. 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. Through conceptual simulation activities, M&S provides 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 - Quality, Safety, and Mission Assurance has the distinct management role of improving 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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Missile Defense Agency	Date: February 2015
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603890C *I BMD Enabling Programs*

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

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	372.309	410.863	412.264	-	412.264
Current President's Budget	368.965	401.971	409.088	-	409.088
Total Adjustments	-3.344	-8.892	-3.176	-	-3.176
• Congressional General Reductions	-	-0.192			
• Congressional Directed Reductions	-	-8.700			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.526	-			
• SBIR/STTR Transfer	-5.870	-			
• Other Adjustment	-	-	-3.176	-	-3.176

Change Summary Explanation

FY 2015 changes reflect Public Law 113-235, FY2015 Omnibus; Consolidated and Further Continuing Appropriations Act.

The FY 2016 decrease reflects realignment of Department of Defense priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD24 / *System Engineering & Integration*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MD24: *System Engineering & Integration*	341.857	123.434	138.633	141.651	-	141.651	137.594	139.599	141.353	142.459	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

Systems Engineering and Integration (SE&I) continues to develop and improve the integrated Ballistic Missile Defense System (BMDS) architectures, engineer major improvements to regional Ballistic Missile Defense (BMD) capabilities, provide system improvements that enable earlier BMD engagements, and develop the BMDS level Models and Simulations (M&S) necessary to support BMDS testing and delivery to the Warfighter. SE&I is the single team that applies its technical expertise and tools across many disciplines and specialties to lead a collaborative effort to define, design, test and integrate the Ballistic Missile Defense System. 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-making and planning activities for real-world operations to the National Command Authority, Joint Staff, Military Services, North Atlantic Treaty Organization (NATO), Combatant Commanders, Operational Test Agencies, Director of Operational Test and Evaluation, Allies, and others.

Fundamental to the System Engineering and Integration approach is development, coordination, and dissemination of fully vetted products at each stage of the engineering process. These products document and 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 include the collection of data needed to anchor the system representative models and simulations and enable independent verification and validation; assessment through ground and flight test results; and fielding plans.

SE&I defines required system-wide behavior, validates Element system designs, and assesses and verifies 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 Improvements for Homeland Defense (DIHD) effort will develop and field integrated Element capabilities to improve BMD System ability to identify lethal and non-lethal objects. System Engineering and Integration (SE&I) will perform BMDS performance analysis and requirements engineering activities to specify the BMDS requirements and interfaces to achieve the DIHD capability. SE&I will allocate DIHD Near-term performance requirements across BMDS elements. For DIHD Mid-term and Far-term, SE&I will establish performance goals for the technology development phase, and develop functional, performance, and interface requirements to address the DIHD Mid-term and Far-term threat set. SE&I will establish ground and flight test requirements for Near-term, Mid-term, and Far-term phases, and generate threat data to support analysis and testing activities.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

The SE&I Major Program Goals are:
- Develop, design, test and integrate a layered BMDS that provides the required Ballistic Missile Defense performance
- Provide system-level support to the Elements, and lead collaborative cross-Element, cross-Component engineering
- Develop the European Phased Adaptive Approach (EPAA) architecture 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 in Europe, and enhance homeland defense
- Develop discrimination improvements for the Homeland Defense mission.
- As technical authority for Integrated Air and Missile Defense (IAMD), provide a consistent, disciplined systems engineering process using a multi-Service systems engineering team to support integration of 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
- Verify and assess Ballistic Missile Defense System (BMDS) performance and capabilities through testing
- Develop BMDS performance assessment requirements, and conduct assessments that form the basis for technical capability declarations in support of system fielding decisions
- Identify the Critical Engagement Conditions and data required to develop the test campaigns that will demonstrate regional defense performance, and verify and assess the capability of each Phased Adaptive Approach
- Define the test objectives necessary to anchor BMDS-level models and simulations, enable independent verification and validation, and identify System issues occurring in ground and flight tests
- 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 2014	FY 2015	FY 2016
Title: Future Concepts and Planning	14.432	12.451	13.285
Articles:	-	-	-
Description: This activity funds the Ballistic Missile Defense System (BMDS) architecture and future concept development, and efforts and studies to address the BMDS emergent threat. 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.			
FY 2014 Accomplishments: - Supported technical evaluation activities for future programs (improvements to Command and Control Battle Management and Communications (C2BMC), Aegis 5.1). - Conducted BMDS Performance Analysis and Trade Studies to support technical reviews (C2BMC, Aegis 5.1).			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Conducted BMDS Program of Record gap assessment and concept alternative assessment in support of the budget development process. - Initiated Development of Capability Planning Specifications to document functional and performance requirements for Future BMDS Programs. - Analyzed architecture alternatives and new technologies, including advanced weapon and sensor concepts (such as airborne infrared (IR) technologies, Directed Energy (laser) concepts, and rail gun applications). - Identified and evaluated architecture alternatives that are complementary to and interoperable with North Atlantic Treaty Organization (NATO) systems and theaters around the world and that improve the systems` performance. - Participated in CAPE-directed Analysis of Alternatives (AoA) for Homeland Defense and Sensors Evaluation of Options. - Assessed and added emerging threats to the Missile Defense Agency (MDA)`s lethality prediction models. - Produced and executed the BMDS Lethality Program Plan to encompass updates to lethality assessments, collateral effects and consequences. - Assessed emerging threats and developed countermeasure mitigation strategies and roadmaps.			
FY 2015 Plans: - Identify architecture alternatives that improve the BMD System's performance and are complementary to and interoperable with NATO systems and theaters around the world. - Analyze architecture alternatives and new technologies, including new radar concepts. - Conduct BMDS Program of Record gap assessment and concept alternatives assessments in support of the budget development process. - Update concept capability documentation based on the results of the Phased Adaptive Approach (PAA) Phase 3 and future architectural trade studies and technology development experiments. - Develop and document integrated requirements for improvements to, or augmentations of, current system capabilities in the form of a Phased Implementation Plan. - Support Warfighter development of the Prioritized Capabilities List (PCL). - Develop the Achievable Capabilities List (ACL) to respond to the PCL. - Develop and refine Capability Planning Specifications for future BMDS Elements/Components. - Support technology development reviews for future/follow-on BMDS Element development efforts.			
FY 2016 Plans: FY 2016 increase is to assess options for integration of future BMD capabilities. - Conduct studies to address Ballistic Missile Defense System capability gaps and keep pace with emergent regional and homeland threats. -- Analyze and document architecture alternatives and new technologies to address the gaps, including directed energy, Electro-Optical/Infrared sensors and multiple object kill vehicles. -- Develop initial functional, performance and integration planning requirements for the next generation weapons and sensors			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
-- Identify architecture alternatives that improve the BMD System's performance and are complementary to and interoperable with NATO systems and theaters around the world. - 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. - Update concept capability documentation based on architectural options, trade studies, and technology development experiments. - Develop and document integrated requirements for improvements to, or augmentations of, current system capabilities in the form of a Phased Implementation Plan. - 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. - Develop and refine Initial Requirements Documentation and Preliminary Specification Change Notices for future BMDS Elements/Components. - Support technology development reviews for future/follow-on BMDS Element development efforts.			
Title: Requirements and Design	28.042	27.354	28.391
Articles:	-	-	-
Description: The Requirements and Design effort develops the Ballistic Missile Defense (BMD) System level requirements and specifications for the Phased Adaptive Approach (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.			
FY 2014 Accomplishments: - Conducted BMDS Engineering Reviews to address new capabilities: --Conducted BMD System/Subsystem Design Reviews following FY 2014 Element Requirement Reviews to assess maturity of the evolving technical baseline (System and Subsystem levels) and plans for integration, test and verification. -- Determined BMD system implications resulting from the Aegis BMD 5.1 Preliminary Design Review (PDR) and the Standard Missile-3 Block IIA (SM-3 Blk IIA) Critical Design Review (CDR). --Performed technical evaluations of emerging adversary characteristics. - Conducted engineering analyses and performed trade studies for system design and development products. - Updated BMDS Engineering Documentation to capture refinements to integrated system build content approved for design, development and integration, in accordance with BMDS Phased Implementation Plan: --Delivered BMD System Description Document (BMD SDD) and BMD System Specification (BMD SS) updates (e.g. incorporation of Robust IRBM Defense capabilities). --Delivered updated BMDS Interface Control Documents (ICDs).			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Continued to provide updated requirements traceability and certification guidance and conducted detailed System/Element requirements reconciliation to resolve technical disconnects and ensure common requirements interpretation. - Conducted engineering analyses and studies for regional BMD and COCOM-specific requests. ***FY 2015 Plans:*** - Develop functional performance, interface, and design suitability requirements in collaboration with BMDS element engineers to flow-down and allocate requirements to Programs. - 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. - Conduct 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. - Conduct engineering analyses and perform trade studies for system design and development products. - Complete the engineering work to finalize System Change Notices (SCNs) for PAA Phase 3 requirements changes, to include mitigation strategies to address BMDS Discrepancy Reports. - Develop requirements language for Discrimination Improvements for Homeland Defense (DIHD) Mid Term capabilities to executing elements, in collaboration with BMDS Program Elements. - Develop requirements language for Common Kill Vehicle (CKV) Requests for Proposals (RFP). - Conduct CKV System Requirements Review (SRR). - Provide updated requirements traceability and certification guidance and conduct detailed System/Element requirements reconciliation to resolve technical disconnects and ensure common requirements interpretation. ***FY 2016 Plans:*** FY 2016 increase addresses interceptor lethality requirements. - Develop functional performance, interface, and design suitability requirements in collaboration with BMDS element engineers to flow-down and allocate requirements to Programs. - 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. - 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. - Conduct engineering analyses and perform trade studies for system design and development products. - Develop Specification Change Notices (SCNs) for post- PAA Phase 3 requirements changes, to include mitigation strategies to address BMDS Discrepancy Reports. - Deliver requirements language for Discrimination Improvements for Homeland Defense (DIHD) Mid Term capabilities to executing elements, in collaboration with BMDS Program Elements.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Refine Redesigned Exoatmospheric Kill Vehicle (REKV) requirements for Enhanced Homeland Defense. - Provide updated requirements traceability and certification guidance and conduct detailed System/Element requirements reconciliation to resolve technical disconnects and ensure common requirements interpretation. - Assess and add emerging threats to MDA`s lethality prediction models. - Produce and execute the BMDS Lethality Program Plan to encompass updates to lethality assessments, collateral effects and consequences.			
Title: Systems Engineering, Engineering Analysis and Quick Response Team	8.848	8.851	9.504
Articles:	-	-	-
Description: The Systems Engineering, Engineering Analysis, and Quick Response Team 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); supports Real World Events; and maintains the Effectiveness Metrics Standard to ensure consistent and accurate analyses.			
FY 2014 Accomplishments: - Conducted system level performance analysis to support ongoing BMDS Architecture and Systems Engineering efforts: -- Conducted performance analysis to support the development Homeland Defense system architecture options. -- Developed expected performance for PAA phase 3 and beyond. -- Conducted technical analyses and provided performance predictions for future BMDS components, such as additional radars, interceptor sites, and Redesigned Kill Vehicle (RKV). -- Provided technical assessments in critical areas, such as technical performance measures. - Conducted analyses to support Aegis BMD 5.1 and Standard Missile-3 Block IIA (SM-3 Blk IIA) engineering reviews. - Supported VV&A of primary BMDS performance model. - Responded to 44 Warfighter, COCOM and other requests for analyses and requests for information and provided analytical support for real-world events. - Provided updated Element/Component Characteristics for Analysis (E/CCA) with performance Element data changes to ensure consistent capability predictions and analyses. - Maintained the Effective Metric Standard (EMS) necessary for systematic presentation of alternatives to MDA senior leaders and the Combatant Commanders.			
FY 2015 Plans: - Continue performance analysis to support the development Homeland Defense system architecture options. - Conduct system level performance analyses to support ongoing BMDS Architecture and Systems Engineering efforts: -- Analyze and predict the performance of future BMDS capabilities, such as new sensor concepts. -- Provide technical assessments in critical areas, such as technical performance measures.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Respond to Warfighter, Combatant Command (COCOM) and other requests for analyses and requests for information; provide analytical support for real-world events. - Provide updated Element/Component Characteristics for Analysis (E/CCA) with Element data changes to ensure consistent capability predictions and analyses. - Maintain the Effective Metric Standard (EMS) necessary for systematic presentation of alternatives to MDA senior leaders and the Combatant Commanders. ***FY 2016 Plans:*** FY 2016 increase keeps pace with increased demand for technical performance analyses. - Continue performance analysis to support the development of Homeland Defense system architecture development and employment options. - Conduct system level performance analyses to support ongoing BMDS Architecture and Systems Engineering efforts: -- Analyze and predict the performance of future BMDS capabilities, such as Long Range Discrimination Radar and other advanced sensors. -- Provide technical assessments in critical areas, and collaborate with BMDS Elements to define and track technical performance measures. - Respond to Warfighter, Combatant Command (COCOM) and other requests for analyses and requests for information; provide analytical support for real-world events. - Provide updated Element/Component Characteristics for Analysis (E/CCA) Element data to ensure consistent capability predictions and analyses. - Maintain the Effective Metric Standard (EMS) necessary for systematic presentation of alternatives to MDA senior leaders and the Combatant Commanders.			
Title: Anti-Tamper & Engineering Manufacturing Readiness Level Development ***Articles:*** ***Description:*** Anti-Tamper & Engineering Manufacturing Readiness Level (EMRL) Development develops anti-tamper approaches to enable international fielding of the Ballistic Missile Defense System (BMDS) by providing protection against reverse engineering of critical technologies, supporting coalition warfare, and extending the effective operational life of the BMDS. ***FY 2014 Accomplishments:*** - Assisted BMDS Programs in developing Anti-Tamper strategy, to facilitate horizontal protection of BMDS enabling technologies and obtained concurrence of Department of Defense Anti-Tamper Executive Agent on Anti-Tamper Plans for BMDS Programs. - Continued to develop Anti-Tamper detection and response technologies to mitigate risk. - Applied Engineering and Manufacturing Readiness Levels (EMRLs) to evaluate engineering and manufacturing maturity of BMDS elements, systems, and components.	4.899 -	5.683 -	5.382 -

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Assessed and reported readiness of MDA development efforts for transition to production. ***FY 2015 Plans:*** - Develop anti-tamper approaches to enable international fielding, support coalition warfare, and extend the effective operational life of the BMDS. - Assist BMDS Programs in developing and implementing Anti-Tamper detection and response technologies to mitigate risk. - Apply Engineering and Manufacturing Readiness Levels (EMRLs) to evaluate engineering and manufacturing maturity of BMDS elements, systems, and components. - Assess and report readiness of MDA development efforts for transition to production. ***FY 2016 Plans:*** FY 2016 decrease reflects flow-down of EMRL criteria to Elements. - Develop and implement anti-tamper approaches to enable international fielding, support coalition warfare, and extend the effective operational life of the BMDS. - Assist BMDS Programs in developing and implementing Anti-Tamper detection and response technologies to mitigate risk. - Monitor application of Engineering and Manufacturing Readiness Levels (EMRLs) to evaluate engineering and manufacturing maturity of BMDS elements, systems, and components. - Assess and report readiness of MDA development efforts for transition to production.			
Title: System-Level Verification and Assessment	17.185	14.126	14.686
Articles:	-	-	-
Description: 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 Ballistic Missile Defense System (BMDS) capabilities. This effort also provides subject matter expertise to support high priority BMDS studies and reviews. ***FY 2014 Accomplishments:*** - Performed independent analyses and assessments for MDA Leadership, including investment prioritization, system architecture studies, design reviews, and failure investigations. - Conducted non-advocate assessments of the BMDS capabilities and limitations prior to capability delivery decisions to determine fielding readiness, including assessments of Defense of the Homeland, Phased Adaptive Approach (PAA), Defense of Israel and Theater/Regional BMD configurations. - 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 digital Modeling and Simulation events.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Defined 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). -- Evaluated current Modeling & Simulation (M&S) capability to address assessment requirements for new capabilities, and provide recommendations for new or improved M&S. ***FY 2015 Plans:*** - Conduct 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) - Conduct extensive analysis of data collected in BMD test events (digital, hardware-in-the-loop, and flight test), instrumental to understanding BMD operations and performance - Identify mitigation approaches for system performance issues uncovered during the course of analysis and assessment - Produce independent assessments of each Capability Delivery for THAAD, PATRIOT, Aegis BMD, AN/TPY-2 and C2BMC in support of fielding readiness for PAA Phases - Perform independent analyses and assessments for MDA Leadership, including investment prioritization, system architecture studies, design reviews, and failure investigations. - Monitor development and recommend 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. ***FY 2016 Plans:*** FY 2016 increase supports completion of EPAA Phase 2 assessment. - 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). -- Evaluate current Modeling & Simulation (M&S) capability to address assessment requirements for new capabilities, and provide recommendations for new or improved M&S. - 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. - Identify mitigation approaches for system performance issues uncovered during the course of analysis and assessment. - 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. - 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). - 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.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Perform non-advocate analyses and assessments for MDA Leadership, including investment prioritization, system architecture studies, design reviews, and failure investigations.			
Title: Knowledge Centers	14.235	13.269	14.452
Articles:	-	-	-
Description: Knowledge Centers serve as independent technical advisors to Ballistic Missile Defense System (BMDS) program offices in the C2BMC, Interceptor, Space, and Sensor areas to support development of technical approaches and improve reliability.			
FY 2014 Accomplishments: -Provided reach-back capability (via Federally Funded Research and Development Centers and University Affiliated Research Centers) for Element program managers in the four key technical areas of C2BMC, Interceptors, Sensors, and Space: -- Supported BMDS and Element Independent Review Teams -- Identified and provided recommendations to mitigate technical risks; incorporated out-of-the-box concepts for Risk Mitigation and Reduction -- Provided independent technical analysis to support Knowledge Point definitions, system and element performance assessments, and risk management -- Provided subject matter expertise for Failure Review Boards and Failure Investigation teams -- Conducted assessments of emerging technologies, including focal plane array development, radiation-hardened components, and improvements to modeling and simulation.			
FY 2015 Plans: -Provide reach-back capability (Federally Funded Research and Development Centers and University Affiliated Research Centers) for Element program managers: -- Support BMDS and Element Independent Review Teams -- Identify and provide recommendations to mitigate technical risks: incorporate out-of-the-box concepts for Risk Mitigation and Reduction -- Provide independent technical analysis to support Knowledge Point definitions, system and element performance assessments, and risk management -- Provide subject matter expertise for Mission Assurance assessments, Failure Review Boards and Failure Investigation teams -- Conduct assessments of emerging technologies, including focal plane array development, radiation-hardened components, and improvements to modeling and simulation			
FY 2016 Plans: FY 2016 increase supports additional demand for interceptor expertise for Homeland Defense improvements.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- 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: -- Support BMDS and Element Independent Review Teams -- Identify and provide recommendations to mitigate technical risks: incorporate out-of-the-box concepts for Risk Mitigation and Reduction -- Promote knowledge sharing from external technical sources to MDA -- Provide analysis and support for mission assurance assessments, Failure Review Boards and Failure Investigation teams - Provide independent technical analysis: -- Support Knowledge Point definition for new programs (i.e., LRDR, RKV) -- Continue to provide system and element performance assessments for BMDS programs - Conduct assessments of emerging technologies as required.			
Title: Risk Management	5.480	6.701	7.272
Articles:	-	-	-
Description: The Risk Management task identifies Ballistic Missile Defense System (BMDS) Element and Component technical risks, and tracks status and risk mitigation progress. ***FY 2014 Accomplishments:*** - Established, managed, and maintained configuration control the MDA Risk Management process. - Reviewed and approved program element risks, on quarterly basis. - Convened and chaired Risk Management Working Group. ***FY 2015 Plans:*** - Convene and chair Risk Management Working Group. - Execute the risk management and mission readiness working group process. - Establish and maintain a risk database using the Failure Reporting and Corrective Action System (FRACAS). - Review and approve program element risks, on quarterly basis. ***FY 2016 Plans:*** FY 2016 increase supports risk mitigation for EPAA Phase 2 Technical Capability Declaration. - Convene and chair Risk Management Working Group. - Execute the risk management and mission readiness working group process. - Maintain a risk database using the Failure Reporting and Corrective Action System (FRACAS). - Review and approve program element risks, on quarterly basis.			
Title: Manufacturing and Producibility	2.500	4.126	4.441
Articles:	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
Description: 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. ***FY 2014 Accomplishments:*** - Updated MDA reliability standards and procured reliability tools. - Assessed failures of operationally deployed equipment to identify trends and corrective actions. - Established MDA industrial base capability assessments tied to manufacturing technology. - Assessed and identified plans to reduce critical manufacturing materials and technologies in missile production. - Integrated reliability and production improvements with SBIR research and development. - Supported development of a cost-effective and producible Redesigned Kill Vehicle (RKV). ***FY 2015 Plans:*** - Assess the effectiveness of reliability programs for each MDA Product (Radar, Launcher, Missile/Interceptor, etc.) to achieve/ sustain required reliability. - Identify failure trends/modes -- Evaluate impact on the Probability of Mission Success -- Evaluate Return on Investment (ROI) from implementing corrective actions. - Review the Stockpile Reliability Programs for all MDA Missiles/Interceptors for effectiveness, and identify opportunities for efficiencies to be gained by sharing test resources or test results/analysis for common/comparable components. - Implement supply chain risk identification and mitigation tracking system across the BMDS. - Conduct deep dive into critical component supply base. - Utilize tracking system to mitigate manufacturing supply issues with critical components. - Support the development of a cost-effective and producible Common Kill Vehicle (CKV). FY 2015 increase due to increased support for supply chain risk management and CKV efforts. ***FY 2016 Plans:*** FY 2016 increase reflects additional emphasis on standardization and monitoring of Manufacturing and Producibility practices at Primes. Manufacturing and Producibility: - Continue Implementation of supply chain risk identification and mitigation tracking system across the BMDS. - Conduct assessment into critical component supply base. - Conduct technical assessments of critical manufacturing technologies and collaborate investment strategies with national security space components.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Utilize tracking system to mitigate manufacturing supply issues with critical components. Reliability: - Assess the effectiveness of reliability programs for each MDA Product (Radar, Launcher, Missile/Interceptor, etc.) to achieve/ sustain required reliability. - Provide Reliability Analysis In Support Of Risk and Mission Success Assessments For BMDS Flight Test. - Identify failure trends/modes -- Evaluate impact on the Probability of Mission Success -- Evaluate Return on Investment (ROI) from implementing corrective actions. - Work with Logistics Support to develop MDA Reliability and Logistic Policies/Plans that are synergistic and promote an integrated Sustainability effort within the Elements. - Ensure that BMDS products have achieved the required maturity in RAM to support the transition from MDA to the appropriate service organization.			
Title: Discrimination	27.813	31.972	29.038
Articles:	-	-	-
Description: The Discrimination Improvements for Homeland Defense (DIHD) effort will develop and field Near-term, Mid-term, and Far-term integrated Element capabilities to improve BMD System ability to identify lethal and non-lethal objects for fielding in the Near-term, Mid-term, and Far-term. This effort includes BMDS performance analysis and requirements development to specify the BMDS requirements and interfaces to achieve the DIHD capability. SE&I will allocate discrimination performance requirements across BMDS elements and all DIHD phases. For Mid-term and Far-term DIHD, SE&I will establish performance goals for the technology development phase, and develop functional, performance, and interface requirements to address the DIHD Mid-term and Far-term threat set. SE&I will establish ground and flight test target requirements for Near-term, Mid-term, and Far-term phases, and generate threat data to support analysis, design, development, and testing activities.			
FY 2014 Accomplishments: - Completed Near-Term DIHD threat requirements and development of threat data. - Developed specification change notices for Near-Term Discrimination Improvements for Homeland Defense (DIHD) functional and performance requirements. - Completed initial development of Mid-Term DIHD threat data to support technology assessment activities. - Published technical content definition and scoping of the Near-Term and Mid-Term DIHD capabilities and provided it to executing Elements. - Completed performance prediction for Mid-Term DIHD proposed technology. - Assessed feasibility, contribution, and maturity of candidate discrimination technologies to support the Mid-term DIHD capability. - Completed development of ground test campaign requirements for Near-Term DIHD improvements.			

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Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Completed development of flight test data collection requirements for risk reduction of Near-Term DIHD, and Mid-Term DIHD improvements. - Conducted studies, analysis, implementation, and test of Ground Based Interceptor (GBI) salvo logic, systems performance to support the BMDS specification change notice, target object map improved acceptance, and advanced qualified re-entry vehicle as well as the associated algorithm design for near term DIHD - Initiated the program management, systems engineering, and special access program (SAP) requirements for mid-term DIHD - Initiated near term and mid-term SAP requirements, and FFRDC efforts - Provided Aegis BMD system engineering support for Near Term DIHD initiative - Conducted threat engineering to assess NT DIHD threat data maturity and availability for BMD 4.0.3 use - Updated models and performed predictive analysis to assess Long Range Surveillance and Track (LRS&T) capability against the emergent threat - Developed engineering solutions and began BMD 4.0.3 baseline upgrade to incorporate LRS&T capability against the emergent threat - Defined concepts for improved Aegis BMD tracking and discrimination capabilities - Developed discrimination algorithms and identified discrimination enhancements to existing Aegis BMD design - Conducted modeling and simulation and performance analysis of proposed discrimination algorithms in preparation for transition into a future Aegis BMD baseline			
FY 2015 Plans: - Complete integration phase for DIHD Near-term ground testing via GTI-06. - Conduct planning, assessment, and specification work to keep pace with emerging threat. - Continue development of software upgrades to C2BMC to aggregate information from multiple sensors to improve identification of lethal targets to fire control. - Continue development of TPY-2 sensor and interface upgrades required to pass sensor generated features to C2BMC needed for improving identification of lethal targets. - Conduct data collection and analysis for final assessment of discrimination technologies candidates planned for DIHD Mid-term. - Down select development ready technologies for the DIHD Mid-term phase content. - Complete BMDS functional and performance requirements for DIHD Mid-term capability. FY 2015 increase due to ramp-up of high priority effort to improve BMD System Discrimination for Homeland Defense.			
FY 2016 Plans: FY 2016 decrease reflects completion of System-level Near-Term DIHD work. - Complete integration phase for Near-Term DIHD ground testing via GTI-06. - Monitor Near-term DIHD ground testing via GTI-06 and GTD-06 and analyze test results. - Assess Near-Term DIHD capability readiness for fielding.			

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Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Support Element Mid-Term DIHD requirements definition in support of Element design refinement. - Complete system testing environment Objective Simulation Framework updates for Mid-term DIHD capabilities. - Assist in development of data collection requirements for of Mid-Term DIHD capability flight tests. - Define & develop Far-term DIHD 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 DIHD technology application to the Far-term DIHD threat.			
Title: Integrated Air and Missile Defense (IAMD)	-	14.100	15.200
Articles:	-	-	-
Description: The Integrated Air and Missile Defense (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 build capability increments, and configuration control across the joint systems. This work will provide improved performance such as improved air picture to enable engagement coordination decision making, increase battlespace, and improve track continuity. This effort was previously funded by the Air Force and transitioned to MDA in FY 2015. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** - The Integrated Air and Missile Defense (IAMD) effort was previously funded by the Air Force and transitioned to MDA in FY 2015. - Lead IAMD engineering and integration efforts, including interface definition and control and technical requirements allocation across the Joint IAMD Service systems. - Using Modeling and Simulations, analyze technical options under operationally stressing threat conditions to improve air picture of sufficient quality to support coordinated decision making across a joint warfighting environment. - Assess cost, schedule and risk impacts of implementing the options on selected air defense assets across the joint services. - Downselect to the preferred approach for a first increment of capability that will provide the Warfighter an improved air picture for coordinated decision making. - Continue to develop the IAMD joint system architecture to maintain consistency with JIAMDO operational architecture. - With JIAMDO, complete operational benefit assessment using Virtual Warfare Center (VWC). ***FY 2016 Plans:*** FY 2016 increase supports IAMD system requirements review.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Maintain and deliver updates to an IAMD system of systems level requirement specification documenting the technical requirements for allocation to the affected air defense programs of record. - Conduct Joint IAMD system requirements review with affected service systems. - 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.			
Accomplishments/Planned Programs Subtotals	123.434	138.633	141.651

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 0603881C: *Ballistic Missile Defense Terminal Defense Segment*	251.899	163.892	228.021	-	228.021	230.306	257.014	218.533	247.707	Continuing	Continuing
• 0603882C: *Ballistic Missile Defense Midcourse Defense Segment*	1,064.445	873.923	1,284.891	-	1,284.891	936.425	803.392	903.539	912.890	Continuing	Continuing
• 0603892C: *AEGIS BMD*	885.704	764.224	843.355	-	843.355	762.740	748.354	564.827	579.585	Continuing	Continuing
• 0603914C: *Ballistic Missile Defense Test*	342.695	366.302	274.323	-	274.323	298.390	345.333	330.404	350.747	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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD24 / *System Engineering & Integration*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Remarks

N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Future Concepts and Planning - Future Concepts - Architecture CSS	C/CPFF	Sparta : AL	0.000	1.249		2.733	Oct 2014	2.994	Oct 2015	-		2.994	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - Architecture Support	Various	Various : VA, AL	0.000	1.590		1.505	Oct 2014	1.513	Oct 2015	-		1.513	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - CSS	C/CPAF	CSC : AL	15.958	3.679		0.840	Oct 2014	0.856	Oct 2015	-		0.856	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 1	MIPR	SNL : CA	1.481	0.290		0.370	Oct 2014	0.377	Oct 2015	-		0.377	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 3	MIPR	MIT/LL : MA	0.000	0.328		1.110	Oct 2014	1.132	Oct 2015	-		1.132	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 4	MIPR	JHU/LL : VA	1.400	1.740		0.740	Oct 2014	0.755	Oct 2015	-		0.755	Continuing	Continuing	Continuing
Future Concepts and Planning - Future	MIPR	MITRE : VA	0.700	0.394		0.370	Oct 2014	0.387	Oct 2015	-		0.387	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD24 / *System Engineering & Integration*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total 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	0.833	0.333		0.444	Oct 2014	0.453	Oct 2015	-		0.453	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - Industry	C/CPAF	Boeing : AL	20.112	3.693		2.072	Oct 2014	2.114	Oct 2015	-		2.114	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - OGA	MIPR	AMRDEC : AL	1.800	-		-		-		-		-	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - Support	Allot	MDA : VA / AL	1.972	1.136		2.267	Oct 2014	2.704	Oct 2015	-		2.704	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Lethality Spt - FFRDC/ UARC 4	MIPR	SNL : CA	0.000	0.350		0.350	Oct 2014	0.357	Oct 2015	-		0.357	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Lethality Spt - CSS	C/CPAF	Corvid : NC	0.000	-		0.715	Oct 2014	0.744	Nov 2015	-		0.744	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - CSS 1	C/CPFF	CSC : AL	22.663	6.019		3.730	Oct 2014	3.509	Oct 2015	-		3.509	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - CSS 3	C/CPFF	MEI : AL	0.000	0.275		0.275	Oct 2014	0.281	Oct 2015	-		0.281	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - FFRDC/UARC 1	MIPR	MIT/LL : MA	2.681	-		-		-		-		-	-	2.681	-
Requirements and Design - Reqts & Design - FFRDC/UARC 2	MIPR	LLNL : CA	0.505	0.095		0.384	Oct 2014	-		-		-	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - FFRDC/UARC 3	MIPR	MITRE : VA	0.000	-		-		0.555	Oct 2015	-		0.555	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD24 / *System Engineering & Integration*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Requirements and Design - Reqts & Design - HAENS Spt	Various	Various : Various	0.000	0.279		0.320	Oct 2014	0.460	Oct 2015	-		0.460	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Industry	C/CPAF	Boeing : AL	59.841	12.487		11.548	Oct 2014	11.128	Oct 2015	-		11.128	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - MDA	Various	MDA : AL, VA	9.931	8.537		9.016	Oct 2014	9.219	Nov 2015	-		9.219	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - OGA	MIPR	AMRDEC : AL	1.950	-		1.016	Oct 2014	2.138	Oct 2015	-		2.138	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	-		-		0.793	Oct 2015	-		0.793	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - CSS	C/CPFF	CSC : AL	19.593	3.317		4.500	Oct 2014	4.590	Oct 2015	-		4.590	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - CSS 2	C/CPFF	SAIC : VA, AL	1.203	4.040		4.040	Oct 2014	4.121	Oct 2015	-		4.121	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - FFRDC/ UARC 2	MIPR	MITRE : VA	5.611	-		-		-		-		-	-	5.611	-
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - Industry	C/CPAF	Boeing : AL	62.467	-		-		-		-		-	-	62.467	-
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - MDA	Various	MDA : VA, AL	1.193	1.491		0.311	Oct 2014	-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD24 / *System Engineering & Integration*	

Support ($ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Anti-Tamper & Engineering Manufacturing Readiness Level Development - AT & EMRL - Anti-Tamper Support	MIPR	NSWC Crane : IN	5.154	0.700		0.205	Oct 2014	0.209	Nov 2015	-		0.209	Continuing	Continuing	Continuing
Anti-Tamper & Engineering Manufacturing Readiness Level Development - AT & EMRL - CSS 2	C/CPAF	CSC - MiDAESS : AL	1.551	0.450		0.213	Oct 2014	-		-		-	-	2.214	-
Anti-Tamper & Engineering Manufacturing Readiness Level Development - AT & EMRL - CSS/Travel	C/CPFF	DRC, Cobham : CA	2.890	-		-		-		-		-	-	2.890	-
Anti-Tamper & Engineering Manufacturing Readiness Level Development - AT & EMRL - Commonality and Standards	C/CPFF	DRAPER : MA	6.265	-		-		-		-		-	-	6.265	-
Anti-Tamper & Engineering Manufacturing Readiness Level Development - AT & EMRL - MDA	Allot	MDA : AL, VA	3.260	3.749		4.957	Oct 2014	4.859	Oct 2015	-		4.859	Continuing	Continuing	Continuing
Anti-Tamper & Engineering Manufacturing Readiness Level Development - OGA Support	MIPR	AMRDEC : AL	0.000	-		0.308	Oct 2014	0.314	Nov 2015	-		0.314	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Independ Tech Assess - FFRDC/UARC 4	MIPR	GTRI : GA	7.121	-		-		-		-		-	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - CSS	C/CPFF	CSC - MiDAESS : AL	1.000	1.809		1.396	Oct 2014	1.424	Nov 2015	-		1.424	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC 1	MIPR	Aerospace : CA	12.151	1.215		1.500	Oct 2014	1.495	Oct 2015	-		1.495	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD24 / *System Engineering & Integration*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC 2	MIPR	JHU APL : VA	6.522	1.464		1.480	Oct 2014	0.894	Oct 2015	-		0.894	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC 6	MIPR	MIT/LL : MA	13.896	2.033		1.875	Oct 2014	1.860	Oct 2015	-		1.860	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC 7	MIPR	MITRE : VA	9.983	1.778		2.200	Oct 2014	2.225	Oct 2015	-		2.225	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	-		-		0.993	Oct 2015	-		0.993	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - MDA	Allot	MDA : VA, AL	2.747	2.969		0.525	Oct 2014	0.547	Oct 2015	-		0.547	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - OGA	MIPR	AMRDEC : AL	1.441	2.680		2.085	Oct 2014	2.130	Oct 2015	-		2.130	Continuing	Continuing	Continuing
System-Level Verification and Assessment - V&A Industry Support	C/CPFF	Boeing : AL	0.000	3.237		3.065	Oct 2014	3.118	Oct 2015	-		3.118	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 1	MIPR	Aerospace : CA	6.436	2.116		1.095	Oct 2014	1.438	Oct 2015	-		1.438	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 2	MIPR	MIT/LL : MA	3.376	1.450		1.114	Oct 2014	1.453	Oct 2015	-		1.453	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 3	FFRDC	MITRE : VA	2.870	1.343		1.099	Oct 2014	1.366	Oct 2015	-		1.366	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 4	FFRDC	JHU/APL : VA	3.305	1.300		1.055	Oct 2014	1.077	Oct 2015	-		1.077	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 5	FFRDC	SDL : MA	0.292	-		-		-		-		-	-	0.292	-
Knowledge Centers - KC - FFRDC/UARC 7	MIPR	GTRI : GA	2.839	1.100		-		-		-		-	-	3.939	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD24 / *System Engineering & Integration*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Knowledge Centers - KC - FFRDC/UARC 8	MIPR	JPL : CA	1.516	-		-		-		-		-	-	1.516	-
Knowledge Centers - KC - FFRDC/UARC 9	MIPR	ORNL : TN	1.179	-		-		-		-		-	-	1.179	-
Knowledge Centers - KC - ICT	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	0.000	-		-		0.900	Oct 2015	-		0.900	Continuing	Continuing	Continuing
Knowledge Centers - KC - MDA	Various	MDA : AL, VA	6.602	5.694		7.253	Oct 2014	6.643	Oct 2015	-		6.643	Continuing	Continuing	Continuing
Knowledge Centers - KC - OGA	MIPR	AMRDEC : AL	0.215	-		-		-		-		-	-	0.215	-
Knowledge Centers - KC - Other	MIPR	Northrop Grumman : VA	0.306	-		-		-		-		-	-	0.306	-
Knowledge Centers - KC - Various	MIPR	Various : Various	0.000	1.232		1.653	Oct 2014	1.575	Oct 2015	-		1.575	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - Analysis	Various	MDA : VA, AL	0.275	3.451		5.144	Oct 2014	5.238	Oct 2015	-		5.238	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - Analysis Spt	Various	Various : Various	0.000	1.129		0.978	Oct 2014	0.864	Nov 2015	-		0.864	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - CSS	C/CPFF	MEI : AL	4.146	0.275		-		-		-		-	-	4.421	-
Risk Management - Risk Mgt - FFRDC/UARC	MIPR	MITRE : VA	2.460	0.625		0.579	Oct 2014	0.377	Oct 2015	-		0.377	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - ICT	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	0.000	-		-		0.793	Oct 2015	-		0.793	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - Other 1	MIPR	DAU : VA	0.165	-		-		-		-		-	-	0.165	-
Manufacturing and Producibility - Core Standards	C/CPFF	Boeing : AL	0.000	-		1.070	Oct 2014	1.091	Nov 2015	-		1.091	Continuing	Continuing	Continuing
Manufacturing and Producibility - Mfg and Producibility	Various	MDA : AL	0.000	0.632		0.894	Nov 2014	0.645	Oct 2015	-		0.645	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD24 / *System Engineering & Integration*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Manufacturing and Producibility - Mfg and Producibility - CSS	C/CPFF	CSC : AL	0.000	0.351		-		-		-		-	-	0.351	-
Manufacturing and Producibility - Mfg and Producibility - ICT	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	0.000	-		-		0.500	Oct 2015	-		0.500	Continuing	Continuing	Continuing
Manufacturing and Producibility - Mfg and Producibility - OGA Support	MIPR	AMRDEC : AL	0.000	1.517		2.162	Nov 2014	2.205	Nov 2015	-		2.205	Continuing	Continuing	Continuing
Discrimination - Aegis BMD Algorithm Development, Modeling & Simulation, Performance Analysis (FFRDC)	MIPR	MIT / LL : MA	0.000	0.650		-		-		-		-	Continuing	Continuing	Continuing
Discrimination - Aegis BMD Algorithm Development, Modeling & Simulation, Performance Analysis (Prime)	SS/CPFF	Lockheed Martin : NJ	0.000	2.415		-		-		-		-	Continuing	Continuing	Continuing
Discrimination - Aegis BMD Algorithm Development, Modeling & Simulation, Performance Analysis (UARC)	SS/CPFF	JHU / APL : MD	0.000	0.735		-		-		-		-	Continuing	Continuing	Continuing
Discrimination - DIHD - BMD 4.0.3 Dev.	MIPR	Various : MD, VA, CA	0.000	0.663		-		-		-		-	Continuing	Continuing	Continuing
Discrimination - DIHD - BMD 4.0.3 Dev. (PRIME)	SS/CPFF	Lockheed Martin : NJ	0.000	2.996		-		-		-		-	Continuing	Continuing	Continuing
Discrimination - Discrimination - CSS	C/CPFF	CSC : AL	0.000	2.600		8.731	Oct 2014	4.860	Nov 2015	-		4.860	Continuing	Continuing	Continuing
Discrimination - Discrimination - Industry	C/CPAF	Boeing : AL, VA	0.000	-		7.004	Oct 2014	11.005	Nov 2015	-		11.005	Continuing	Continuing	Continuing
Discrimination - Discrimination - Support	Various	MDA : AL, VA	0.000	-		10.046	Oct 2014	9.741	Nov 2015	-		9.741	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD24 / *System Engineering & Integration*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Discrimination - Discrimination - Various	Various	Various : AL, VA	0.000	-		6.191	Oct 2014	3.432	Nov 2015	-		3.432	Continuing	Continuing	Continuing
Discrimination - Discrimination Improvement Homeland Defense (DIHD) Engineering	C/CPFF	Boeing : AL	0.000	7.412		-		-		-		-	Continuing	Continuing	Continuing
Discrimination - OGA Discrimination Improvement Homeland Defense (DIHD)	MIPR	SED : AL	0.000	0.690		-		-		-		-	Continuing	Continuing	Continuing
Discrimination - Prime Discrimination Improvement Homeland Defense (DIHD)	C/CPFF	Boeing : AL, AZ	0.000	9.652		-		-		-		-	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - FFRDC	Various	Various : AL, VA, MD	0.000	-		1.410	Nov 2014	1.510	Nov 2015	-		1.510	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - Support	Various	MiDAESS : AL, VA, CO	0.000	-		2.115	Nov 2014	2.282	Nov 2015	-		2.282	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - Various	MIPR	DoD Activities : Various	0.000	-		10.575	Nov 2014	11.408	Nov 2015	-		11.408	Continuing	Continuing	Continuing
		Subtotal	341.857	123.434		138.633		141.651		-		141.651	-	-	-

Remarks

N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD24 / *System Engineering & Integration*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Remarks

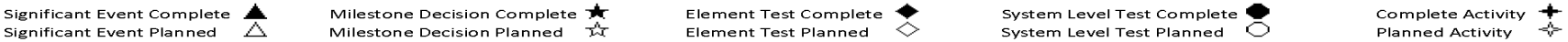
N/A

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	341.857	123.434		138.633		141.651		-		141.651	-	-	-

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.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*



	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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 Description Document (BMD SDD) - FY 2014	▲																											
Adversary Data Package (ADP) - FY 2014	▲																											
Aegis BMD 5.1 Preliminary Design Review (PDR)	▲																											
Element Design Reviews - FY 2014		▲																										
System Engineering Plan (SEP) Update - FY 2014		▲																										
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2014		▲																										
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2014			▲																									
EPAA Phase 2 Assessment Requirements Review - FY 2014				▲																								
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2014				▲																								
Provide Independent Assessments to MDA - FY 2014				▲																								
System/Subsystem Requirements Review - FY 2015					△																							
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY 2015					▲																							
Adversary Data Package (ADP) - FY 2015					△																							
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2015					△																							
Ballistic Missile Defense System Specification (BMD SS) - FY 2015						△																						
Element Design Reviews - FY 2015						△																						
Ballistic Missile Defense System Engineering Review - FY 2015							△																					
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2015							△																					
Provide Independent Assessments to MDA - FY 2015								△																				
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2015								△																				

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

Significant Event Complete ▲ Significant Event Planned △ | Milestone Decision Complete ★ Milestone Decision Planned ☆ | Element Test Complete ◆ Element Test Planned ◇ | System Level Test Complete ⬢ System Level Test Planned ⬭ | Complete Activity ✦ Planned Activity ✧

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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 Master Integration Plan (MIP) - FY 2015								△																				
Adversary Data Package (ADP) - FY 2016									△																			
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2016									△																			
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2016									△																			
Element Design Reviews - FY 2016										△																		
System Engineering Plan (SEP) Update - FY 2016										△																		
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												△																
Adversary Data Package (ADP) - FY 2017													△															
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															△													
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2017																△												

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

Significant Event Complete ▲ Significant Event Planned △ | Milestone Decision Complete ★ Milestone Decision Planned ☆ | Element Test Complete ◆ Element Test Planned ◇ | System Level Test Complete ⬢ System Level Test Planned ⬭ | Complete Activity ✦ Planned Activity ✧

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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 Independent Assessments to MDA - FY 2017																△												
Update Master Integration Plan (MIP) - FY 2017																△												
Adversary Data Package (ADP) - FY 2018																	△											
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																		△										
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																					△							
Adversary Data Package (ADP) - 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																							△					

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

Significant Event Complete ▲ Significant Event Planned △ | Milestone Decision Complete ★ Milestone Decision Planned ☆ | Element Test Complete ◆ Element Test Planned ◇ | System Level Test Complete ⬢ System Level Test Planned ⬭ | Complete Activity ✦ Planned Activity ✧

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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 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																								△				
Adversary Data Package (ADP) - FY 2020																									△			
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2020																									△			
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																												△

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2014	1	2014	1	2014
Adversary Data Package (ADP) - FY 2014	1	2014	1	2014
Aegis BMD 5.1 Preliminary Design Review (PDR)	1	2014	1	2014
Element Design Reviews - FY 2014	2	2014	2	2014
System Engineering Plan (SEP) Update - FY 2014	2	2014	2	2014
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2014	2	2014	2	2014
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2014	3	2014	3	2014
EPAA Phase 2 Assessment Requirements Review - FY 2014	4	2014	4	2014
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2014	4	2014	4	2014
Provide Independent Assessments to MDA - FY 2014	4	2014	4	2014
System/Subsystem Requirements Review - FY 2015	1	2015	1	2015
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY 2015	1	2015	1	2015
Adversary Data Package (ADP) - FY 2015	1	2015	1	2015
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2015	1	2015	1	2015
Ballistic Missile Defense System Specification (BMD SS) - FY 2015	2	2015	2	2015
Element Design Reviews - FY 2015	2	2015	2	2015
Ballistic Missile Defense System Engineering Review - FY 2015	3	2015	3	2015
Update to Integrated Master Assessment Plan (IMAP) - 3Q 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 Master Integration Plan (MIP) - FY 2015	4	2015	4	2015
Adversary Data Package (ADP) - FY 2016	1	2016	1	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2016	1	2016	1	2016
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2016	1	2016	1	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 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
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
Adversary Data Package (ADP) - FY 2017	1	2017	1	2017
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
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
Adversary Data Package (ADP) - FY 2018	1	2018	1	2018
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

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
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
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
Adversary Data Package (ADP) - 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 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
Adversary Data Package (ADP) - FY 2020	1	2020	1	2020
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

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD24 / *System Engineering & Integration*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
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

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MT23 / *Enabling - Test*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MT23: *Enabling - Test*	29.288	30.298	18.961	19.576	-	19.576	23.709	27.677	26.632	24.968	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

FY 2016 increase keeps pace with projected FY 2016-FY 2020 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 European Phased Adaptive Approach (EPAA) Phase 3 Technical Capability Declaration.

A. Mission Description and Budget Item Justification

In the Enabling Program's Test project, Systems Engineering and Integration drives Ballistic Missile Defense System (BMDS) planning, execution, and post-test assessment, providing critical data to prove that missile defense works as designed. Modeling and Simulation (M&S) provides the tools and framework required to prepare for and execute ground and flight tests and perform post-test reconstructions.

System Engineering and Integration (SE&I) Major Program Goals for the Integrated Master Test Plan (IMTP):
- Develop BMDS Performance Assessment parameters
- Identify the Critical Engagement Conditions and data required to develop the test campaigns that will demonstrate regional defense performance, and verify and assess the capability of each Phased Adaptive Approach (PAA)
- Define the test objectives and assessment criteria via the Integrated Master Assessment Plan and Flight Test Strategic Plan for all System level test events to anchor M&S and address data collection requirements.
- Develop, manage and use BMDS level Modeling and Simulation (M&S) to verify BMDS performance in system operational regions outside the live fire testing regions.

During test integration and model validation, 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, in order to collect the required model validation data. 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 leads test failure review boards, identifies shortfalls in data collection, and reallocates objectives to future test events as needed until all identified model validation data is collected. Reliability, Availability and Maintainability data collected through the Joint Reliability and Maintainability Evaluation Team (JRMET) and quarterly data scoring boards with the Elements is available to Warfighter commanders and increases the confidence levels in the predicted performance of the BMDS. SE&I documents abnormal system behavior observed during System-level tests and alerts MDA to issues with test article reliability. The Failure Reporting, Analysis, and Corrective Action System (FRACAS) provides a framework to investigate System test failures and anomalies and to identify solutions that will ultimately improve BMDS performance and reliability.

SE&I identifies and coordinates test objectives and ensures BMDS requirements are being met by the BMD System under test. Systems Engineering plays a key role in Ballistic Missile Defense 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 Integrated Master Test Plan (IMTP). The CECs and EMEs include key test points allocated to test events to ensure

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MT23 / *Enabling - Test*

that the design of the BMDS test includes data collection to show proper system operation; they also provide validation, verification, and assessment data for the digital models and simulations used to predict BMDS performance. These models and simulations, along with the rigorous test and verification process, will be used to demonstrate BMDS performance in areas where no live-fire-testing is performed and will directly support fielding decisions and BMDS deployed operations.

SE&I supports System Pre-Mission predictions for system level flight tests using the test framework set up with the BMDS configuration for a particular flight test. This provides confidence readiness for Flight Test execution by predicting BMDS performance and exercising element interfaces. This work also ensures the flight test will collect the required data and the data management plan will support System and Element Post-Flight Reconstruction (SPFR) objectives. System Post-Flight Reconstruction uses a hardware-in-the-loop (HWIL) and/or Digital Modeling and Simulation Environment to replicate the day of flight for the BMDS configuration, including the actual environmental conditions and target dynamics observed in the test. The results of this process increase confidence in the models and simulations by anchoring the results to the real world event, with emphasis on the CECs and EMEs. System and Element Post-Flight Reconstructions are used for validation (anchoring) of BMDS and Element models and simulations.

The distinct capabilities of MDA`s Modeling and Simulation (M&S) systems and products provide the BMDS, the Warfighter, and the Operational Test Agency (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. Future M&S development activities will focus on the model and simulation frameworks, BMDS Element models, and core truth modeling (e.g., threat, phenomenology, lethality, and environment). The success of the missile defense program is enabled by quality M&S systems and products that help prove BMDS technologies work. In particular, MDA M&S System and Product testing is based on an integrated, comprehensive, and phased test program as outlined in MDA`s IMTP. Within the construct of the IMTP, MDA 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 2014	FY 2015	FY 2016
Title: Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I	10.728	-	-
Articles:	-	-	-
Description: The SE&I IMTP effort develops Ballistic Missile Defense System (BMDS) test objectives and scenarios, and participates in test planning, execution, and post-test assessment.			
FY 2014 Accomplishments: - Provided engineering support for planning, execution, and analysis of the test events listed in the Integrated Master Test Plan (IMTP) - Designed test architecture, defines target requirements, and generate appropriate scenarios for ground and flight tests. - Defined test objectives and assessment criteria for all System level test events to anchor Modeling and Simulation (M&S) and address data collection requirements-Collected BMDS reliability and maintainability data and document requirements for successful completion of test events.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MT23 / *Enabling - Test*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
-Provided pre- and post-test support for the Failure Reporting, Analysis, and Corrective Action System (FRACAS), which investigates BMDS test failures and anomalies and identifies solutions that enhance system performance and reliability. -Defined, executed, and documented results of required performance assessments supporting incremental capability deliveries. -Updated the Integrated Master Assessment Plan (IMAP) semi-annually to address changes in planned delivery of Ballistic Missile Defense System content as reflected in the Ballistic Missile Defense System Description Document (BMD SDD), the Ballistic Missile Defense System Specification (BMD SS), Master Integration Plan, and detailed design and development documentation. Update also reflects changes to BMDS deployment and utilization. ***FY 2015 Plans:*** The FY 2015 plans for this activity are realigned within new MT23 Accomplishment/Planned Program: Engineering and Analysis. ***FY 2016 Plans:*** N/A			
Title: Modeling/Simulation (M/S) Verification, Validation and Accreditation (VV/A) and Test Operations	19.570	-	-
Articles:	-	-	-
Description: The M&S Integrated Master Test Plan (IMTP) effort integrates Single Stimulation Framework (SSF) and Objective Simulation Framework (OSF) products with MDA and Non-MDA element models, core truth components and Hardware in the Loop (HWIL) assets to form Ballistic Missile Defense System (BMDS) architectures for the execution of IMTP events. ***FY 2014 Accomplishments:*** -Integrated, tested, functionally qualified, and delivered end-to-end BMDS simulations supporting various uses. -Developed and established Hardware-in-the-loop (HWIL) M&S Integration Test Cases for Ground and Flight Tests (Pre-Post Mission). -Conducted M&S HWIL Integration Bench Mark testing for Ground and Flight Tests (Pre-Post Mission), by integrating the BMDS HWIL M&S framework with MDA and non-MDA Elements into the test event BMDS architecture. -Developed and presented M&S objectives, event requirements, accreditation status and strategic VV&A plans as part of MDA BMDS Integrated Master Test Plan (IMTP) development. FY 2014 activities are consistent with reductions defined in the IMTP. ***FY 2015 Plans:*** The FY 2015 plans for this activity are realigned within new MT23 Accomplishment/Planned Program: Engineering and Analysis. ***FY 2016 Plans:*** N/A			
Title: Engineering and Analysis	-	18.961	19.576

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MT23 / *Enabling - Test*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
Articles:	-	-	-

Description: Beginning in FY 2015, the Engineering and Analysis effort provides engineering support for planning and execution of BMDS ground and flight test events, including test architectures, objectives, and assessment criteria, and modeling and simulation pre- and post-test analysis support.

FY 2014 Accomplishments:
FY 2014 accomplishments are provided in the above sections. Beginning in FY 2015, these tasks were consolidated into this Engineering & Analysis activity.

FY 2015 Plans:
- Transferred from other accomplishments beginning in FY 2015.

Provide engineering support for planning, execution, and analysis of the test events listed in the Integrated Master Test Plan (IMTP):
- Design test architecture, defines target requirements, and generate appropriate scenarios for ground and flight tests.
- Define test objectives and assessment criteria for all System level test events to anchor Modeling and Simulation (M&S) and address data collection requirements.
- Allocate and track Critical Engagement Condition (CEC) and Empirical Measurement Events (EME) data requirements and sufficiency.
- Perform System-level and interoperability analysis.
- Participate in major test reviews.
- Generate BMDS test observations and coordinate associated BMDS Discrepancy Reports (BDR) within the Failure Reporting, Analysis, and Corrective Action System (FRACAS)
- Produce the threat data required to enable BMDS ground tests, flight tests and performance assessment.
- Utilize models and simulations (M&S) for pre-test assessment and post-test review, as well as M&S updates.
- Provide Systems Engineering and Integration (SE&I) test configuration management; risk assessment; and anomaly/deficiency review, assessment and closure to support data gathering for BMDS hardware/software reliability improvements.
- Analyze test results to identify shortfalls so that objectives can be reassigned to future events to provide required verification and model validation data.
- Develop and document long-range BMDS IMTP planning and integration strategies related to overarching BMDS analysis product integration.
- Develop and provide 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.
- Populate the MARS database with data from the most recently completed tests to support as-built analysis and capability assessments.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MT23 / *Enabling - Test*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Provide 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). - Develop and provide infrastructure, software, and associated MDA/IA compliance for the RApid Scenario Prototype (RASP) capability. - Develop and optimize candidate ground test scenarios and produce the associated scenario data packages. - Develop and establish hardware-in-the-loop (HWIL) M&S integration test cases for ground and flight tests (pre-post mission). - Provide modeling and technical analysis support during Combatant Command (COCOM) wargames and exercises. - Develop, deliver, and present the Quick Look Brief (QLB), Executive Quick Look Brief (EQLB), Mission Data Review (MDR), and Executive MDR (EMDR). - Develop and establish Hardware-in-the-loop (HWIL) M&S Integration Test Cases for flight and ground tests. - Conduct M&S HWIL Integration Bench Mark testing for ground tests by integrating the BMDS HWIL M&S framework with MDA and non-MDA Elements into the test event BMDS architecture. - Integrate, test, functionally qualify, and deliver end-to-end BMDS simulations supporting ground test missions.			
FY 2016 Plans: FY 2016 increase keeps pace with projected FY 2016-FY 2020 IMTP events, and reflects increase in pre- and post-mission System-level analyses, M&S integration, and supporting validation and assessment activities. Provide engineering support for planning, execution, and analysis of the test events listed in the Integrated Master Test Plan (IMTP): - Design test architecture, define target requirements, and generate appropriate scenarios for ground and flight tests. - 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&S) and address data collection requirements. - Perform System-level and interoperability analysis. - Participate in major test reviews, analysis team meetings, and mission planning events. - Generate BMDS test observations and coordinate associated BMDS Discrepancy Reports (BDR) within the Failure Reporting, Analysis, and Corrective Action System (FRACAS). - Produce the threat data required to enable BMDS ground tests, flight tests and performance assessment. - Utilize models and simulations (M&S) for pre-test assessment and post-test review, as well as M&S updates. - Provide Systems Engineering and Integration (SE&I) test configuration management; risk assessment; and anomaly/deficiency review, assessment and closure to support data gathering for BMDS hardware/software reliability improvements. - Analyze test results to identify shortfalls so that objectives can be reassigned to future events to provide required verification and model validation data. - Coordinate with BMDS Operational Test Agency (OTA) to address OTA issue sheets allocated to test events.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MT23 / *Enabling - Test*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Develop and document long-range BMDS IMTP planning and integration strategies related to overarching BMDS analysis product integration. - 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. - Populate the MARS database with data from the most recently completed tests to support as-built analysis and capability assessments. - 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). - Develop and provide infrastructure, software, and associated MDA/IA compliance for the RApid Scenario Prototype (RASP) capability. - Develop and optimize candidate ground test scenarios and produce the associated scenario data packages. - Develop and establish hardware-in-the-loop (HWIL) M&S integration test cases for ground and flight tests (pre-post mission). - Provide modeling and technical analysis support during Combatant Command (COCOM) wargames and exercises. - Integrate non-MDA element models and simulations for participation in IMTP events. - Develop, deliver, and present the Quick Look Brief (QLB), Mission Data Review (MDR), and Executive MDR (EMDR). - Conduct M&S HWIL Integration Benchmark testing for ground tests by integrating the BMDS HWIL M&S framework with MDA and non-MDA Elements into the test event BMDS architecture. - Integrate, test, functionally qualify, and deliver end-to-end BMDS simulations supporting ground test missions.			
Accomplishments/Planned Programs Subtotals	30.298	18.961	19.576

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 0603881C: *Ballistic Missile Defense Terminal Defense Segment*	251.899	163.892	228.021	-	228.021	230.306	257.014	218.533	247.707	Continuing	Continuing
• 0603882C: *Ballistic Missile Defense Midcourse Defense Segment*	1,064.445	873.923	1,284.891	-	1,284.891	936.425	803.392	903.539	912.890	Continuing	Continuing
• 0603892C: *AEGIS BMD*	885.704	764.224	843.355	-	843.355	762.740	748.354	564.827	579.585	Continuing	Continuing
• 0603914C: *Ballistic Missile Defense Test*	342.695	366.302	274.323	-	274.323	298.390	345.333	330.404	350.747	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MT23 / *Enabling - Test*

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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MT23 / *Enabling - Test*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Remarks

N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I - IMTP SE&I - CSS	C/CPFF	Various - CSS : AL	0.654	6.013		-		-		-		-	-	6.667	-
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I - IMTP SE&I - FFRDC/ UARC 2	MIPR	GTRI : AL, VA	0.555	1.404		-		-		-		-	-	1.959	-
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I - IMTP SE&I - FFRDC/ UARC 3	MIPR	SNL : CA	0.110	-		-		-		-		-	-	0.110	-
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I - IMTP SE&I - Industry	C/CPAF	Boeing : AL	8.524	3.311		-		-		-		-	-	11.835	-
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I - IMTP SE&I - OGA	MIPR	AMRDEC : AL	4.891	-		-		-		-		-	-	4.891	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MT23 / *Enabling - Test*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I - IMTP SE&I - OGA 2	MIPR	NSWC : VA	0.304	-		-		-		-		-	-	0.304	-
Modeling/Simulation (M/S) Verification, Validation and Accreditation (VV/A) and Test Operations - IMTP M&S - Event operations & Support	C/CPAF	Northrop Grumman : CO	0.000	2.355		-		-		-		-	-	2.355	-
Modeling/Simulation (M/S) Verification, Validation and Accreditation (VV/A) and Test Operations - IMTP M&S - M&S Simulations	C/CPAF	Northrop Grumman : CO	2.394	2.655		-		-		-		-	-	5.049	-
Modeling/Simulation (M/S) Verification, Validation and Accreditation (VV/A) and Test Operations - IMTP M&S - OGA Support	MIPR	AMRDEC : AL	8.510	8.529		-		-		-		-	-	17.039	-
Modeling/Simulation (M/S) Verification, Validation and Accreditation (VV/A) and Test Operations - IMTP M&S - Performance Assessment VV&A	MIPR	AMRDEC : AL, CO	3.346	6.031		-		-		-		-	-	9.377	-
Engineering and Analysis - Engineering & Analysis - CSS Support	C/CPFF	CSC : AL	0.000	-		1.920	Oct 2014	1.276	Oct 2015	-		1.276	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - Industry	C/CPAF	Boeing : VA, AL	0.000	-		3.509	Oct 2014	2.243	Oct 2015	-		2.243	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - OGA Support	MIPR	AMRDEC : AL	0.000	-		10.120	Oct 2014	9.758	Oct 2015	-		9.758	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MT23 / *Enabling - Test*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Analysis - Engineering & Analysis - Technical Support	C/CPAF	Northrop Grumman : VA, AL	0.000	-		2.807	Oct 2014	5.670	Oct 2015	-		5.670	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - Test Engineering Support	Various	Various : AL, CO, VA	0.000	-		0.605	Oct 2014	0.629	Nov 2015	-		0.629	Continuing	Continuing	Continuing
		Subtotal	29.288	30.298		18.961		19.576		-		19.576	-	-	-

Remarks

Increase in Technical Support and Test Engineering support reflects IMTP re-planning and resultant consolidation of some test engineering and analysis functions from MT09 (Aegis PE 0603892C) and MT04 (BMDS Test PE 0603914C).

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Remarks

N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Remarks

N/A

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	29.288	30.298		18.961		19.576		-		19.576	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MT23 / *Enabling - Test*	

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MT23 / *Enabling - Test*

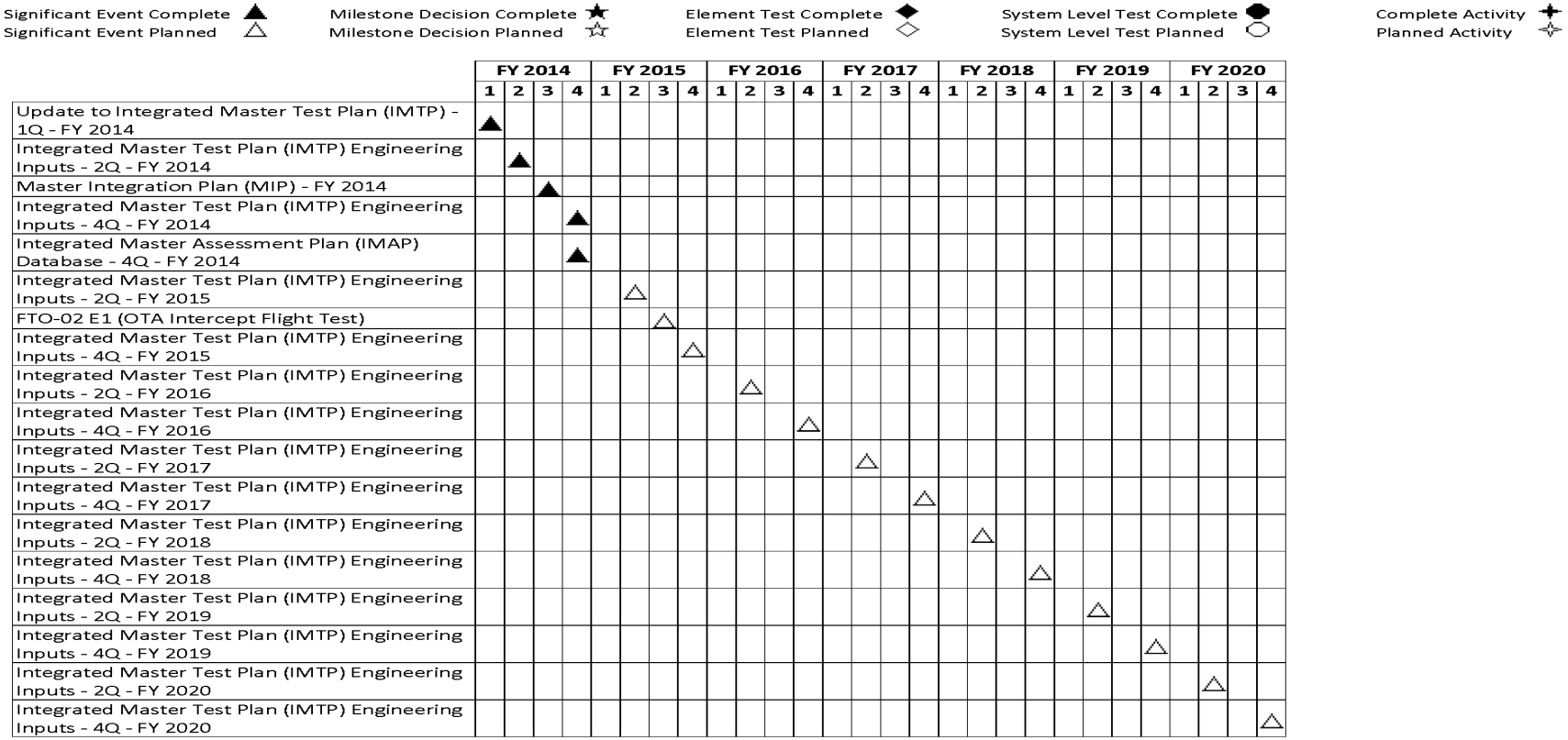


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MT23 / *Enabling - Test*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Update to Integrated Master Test Plan (IMTP) - 1Q - FY 2014	1	2014	1	2014
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2014	2	2014	2	2014
Master Integration Plan (MIP) - FY 2014	3	2014	3	2014
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2014	4	2014	4	2014
Integrated Master Assessment Plan (IMAP) Database - 4Q - FY 2014	4	2014	4	2014
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2015	2	2015	2	2015
FTO-02 E1 (OTA Intercept Flight Test)	3	2015	3	2015
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2015	4	2015	4	2015
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 - 2Q - FY 2017	2	2017	2	2017
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2017	4	2017	4	2017
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2018	2	2018	2	2018
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2018	4	2018	4	2018
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2019	2	2019	2	2019
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2019	4	2019	4	2019
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2020	2	2020	2	2020
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2020	4	2020	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD28 / *Intelligence & Security*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MD28: *Intelligence & Security*	62.314	37.969	37.131	40.263	-	40.263	45.182	45.773	46.108	48.378	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.
Funding for Threat Systems Engineering was initially programmed in Project MD24 for FY 2014, but was executed out of project MD28.
FY 2016 increase reflects implementation of Presidentially-mandated Insider Threat Analysis capability and realignment of Special Projects staff within the Intelligence and Security group.

A. Mission Description and Budget Item Justification

Major program goals for the Intelligence and Security team are:
-- Ensure the Intelligence Community understands and fulfills the Missile Defense Agency's (MDA's) current and future prioritized intelligence requirements in an accurate and timely manner; advocate Ballistic Missile Defense System (BMDS) test support collection requirements with the Intelligence Community; and ensure that MDA`s intelligence needs and finished intelligence requirements are understood while ensuring the Intelligence Community is involved in technical interchange meetings.
-- Continue the federated approach to supporting MDA by leveraging available National and Department of Defense (DoD) Counterintelligence resources. Ensure counterintelligence products and services are fully integrated into all Research, Development, Test & Evaluation (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 from criminal, terrorist and Foreign Intelligence and Security Service targeting/threats.
-- Consistently and comprehensively define cybersecurity systems engineering requirements for Continental United States (CONUS) and non-CONUS based BMDS assets. Define cybersecurity systems engineering and cybersecurity infrastructure intelligence requirements to focus Intelligence Community collection, analysis and production to target MDA/BMDS cyber vulnerabilities, and incorporate cybersecurity engineering requirements into the systems engineering process.

The Security and Intelligence Project captures five specific areas:
1) Intelligence
2) Counterintelligence
3) Cybersecurity Engineering
4) Research, Development, and Acquisition (RDA) Security
5) Threat Systems Engineering

Collectively, these efforts provide critical information regarding threat ballistic missile system capabilities (via Intelligence); protection of personnel, activities, and technology from espionage and terrorism through active and passive activities (via Counterintelligence); and BMDS system vulnerabilities (via Cyber Security Engineering).

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD28 / *Intelligence & Security*

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 Intelligence Community for collection, analysis and production. The Intelligence Requirements Office gains an understanding of all MDA intelligence requirements, registers these requirements with the Intelligence Community, who in turn provides resulting data to be disseminated and archived in the MDA Intelligence Knowledge Base. Resulting intelligence and threat changes are provided to the MDA System Engineer, who uses the threat data to reduce risk and improve BMDS performance against the evolving threat. It 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 are designed to gain access to, and leverage unique Intelligence Community capabilities for the benefit and advocacy of the Missile Defense Community. Numerous Intelligence Community capabilities are highly classified and require both access and expertise to exploit.

2) Counterintelligence undertakes defensive Counterintelligence (CI) activities as part of an integrated DoD/National effort to detect and neutralize foreign intelligence collection efforts, espionage and 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, Counterintelligence:
-- Conducts CI Investigations: Initial inquiries into reported or suspected clandestine relationships between MDA personnel and agents of a foreign power or international terrorist organizations.
-- Performs CI Collection: Systematically collects intelligence information via liaison relationships with U.S. and host-nation intelligence, CI and law enforcement organizations and debriefings of MDA foreign travelers.
-- Performs CI Analysis and Production: Produces assessments, analytical reports, threat advisories and other products to keep MDA program elements and senior leadership informed on foreign intelligence, international terrorism and foreign entity cyber threat.
-- Provides CI Functional Services: Conducts defensive CI activities in support of MDA programs (including Special Access Programs (SAP) and Research, Development, and Acquisition (RDA) programs), test events, and fielding/deployment activities to protect Critical Program Information and sensitive technologies from foreign intelligence collection activities and international terrorism threats.
-- Ensures that 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.

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 the confidentiality, integrity, and availability and 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 (NSS) and DoD policies; and then influences the design by:
-- Identifying updates to the Core Standards and Requirements to implement Defense-in-Depth within planned development cycles (Builds);
-- Providing oversight, coordination and management of cybersecurity technical requirements development and policy-mandated responsibilities;
-- Coordinating evaluation of cybersecurity capability during BMDS tests; and
-- Assessing the validated cyber threat intelligence for impact to the BMDS design.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD28 / *Intelligence & Security*

To fulfill mission requirements, the program interfaces with relevant Cybersecurity Systems Engineering experts to assess requirements, documentation and cybersecurity system design and assessment criteria.

4) Research, Development, and Acquisition (RDA) Security manages the MDA Information, Industrial, Acquisition Operations Security programs to protect acquisition, test, development, and fielding of BMDS capabilities. RDA Security:
-- Conducts security reviews for all Congressional, Government Accountability Office (GAO), budget, Freedom of Information Act (FOIA), and Public Release actions; develops and coordinates Security Classification Guides (SCGs) and resolves questions regarding security classification;
-- Manages the MDA Industrial Security program to develop Contract Security Classification Specifications (DD-254s) for all classified MDA contracts and to resolve Foreign Ownership, Control, and Influence (FOCI) issues; and
-- Conducts Information Security (INFOSEC) staff assistance and program reviews for all MDA offices and security inquiries as required to identify and resolve security deficiencies that would place BMDS information at risk.

RDA Security also supports program offices in assessing acquisition programs to identify critical program information (CPI) and critical components, analyze risk, and recommend security measures to protect CPI and the BMDS supply chain. Systems Protection provides planning support for BMDS deployments by coordinating security requirements for deploying BMDS assets with the Combatant Commanders (COCOMs) and Services and developing and coordinating site security infrastructure designs in accordance with direction from the Deputy Secretary of Defense to protect critical BMDS assets. RDA Security 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 but unclassified information is not inadvertently released into the public domain.

5) The Threat Systems Engineering effort provides consistent definitions of adversary capabilities required for BMDS development and design, 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 support threat space allocation to specific BMDS capability increments.
-- Guides missile requirements development, planning, and accreditation for BMDS ground and digital simulation tests
-- Supports development of target system specifications; and guide 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 threat model verification and validation to verify missile model meets specifications and is consistent with intelligence assessments at established Intel-Cut-Off Dates (ICOD).
-- 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 2014	FY 2015	FY 2016
Title: Intelligence	7.740	8.165	8.767
Articles:	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD28 / *Intelligence & Security*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
Description: 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. ***FY 2014 Accomplishments:*** -Served as designated intelligence broker between MDA and the Intelligence Community: -- Maintained and communicated prioritized, specific BMDS intelligence requirements to the Intelligence Community. -- Maintained a focused dialog with members of the Intelligence Community to ensure understanding, urgency and context of MDA intelligence requirements. -- Managed intelligence collection requirements, including specific requirements supporting individual ground and flight test events. -- Maintained production requirements on advances in foreign ballistic missile technology. -Provided up-to-date, accurate Intelligence Community reporting of interest to the Missile Defense community. -Maintained and updated knowledge base of foreign ballistic missile threats. Developed, enhanced, and populated the Missile Threat Portals and the new Missile Intelligence Secure Link (which replaced the MTPs in 4Q FY14) with Intelligence Community produced documents at the appropriate security classification levels. -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 2014. ***FY 2015 Plans:*** -Serve as designated intelligence broker between MDA and the Intelligence Community: -- Maintain and communicate prioritized, specific BMDS intelligence requirements to the Intelligence Community. -- Maintain a focused dialog with members of the Intelligence Community to ensure understanding, urgency and context of MDA intelligence requirements. -Provide up-to-date and accurate intelligence to Missile Defense community. -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. -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 in FY 2015. ***FY 2016 Plans:*** The FY 2016 increase is attributed to activities required to keep pace with evolving threat. - Serve as designated intelligence broker between MDA and the Intelligence Community:			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD28 / *Intelligence & Security*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
-- Maintain and communicate prioritized, specific BMDS intelligence requirements to the Intelligence Community. -- Maintain a focused dialog with members of the Intelligence Community to ensure understanding, urgency and context of MDA intelligence requirements. - Provide up-to-date and accurate intelligence to Missile Defense community. - 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. - 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.			
Title: Counterintelligence	5.010	5.253	6.105
Articles:	-	-	-
Description: The Counterintelligence effort protects personnel, activities, information and technologies from espionage and terrorism through defensive operations and activities. ***FY 2014 Accomplishments:*** - Served as MDA Office of Primary Responsibility with Federal, State and Local Counterintelligence (CI) and Law Enforcement agencies for reporting and resolution of reported incidents or matters involving MDA personnel or threats to BMDS information or technologies. - Engaged National, Combatant Command and DoD CI components to share and obtain CI and AT/FP threat information impacting MDA personnel, facilities, information, technologies, programs and activities, worldwide. - Deployed organic CI and technical teams in support of worldwide BMDS fielding and deployment activities. - Conducted CI research and analysis to produce timely, relevant and accurate threat products that kept MDA program elements and senior leadership informed of criminal, terrorist and foreign intelligence threats to MDA personnel, facilities, programs, information, and activities worldwide. - Executed life cycle replacement of outdated technical surveillance countermeasures (TSCM) and cyber forensics gear to ensure the latest technologies were employed during BMD conferences, flight tests and other classified activities to prevent the loss or compromise of classified or sensitive but unclassified information targeted by foreign intelligence-directed collection activities. - Provided on-site CI, TSCM and cyber support during MDA flight tests to detect, deter, or neutralize potential criminal, terrorist and foreign intelligence collection activities directed against MDA personnel, facilities, information, technologies and sensitive activities. - Conducted CI in Cyberspace activities to detect potential foreign intelligence entity-directed malicious and insider threat activities targeting MDA administrative and fire control networks.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD28 / *Intelligence & Security*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Conducted CI Inquiries and supported Title 10 CI Investigations relative to workforce involvement in potential espionage, insider threat and international terrorism activities. ***FY 2015 Plans:*** - Serve 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. -- Engage National, Combatant Command and DoD CI resources to share and obtain threat information impacting MDA personnel, facilities, information, technologies, programs and activities, worldwide. -- Deploy 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. - 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. - Execute 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. - 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. - Conduct CI in Cyberspace activities to detect malicious and insider threat activities targeting MDA administrative and fire control networks. ***FY 2016 Plans:*** The FY 2016 increase is due to the additional mission requirement to establish an Insider Threat Detection capability, per Executive Order 13587 (White House Memorandum on National Insider Threat Policy and Minimum Standards for Executive Branch Insider Threat Programs). - Serve 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. -- Engage National, Combatant Command and DoD CI resources to share and obtain threat information impacting MDA personnel, facilities, information, technologies, programs and activities, worldwide. -- Deploy organic CI and technical teams to support BMDS fielding and deployment activities in all regions and other initiatives under Foreign Military Sales Programs. - 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.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD28 / *Intelligence & Security*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- 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. - 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. - Conduct CI in Cyberspace activities to detect malicious and insider threat activities targeting MDA administrative and fire control networks. - 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.			
Title: Cybersecurity Engineering Program	4.987	4.384	4.687
Articles:	-	-	-
Description: The Cybersecurity Engineering Program is focused on developing designs and solutions to protect the BMD System-of-Systems from cybersecurity threats through coherent cybersecurity systems engineering. ***FY 2014 Accomplishments:*** - Convened the Cybersecurity Engineering and Test Working Group, (CETWG), which developed test requirements to drive data collection to verify BMDS Cybersecurity specifications during Ground Test Integrated (GTI)-06, and specified Critical Assessment Conditions for test data collection and allocated Key Test Points to specific ground test venues. - Ensured cybersecurity was integrated into the Acquisition Process in accordance with DoD Instruction 8580.1. - Defined Cybersecurity Engineering requirements for the BMD System Specification for continental U.S. (CONUS) and non-CONUS based BMDS assets. -Started “Mission to Cyber Dependency Modeling” initiative which informs cybersecurity impact analysis and prioritization of cyber threat intelligence gathering and systems engineering efforts which supports identification of the BMDS Cyber-Key Terrain (C-KT). - Supported the BMDS Inter-Element Communications Cybersecurity (BIECC) Study, which investigated cybersecurity risks associated with mission critical communications between BMDS Elements - Provided cybersecurity systems engineering subject matter expertise to the Agency and influenced BMDS requirements to ensure cybersecurity systems engineering was adequately represented in future system development and upgrades. - Recommended updates to the BMDS Core Standards to include new Cyber-related requirements specified by the Agency, the Combatant Commanders (COCOMS), the DOD, and the Federal Government. - Ensured Interface Control Documents (ICDs), Interface Specifications (IFSs), and Specification Change Notices (SCN) introduce cybersecurity concerns for the BMDS, to increase cybersecurity resiliency early in the systems engineering life cycle to protect against known and unknown threats.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD28 / *Intelligence & Security*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Supported the Agency's Risk Management Framework (RMF) implementation; participated in RMF transition working groups and engineering requirements development. ***FY 2015 Plans:*** - Implement 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. - Ensure Cybersecurity is integrated into the Acquisition Process in accordance with DoD Instruction 8580.1. - Develop and coordinate near-term and long-term engineering changes to the BMDS that advance the resilience to cyber threats. - 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 COCOMS, the DOD, and the Federal Government. - 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. - Develop technical requirements and interface documentation to execute an Integrated Cybersecurity Engineering Net-centric Architectural Concept. - Implement 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. - Implement mitigations to cyber threats as system requirements and specifications to the BMDS design and architecture, ensuring mitigations trace to necessary components and interfaces supporting the BMDS mission. - Coordinate evaluation of cybersecurity capability during BMDS tests; develop verification and assessment strategies for system requirements. ***FY 2016 Plans:*** The FY 2016 increase reflects activities in support of a greater focus on cyber security DoD-wide. - 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. - Ensure Cybersecurity is integrated into the Acquisition Process in accordance with DoD Instruction 8580.1. - Develop and coordinate near-term and long-term engineering changes to the BMDS that advance the resilience to cyber threats.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD28 / *Intelligence & Security*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- 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. - 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. - Develop technical requirements and interface documentation to execute an Integrated Cybersecurity Engineering Net-centric Architectural Concept. - 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. - 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. - Coordinate evaluation of cybersecurity capability during BMDS tests. - Develop verification and assessment strategies for system cybersecurity requirements.			
Title: Research, Development, and Acquisition (RDA) Security	9.587	9.742	10.434
Articles:	-	-	-
Description: Research, Development, and Acquisition (RDA) Security protects Ballistic Missile Defense System (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. Also, coordinates MDA intelligence, counterintelligence and security support to BMDS test activities.			
FY 2014 Accomplishments: - Performed public release reviews of 287 documents and/or videos, and Freedom of Information Act (FOIA) reviews of 12 additional documents to ensure classified or controlled unclassified information was not inadvertently released into the public domain. - Performed 32 Mandatory Declassification Reviews (MDR) of requested documents to ensure properly classified information was not inadvertently declassified.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD28 / *Intelligence & Security*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Provided development support, policy review, and Agency coordination on one Joint U.S.-Israeli Security Classification Guide (SCG) for the David's Sling Weapon System and 13 non-MDA SCGs supporting Air Force, Navy, NORTHCOM, STRATCOM, CYBERCOM, various Office of the Secretary of Defense organizations, and several International partners. - Provided security support to all Agency flight tests. - Performed 90 Information Security Program reviews and staff assistance visits of MDA programs and coordinated required security incident reviews to identify and fix security deficiencies impacting Agency operations; supported continuing awareness, training, and emphasis on Information Security measures to protect critical BMDS technological information. - Provided security oversight for the Agency`s classified contracts by drafting and coordinating DD254 ``Contract Security Classification Specification`` documents to support contracting efforts and ensured that appropriate protections for BMDS sensitive information are applied within the supporting industrial base. - Provided security support to Phased Adaptive Approach (PAA) and other directed BMDS systems deployments, to ensure effective physical protection is provided to extremely low density/high demand emerging warfighter capability. Developed the Physical Security Engineering Process to ensure the most cost effective security infrastructures are emplaced at the deployed sites. - 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. - 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. - 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. - Provided digitized material, automated search tools, and Declassification Specialists to identify sensitive BMDS material that qualifies for exemption from automatic declassification based on age. Reviewed over 10 million pages to identify equities that warrant continued protection to preserve the technological advantage of the BMDS. - Deployed Security Specialists to Reagan Test Site to provide on-site security support for execution of Flight Test FTG-06b. - Provided MDA Advanced Technology Sensors and Targets (DVL) guidance and assistance in developing an Operations Security program to protect sensitive unclassified information not covered by Security Classification Guides or the Program Protection Plan. ***FY 2015 Plans:*** - Perform 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.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD28 / *Intelligence & Security*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Perform Information Security staff assistance reviews and assessments of 90 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. - 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. - Provide 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. - Conduct 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; ensure critical technologies embedded in Missile Defense systems are not vulnerable to compromise. - 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. - 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. - 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. Declassification reviews identify equities that warrant continued protection to preserve the technological advantage of the BMDS.			
FY 2016 Plans: FY 2016 increase supports growing demand for declassification reviews. - Perform 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. - 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. - 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. - Provide security support to deployed assets to ensure effective physical protection is provided to extremely low density/high demand emerging warfighter capability.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD28 / *Intelligence & Security*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Conduct 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; ensure critical technologies embedded in Missile Defense systems are not vulnerable to compromise. - 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. - 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. - 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.			
Title: Threat Systems Engineering	10.645	9.587	10.270
Articles:	-	-	-
Description: 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. Note: Content was planned in PB15 in project MD24, but transferred to this project for execution.			
FY 2014 Accomplishments: Developed and maintained the BMDS threat set to support BMDS design, verification, and assessment efforts. -- Updated, verified, and validated threat models to include new threat representations with countermeasures, based on current intelligence reports. -- Provided high fidelity digital BMD threat descriptions, threat models, and scenarios data for Element ballistic missile defense capability development related to Near-Term Discrimination Improvement for Homeland Defense Near-Term (NT DIHD NT), Redesigned Exo-Atmospheric Kill Vehicle (R-EKV), and Long Range Discrimination Radar (LRDR). -- Produced new or /updated existing threat specifications and directly supported test objectives identified in the Integrated Master Test Plan (IMTP). Supported development of threat scenario data, including systems with countermeasures, for use in ground test, war games, and exercises. -- Guided targets requirements development, planning, and certification for several BMDS flight tests. -- Ensured targets were threat representative and developed mission specific target requirements. -- Produced new Target System Performance Specifications (TSPS) for a new Intercontinental Ballistic Missile (ICBM) and updated the TSPS for a Medium Range Ballistic Missile (MRBM). -- Published FY 2014 Addendum to the Adversary Data Package.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD28 / *Intelligence & Security*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
-- Continued to develop a threat library, including new ICBM and updates to MRBM systems with countermeasures. ***FY 2015 Plans:*** - Define, develop, and maintain the Ballistic Missile Defense System (BMDS) threat. - Produce flight test targets and countermeasures requirements to support BMDS flight test testing. - Produce or update threat specifications, models, and scenario data to support BMDS development & testing. - Support verification and validation of threat models. - Certify flight test targets meet the established requirements. - Analyze threat representation of flight test targets and ensure target requirements are based on intelligence assessments and the threat. ***FY 2016 Plans:*** FY 2016 increase is due to additional threat modeling required to support system verification and target certification. - Ensure flight test targets meet operationally realistic conditions. - Define threat representative target requirements early in the development of Integrated Master Test Plan. - Define the BMDS threat space and support threat space allocation to specific BMDS capability increments. - Guide threat missile requirements development, planning, and accreditation for BMDS ground and digital simulation tests - Develop target system specifications and guide targets requirements development, planning, and certification for BMDS flight tests. - Analyze flight test target performance relative to threat intelligence assessments to support target system verification and certification. - Conduct threat model verification and validation to verify missile models meet specifications and are consistent with intelligence assessments at established Intel-Cut-Off dates. - Produce threat / scenario data for BMDS development events and establish threat consistency across the BMDS and Elements.			
Accomplishments/Planned Programs Subtotals	37.969	37.131	40.263

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 0305103C: *Cyber Security Initiative*	0.912	0.961	0.963	-	0.963	0.976	0.992	1.003	1.038	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD28 / *Intelligence & Security*

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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD28 / *Intelligence & Security*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Remarks

N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Intelligence - Analysis and Support	C/FFP	Lockheed Martin : Gaithersburg, VA	25.917	-		-		-		-		-	-	25.917	-
Intelligence - Intelligence Analysis & Support	Various	MDA : VA, AL, CO	5.920	3.180		3.734	Nov 2014	4.251	Nov 2015	-		4.251	Continuing	Continuing	Continuing
Intelligence - Intelligence Applications	MIPR	SMDC : Huntsville, AL	6.470	-		-		-		-		-	-	6.470	-
Intelligence - Intelligence Collections	MIPR	NASIC : Wright-Patterson AFB, OH	1.300	-		-		-		-		-	-	1.300	-
Intelligence - Intelligence Support	C/CPFF	Booz Allen Hamilton : AL, VA, CO	4.051	4.216		3.861	Nov 2014	3.809	Nov 2015	-		3.809	Continuing	Continuing	Continuing
Intelligence - Intelligence Support (2)	C/CPFF	Northrop Grumman : AL, CO	0.512	0.344		0.570	Nov 2014	0.707	Nov 2015	-		0.707	Continuing	Continuing	Continuing
Counterintelligence - CI Analysis & Support	Various	MDA : AL, CO, VA	1.887	1.679		2.069	Nov 2014	2.138	Nov 2015	-		2.138	Continuing	Continuing	Continuing
Counterintelligence - CI Analysis and Support 2	C/CPFF	Booz Allen Hamilton : McLean, VA	2.927	-		-		-		-		-	-	2.927	-
Counterintelligence - CI Analysis and Support 3	C/CPFF	ManTech : AL, CO, VA	0.000	3.331		3.184		3.105	Nov 2015	-		3.105	Continuing	Continuing	Continuing
Counterintelligence - CI Insider Threat Analysis	C/CPFF	ManTech : AL, CO, VA	0.000	-		-		0.862	Nov 2015	-		0.862	Continuing	Continuing	Continuing
Cybersecurity Engineering Program - Cyber Threat 1	C/CPFF	Mantech : VA	1.052	0.918		-		-		-		-	-	1.970	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD28 / *Intelligence & Security*	

Support ($ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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 - FFRDC	FFRDC	Aerospace : CA	1.050	0.600		0.540	Nov 2014	0.755	Nov 2015	-		0.755	Continuing	Continuing	Continuing
Cybersecurity Engineering Program - Cybersecurity - FFRDC (2)	FFRDC	MITRE : VA	0.446	0.540		0.538	Nov 2014	0.755	Nov 2015	-		0.755	Continuing	Continuing	Continuing
Cybersecurity Engineering Program - Cybersecurity Engineering	Various	MDA : VA, AL	0.712	2.929		2.406	Nov 2014	2.259	Nov 2015	-		2.259	Continuing	Continuing	Continuing
Cybersecurity Engineering Program - Cybersecurity Engineering CSS	C/CPFF	Booz Allen Hamilton : McLean, VA	0.000	-		0.900	Nov 2014	0.918	Nov 2015	-		0.918	Continuing	Continuing	Continuing
Research, Development, and Acquisition (RDA) Security - RDA Analysis & Support	C/CPFF	Mantech : Falls Church, VA	3.101	3.859		4.473	Nov 2014	4.508	Nov 2015	-		4.508	Continuing	Continuing	Continuing
Research, Development, and Acquisition (RDA) Security - RDA Declass Analysis	C/CPFF	Booz-Allen Hamilton : McLean, VA	1.146	1.384		1.591	Nov 2014	1.623	Nov 2015	-		1.623	Continuing	Continuing	Continuing
Research, Development, and Acquisition (RDA) Security - RDA Security Analysis	Various	MDA : VA, AL	5.823	3.179		3.266	Nov 2014	3.592	Nov 2015	-		3.592	Continuing	Continuing	Continuing
Research, Development, and Acquisition (RDA) Security - RDA Security Support	Various	Various : VA, AL, CO	0.000	1.165		0.412	Nov 2014	0.711	Nov 2015	-		0.711	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering	Various	MDA : VA, AL, CO	0.000	2.268		2.674	Nov 2014	3.153	Nov 2015	-		3.153	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - CSS	C/CPFF	MEI : AL	0.000	3.811		3.993	Nov 2014	4.139	Nov 2015	-		4.139	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD28 / *Intelligence & Security*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Threat Systems Engineering - Threat Systems Engineering - CSS (2)	C/CPFF	CSC : AL, VA	0.000	0.974		1.920	Nov 2014	1.958	Nov 2015	-		1.958	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - FFRDC	FFRDC	MIT/LL : MA	0.000	0.643		-		-		-		-	-	0.643	-
Threat Systems Engineering - Threat Systems Engineering - UARC	FFRDC	JHU/APL : MD	0.000	1.961		-		-		-		-	-	1.961	-
Threat Systems Engineering - Unique RCS	FFRDC	NSWC : Corona, CA	0.000	0.988		1.000	Nov 2014	1.020	Nov 2015	-		1.020	Continuing	Continuing	Continuing
		Subtotal	62.314	37.969		37.131		40.263		-		40.263	-	-	-

Remarks

MDIOC - Missile Defense Integration & Operations Center; SMDC - Space & Missiles Development Center; NASIC - National Air and Space Intelligence Center

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Remarks

N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD28 / *Intelligence & Security*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks															
N/A															

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	62.314	37.969		37.131		40.263		-		40.263	-	-	-

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.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD28 / *Intelligence & Security*

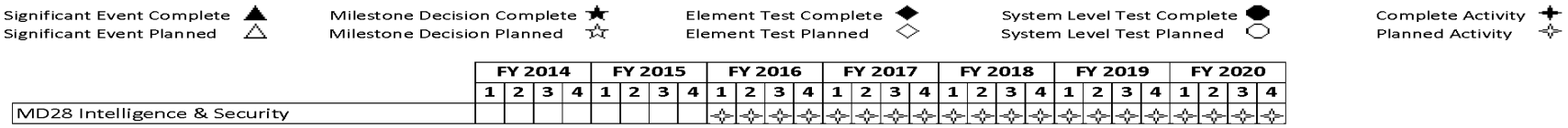


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD28 / *Intelligence & Security*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MD28 Intelligence & Security	1	2016	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD30 / *BMD Information Management Systems*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MD30: *BMD Information Management Systems*	82.677	79.572	95.197	95.710	-	95.710	97.050	83.201	82.506	87.440	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Beginning in FY 2014, Information Assurance/Computer Network Defense content in Budget Project MD30 of Enabling Programs Element 0603890C moved to a new Cyber Operations Budget Project MC30 in Program Element 0603890C.

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 North Atlantic Treaty Organization (NATO) members, Combatant Commands (COCOMS), 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, Combatant Commanders, North Atlantic Treaty Organization (NATO) partners, and other industry partners. Communication among these organizations facilitates the MDA mission of developing and fielding an integrated Ballistic Missile Defense System (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 facilitates. The development of technologies to guard against future missile threat growth. 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 teleconferencing 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.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** 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 Department of Defense (DoD) policies and in keeping with the President's declaration on 29 May 2009, that "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
This service strategy supports end user office productivity needs and covers the licensing and sustainment of desktops, laptops, and associated hardware and software. The support also covers printing and copy services, file and directory services, user authentication, and help desk support for break-fix actions.

2. Unified Communications
This service strategy 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, VTC and conference room scheduler application, BlackBerrys and wireless services, instant messaging and collaboration, secure and non-secure telephone equipment, private branch exchange switches maintenance, unclassified desktop/laptop integrated audio/video collaboration services, secure Telepresence suites and secure mobile cell phones.

3. Information Assurance/Computer Network Defense (IA/CND)
This service strategy provides protection of classified and unclassified infrastructure necessary for planning and coordination of the Director's RDT&E, operations and maintenance, and upgrade initiatives for the BMDS. This service strategy provides compliance with Federal Information Security Management Act (FISMA) and includes implementation of the DoD Information Assurance Certification and Accreditation Process (DIACAP) to manage risk, conduct security assessments, and monitor compliance with applicable security controls. This vital program of the BMDS and MDA Enterprise consists of cybersecurity, information assurance, computer network defense, network situational awareness, and certification and accreditation activities to comply with the Global Information Grid Information Assurance Strategic Plan and Goals, DoD information assurance directives, instructions and guidelines.

4. Business Automation Services
In accordance with the Clinger Cohen Act and Defense Business Systems Investment Management Process, the Business Automation Services strategy provides 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

5. Portal and Data Services

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

The Portal and Data Services strategy 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. This function is also responsible for records management solutions, and privacy and civil liberties compliance and reporting.

6. Network and Infrastructure Services
This strategy includes operations and sustainment of MDA classified and unclassified networks and data centers. This service 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 (COMSEC) status. This service also supports Disaster Recovery and Continuity of Operations (DR/COOP) rehearsals and network hardware break/fix and end-of-life replacement.

7. Information Technology (IT) Planning and Solutions
This service strategy provides IT project planning and management, life-cycle asset management, enterprise architecture planning and documentation, architecture change and configuration management, Office of Management and Budget (OMB) and DoD IT compliance tracking and reporting.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
Title: End User Support	20.551	19.757	20.277
Articles:	-	-	-

Description: Provides for operations, maintenance and helpdesk support to each MDA IT user desktop capability.

FY 2014 Accomplishments:
-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.
-Monitored networks for user compliance and DoD policies, and report incidents.
-Maintained Printing and Copy Services (386 multi-functional device printer s and 12 print servers).
-Sustained email services (24 Exchange servers, 4 BlackBerry Enterprise Services servers and 2 archiving storage area networks).
-Sustained file services (8 file servers and 4 storage area networks) -Maintain Directory Services (24 Active Directory and domain controller servers).
-Maintained Authentication services (Public Key Infrastructure/Common Area Card) -Maintain current hardware and software licenses for IT operational systems.
-Maintained an Integrated Service Desk supporting 8,000 MDA users across all locations, resolving over 45,000 help desk tickets per quarter.
-Maintained IT life-cycle asset management of over 15,000 end user devices (desktops, laptops, monitors, printers, thin clients, and BlackBerrys).
-Funded MDA Chief Information Office (CIO) civilian salaries.

FY 2015 Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
-Sustain 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. -Monitor networks for user compliance and DoD policies, and report incidents. -Maintain Printing and Copy Services (386 multi-functional device printer s and 12 print servers). -Sustain email services (24 Exchange servers, 4 BlackBerry Enterprise Services servers and 2 archiving storage area networks). -Sustain file services (8 file servers and 4 storage area networks) -Maintain Directory Services (24 Active Directory and domain controller servers). -Maintain Authentication services (Public Key Infrastructure/Common Area Card) -Maintain current hardware and software licenses for IT operational systems. -Maintain an Integrated Service Desk supporting 8,000 MDA users across all locations, resolving over 45,000 help desk tickets per quarter. -Maintain IT life-cycle asset management of over 15,000 end user devices (desktops, laptops, monitors, printers, thin clients, and BlackBerrys). -Fund MDA Chief Information Office (CIO) civilian salaries.			
FY 2016 Plans: -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. -Maintain Defense Property Accountability System (DPAS) property accountability artifacts to support DoD Audit Readiness activities. -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. -Address approximately 50,000 Client Support tickets per year. -Respond to approximately 77,000 IT Help Desk tickets per year. -Monitor networks for user compliance and DoD policies, and report incidents. -Maintain Printing and Copy Services (872 multi-functional device printers and 51 classified/unclassified print servers). -Sustain email services (103 Exchange servers, 12 Smart Phone Enterprise servers, 14 Lync communication servers and 12 archive servers). -Sustain file services (33 classified/unclassified file servers and 4 storage area networks). -Maintain Directory Services (70 classified/unclassified domain controller servers). -Maintain Authentication services (Public Key Infrastructure/Common Area Card). -Maintain current hardware and software licenses for IT operational systems. -Maintain an Integrated Service Desk supporting 8,350 MDA users across all locations, resolving over 45,000 help desk tickets per quarter.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
-Maintain IT life-cycle asset management of over 15,000 end user devices (desktops, laptops, monitors, printers, thin clients, and BlackBerrys). -Fund MDA Chief Information Office (CIO) civilian salaries.			
Title: Unified Communications	13.106	14.189	14.314
Articles:	-	-	-
Description: Provides for implementation, operations and maintenance of VTC, wireless and telephony services. ***FY 2014 Accomplishments:*** -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). -Operated, monitored, and sustained recurring classified and unclassified telecommunications equipment to comply with DoD policies and Global Information Grid architecture plan. -Operated, monitored, and sustained recurring classified and unclassified wireless services. -Operated, monitored, and sustained recurring operations for agency wide video teleconference rooms and equipment. -Provided and implemented engineering solutions for all unified communication services. -Sustained unclassified desktop instant messaging and collaboration capabilities to MDA users. -Funded Chief Information Office (CIO) civilian salaries. ***FY 2015 Plans:*** -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). -Operate, monitor, and sustain recurring classified and unclassified telecommunications equipment to comply with DoD policies and Global Information Grid architecture plan. -Operate, monitor, and sustain recurring classified and unclassified wireless services. -Operate, monitor, and sustain recurring operations for agency wide video teleconference rooms and equipment. -Provide and implement engineering solutions for all unified communication services. -Sustain unclassified desktop instant messaging and collaboration capabilities to MDA users. -Fund Chief Information Office (CIO) civilian salaries. ***FY 2016 Plans:*** -Develop and maintain artifacts to obtain authority to operate VTC systems. -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).			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
-Operate, monitor, and sustain recurring classified and unclassified telecommunications equipment to comply with DoD policies and Global Information Grid (GIG) architecture plan. -Operate, monitor, and sustain recurring classified and unclassified wireless services, 2,401 unclassified users. -Operate, monitor, and sustain recurring operations for agency wide video teleconference rooms and equipment. 10,000+ sessions per month increasing 11% per year. -Provide and implement engineering solutions for all unified communication services. -Sustain unclassified desktop instant messaging and collaboration capabilities to MDA users. -Fund Chief Information Office (CIO) civilian salaries.			
Title: Business Automation Services	5.319	8.148	7.976
Articles:	-	-	-
Description: Provides for the implementation, operations and maintenance of business specific applications. ***FY 2014 Accomplishments:*** -Sustained an MDA community cloud to host and sustain business applications, storage administration, hosting and operations and maintenance of the virtual environment. -Sustained portal-based Learning Management System -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). -Provided server administration hosting licensing and management. -Maintained Integrated Access Control System and Diamond II badge system. -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. -Funded MDA Chief Information Office (CIO) civilian salaries. ***FY 2015 Plans:*** -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 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.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
-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. -Replace End-of-Life hardware platform to support Microsoft SharePoint software migration (version 2007 to version 2013). -Fund MDA Chief Information Office (CIO) civilian salaries. ***FY 2016 Plans:*** -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 Chief Information Office (CIO) civilian salaries.			
Title: Portal and Data Services ***Articles:*** ***Description:*** Provides for the implementation, operations and maintenance of Portal, digital records and data archiving functions. ***FY 2014 Accomplishments:*** -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.	5.132 -	7.070 -	6.783 -

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
-Sustained the Ballistic Missile Defense System (BMDS) Integrated Master Schedule and the Ballistic Missile Defense (BMD) Asset Management Tool. -Managed a software assessment program and conducted reviews of proposed software applications for DoD compliance. -Sustained a DoD mandated Electronics Records Management system. -Provided MDA web-based training programs for information assurance, business applications, workforce certification, security, and ethics. -Funded MDA Chief Information Office (CIO) civilian salaries.			
FY 2015 Plans: -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. -Maintain a MDA Privacy Office, conducted privacy impact surveys and completed Civil Liberties compliance reporting. -Maintain compliance with Section 508 of the Rehabilitation Act to ensure electronic information technology is accessible to persons with disabilities. -Sustain the Ballistic Missile Defense System (BMDS) Integrated Master Schedule and the Ballistic Missile Defense (BMD) Asset Management Tool. -Manage a software assessment program and conducted reviews of proposed software applications for DoD compliance. -Sustain a DoD mandated Electronics Records Management system. -Provide MDA web-based training programs for information assurance, business applications, workforce certification, security, and ethics. -Provide for the engineering and sequenced migration of one billion software objects and knowledge files from the Microsoft SharePoint 2007 to the 2013 platform. -Fund MDA Chief Information Office (CIO) civilian salaries.			
FY 2016 Plans: -Manage demands on data storage capacity to accommodate the current and increasing number of users in the MDA RDT&E community. -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. -Develop and maintain executive digital dashboards. -Sustain a DoD compliant Electronics Records Management system. -Digitize official records for more efficient storage and retrieval.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
-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. -Maintain a MDA Privacy Office, conducted privacy impact surveys and completed Civil Liberties compliance reporting. -Maintain compliance with Section 508 of the Rehabilitation Act to ensure electronic information technology is accessible to persons with disabilities. -Sustain the Ballistic Missile Defense System (BMDS) Integrated Master Schedule and the Ballistic Missile Defense (BMD) Asset Management Tool. -Manage a software assessment program and conducted reviews of proposed software applications for DoD compliance. -Provide MDA web-based training programs for information assurance, business applications, workforce certification, security, and ethics. -Fund MDA Chief Information Office (CIO) civilian salaries.			
Title: Network and Infrastructure Services (Retitled: MDA Special Purpose Processing Node - PBR16)	26.326	31.613	31.669
Articles:	-	-	-
Description: 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.			
FY 2014 Accomplishments: -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 -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 -Architected and developed plans to repair general IT service and business systems -Performed network tracking and analysis and reported metrics on equipment lifecycle and average time to repair -Planned, engineered and implemented sustainment projects for general IT service and business systems -Procured, received, inventoried, and managed IT equipment to include network devices and desktop and laptop computers -Provided Communications Security (COMSEC) operations and maintenance services for over 4,000 COMSEC items -Funded MDA Chief Information Office (CIO) civilian salaries			
FY 2015 Plans: The increase of $5.287 million is due to the following investments required to comply with DoD directives and JIE initiatives:			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
$1.200 million increase due to servers and storage management activities to comply with Defense Information Security Agency (DISA) Security Technical Implementation Guide (STIG) requirements and to analyze for tuning and performance optimization due to MDA mission growth. $1.750 million increase for additional server capacity for the MDA RDT&E specific data processing requirements in the MDA SPPNs. $1.195 million increase in Network Management & Infrastructure Services required to update network switches to comply with DoD standards for remote management. $1.050 million increase in Core Application services for managing development and continual updates of the network management tool set that is critical for maintaining continuity of operations for the MDA SPPNs. -Sustain 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 -Sustain 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 -Architect and develop plans to repair general IT service and business systems -Perform network tracking and analysis and reported metrics on equipment lifecycle and average time to repair -Plan, engineer and implement sustainment projects for general IT service and business systems -Procure, receive, inventory, and manage IT equipment to include network devices and desktop and laptop computers -Provide Communications Security (COMSEC) operations and maintenance services for over 4,000 COMSEC items -Fund MDA Chief Information Office (CIO) civilian salaries. ***FY 2016 Plans:*** -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 -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 -Maintain MDA IT Infrastructure Services at a 99.99% availability level. -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			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
-Continue server virtualization to meet DoD mandates and Federal green standards, 22% still require virtualization. -Develop solutions, provide designs and execute transition plans, consistent with the architecture roadmap -Provide Detailed Designs, Implementation Plans, Interface Control Document (ICD) updates, Information Assurance assessments, Change Management, and DR COOP implementation engineering services. -Assist in performing configuration tests and assisting the O&M RBA crews with execution of operational readiness tests. -Manage MDA increasing need of data storage capacity, over 5 Petabytes. -Support constant modifications and reconfigurations of network infrastructure for mission and event unique configurations. -Architect and develop plans to repair general IT service and business systems -Perform network tracking and analysis and reported metrics on equipment lifecycle and average time to repair -Plan, engineer and implement sustainment projects for general IT service and business systems -Procure, receive, inventory, and manage IT equipment to include network devices and desktop and laptop computers -Fund MDA Chief Information Office (CIO) civilian salaries.			
Title: Information Technology (IT) Planning and Solutions	9.138	14.420	14.691
Articles:	-	-	-
Description: Provides IT engineering support for new requirements analysis, design, planning and implementation of IT solutions. Real-world issues and the global demand for the Missile Defense Agency (MDA) BMDS capabilities is increasing the demand for more complex information technology products and highly specialized IT services.			
FY 2014 Accomplishments: -Supported the MDA CIO Enterprise Architecture Board, Program Management Integration Board, and Change Control Board. -Updated and maintained current Enterprise architecture documentation. -Provided engineering support for change management, configuration management, validation testing and quality assurance. -Managed MDA customer IT requirements planning, engineering and project management. -Supported MDA Command Group IT project planning and documentation. -Maintained asset management of IT equipment in accordance with DoD policies. -Provided planning, budgeting, and management oversight of IT projects. -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. -Funded MDA Chief Information Office (CIO) civilian and matrix civilian salaries.			
FY 2015 Plans: The increase of $5.282 million is due to the following: $3.884 million increase due to the realignment of Advisory and Assistance Services to the IT Planning and Solutions accomplishment.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
$1.398 million increase due to the expanding requirements for specialized IT engineering skillsets to address the following: DoD directed Joint Information Environment (JIE) projects, DoD Architecture Roadmap and DoD Architecture Framework (DODAF) to ensure continued use of the Global Information Grid (GIG). In addition, the increase is for project planning and engineering to ensure compliance with Federal Laws such as the Federal Information Security Management Act (FISMA), DoD directed JIE projects and DoD Directives and Policies. -Support the MDA CIO Enterprise Architecture Board, Program Management Integration Board, and Change Control Board. -Update and maintain current Enterprise architecture documentation. -Provide engineering support for change management, configuration management, validation testing and quality assurance. -Manage MDA customer IT requirements planning, engineering and project management. -Support MDA Command Group IT project planning and documentation. -Maintain asset management of IT equipment in accordance with DoD policies. -Provide planning, budgeting, and management oversight of IT projects. -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. -Fund MDA Chief Information Office (CIO) civilian and matrix civilian salaries. ***FY 2016 Plans:*** -Design and engineer IT solutions for DoD directed JIE projects. -Provide DoD Architecture Framework compliant engineering designs and solutions. -Provide project planning and oversight for approximately 150 IT projects per year. -Process over 800 Agency-wide IT commodity requests per year. -Support the MDA CIO Enterprise Architecture Board, Program Management Integration Board, and Change Control Board. -Update and maintain current Enterprise architecture documentation. -Provide engineering support for change management, configuration management, validation testing and quality assurance. -Manage MDA customer IT requirements planning, engineering and project management. -Support MDA Command Group IT project planning and documentation. -Provide planning, budgeting, and management oversight of the Agency-wide IT program. -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. -Fund MDA Chief Information Office (CIO) civilian and matrix civilian salaries.			
Accomplishments/Planned Programs Subtotals	79.572	95.197	95.710

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD30 / *BMD Information Management Systems*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 0603176C: *Advanced Concepts and Performance Assessment*	6.919	8.470	12.139	-	12.139	13.227	12.932	13.249	13.219	Continuing	Continuing
• 0603177C: *Discrimination Sensor Technology*	29.642	36.610	28.200	-	28.200	-	-	-	-	Continuing	Continuing
• 0603178C: *Weapons Technology*	45.268	54.068	45.389	-	45.389	48.912	70.115	54.595	66.797	Continuing	Continuing
• 0603180C: *Advanced Research*	23.025	16.584	17.364	-	17.364	18.919	20.380	21.069	21.457	Continuing	Continuing
• 0603294C: *Common Kill Vehicle Technology*	67.796	25.639	46.753	-	46.753	75.262	71.476	86.814	99.701	Continuing	Continuing
• 0603881C: *Ballistic Missile Defense Terminal Defense Segment*	251.899	163.892	228.021	-	228.021	230.306	257.014	218.533	247.707	Continuing	Continuing
• 0603882C: *Ballistic Missile Defense Midcourse Defense Segment*	1,064.445	873.923	1,284.891	-	1,284.891	936.425	803.392	903.539	912.890	Continuing	Continuing
• 0603884C: *Ballistic Missile Defense Sensors*	340.391	270.901	233.588	-	233.588	228.437	142.363	140.740	141.733	Continuing	Continuing
• 0603892C: *AEGIS BMD*	885.704	764.224	843.355	-	843.355	762.740	748.354	564.827	579.585	Continuing	Continuing
• 0603893C: *Space Tracking and Surveillance System*	41.618	31.331	31.632	-	31.632	17.917	23.937	28.789	30.344	Continuing	Continuing
• 0603895C: *Ballistic Missile Defense System Space Programs*	6.412	6.389	23.289	-	23.289	21.433	16.108	11.933	11.952	Continuing	Continuing
• 0603896C: *Ballistic Missile Defense Command and Control, Battle Management & Communication*	390.207	428.277	450.085	-	450.085	461.759	423.843	442.926	460.112	Continuing	Continuing
• 0603898C: *Ballistic Missile Defense Joint Warfighter Support*	41.051	46.387	49.570	-	49.570	50.533	51.363	52.217	54.247	Continuing	Continuing
• 0603904C: *Missile Defense Integration and Operations Center (MDIOC)*	50.271	58.503	49.211	-	49.211	58.074	53.655	55.194	57.162	Continuing	Continuing
• 0603907C: *Sea Based X-Band Radar (SBX)*	70.336	64.409	72.866	-	72.866	71.267	75.760	72.319	87.058	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 0603913C: *Israeli Cooperative Programs*	283.782	268.842	102.795	-	102.795	104.923	106.913	109.599	111.370	Continuing	Continuing
• 0603914C: *Ballistic Missile Defense Test*	342.695	366.302	274.323	-	274.323	298.390	345.333	330.404	350.747	Continuing	Continuing
• 0603915C: *Ballistic Missile Defense Targets*	501.170	455.068	513.256	-	513.256	585.727	484.242	442.202	460.945	Continuing	Continuing
• 0604880C: *Land Based SM-3 (LBSM3)*	124.568	123.444	34.970	-	34.970	40.787	30.486	20.193	22.079	Continuing	Continuing
• 0604881C: *AEGIS SM-3 Block IIA Co-Development*	297.169	263.695	172.645	-	172.645	66.828	-	-	-	-	800.337
• 0901598C: *Management HQ - MDA*	34.712	35.598	35.871	-	35.871	35.187	34.509	33.466	33.992	Continuing	Continuing

Remarks

D. Acquisition Strategy

In FY 2012, the Missile Defense Agency awarded a competitive contract to Network Management Resources Incorporated (NMR) for MDA Information Collaboration Services to be performed at all MDA locations.

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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD30 / *BMD Information Management Systems*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Remarks

N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
End User Support - End User Assistance and Advisory Services	C/CPFF	Colsa : AL, AK, CA, CO, HI, NM, VA	1.650	1.143		-		-		-		-	Continuing	Continuing	Continuing
End User Support - End User Civilian Pay/Travel/ PCS	Allot	MDA Civilian Pay : AL, CO, NM, VA	2.392	3.056		3.116	Oct 2014	3.121	Oct 2015	-		3.121	Continuing	Continuing	Continuing
End User Support - End User Civilian Travel	Allot	MDA Civilian Travel : AL, AK, CA, CO, HI, NM, VA	0.240	0.206		0.206	Oct 2014	0.223	Oct 2015	-		0.223	Continuing	Continuing	Continuing
End User Support - End User IT Hardware/ Software Support	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	5.405	3.394		7.778	Oct 2014	8.590	Oct 2015	-		8.590	Continuing	Continuing	Continuing
End User Support - End User IT Licenses	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	5.195	3.236		1.107	Oct 2014	1.138	Oct 2015	-		1.138	Continuing	Continuing	Continuing
End User Support - End User Operational Support	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	14.921	9.516		7.550	Oct 2014	7.205	Oct 2015	-		7.205	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Advisory and Assistance Services	C/CPFF	Colsa : AL, CO, VA	0.299	0.207		-		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD30 / *BMD Information Management Systems*	

Support ($ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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 Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay : Al, CO, VA	0.963	1.681		1.081	Oct 2014	1.092	Oct 2015	-		1.092	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Leased Communications/ Licenses	MIPR	DISA/DREN/IT2S : AL, AK, CA, CO, HI, NM, VA	4.259	4.648		4.869	Oct 2014	5.973	Oct 2015	-		5.973	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Operational Support	Allot	Northrop Grumman : AL, CO, VA	0.895	1.881		2.623	Oct 2014	-		-		-	Continuing	Continuing	Continuing
Unified Communications - Unified Communications VTC Operations Support	C/CPIF	NMR : AL, AK, CO, NM, VA	5.101	4.689		5.616	Oct 2014	7.249	Oct 2015	-		7.249	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Advisory and Assistance Services	C/CPFF	Colsa : AL, CO, VA	0.149	0.104		-		-		-		-	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Civilian Pay/ Travel/PCS	Allot	MDA Civilian Pay : AL, CO, VA	0.711	0.764		0.772	Oct 2014	0.780	Oct 2015	-		0.780	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Licenses	C/CPAF	Northrop Grumman : AL, CO, VA	0.867	0.882		0.897	Oct 2014	0.916	Oct 2015	-		0.916	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Operational Support	C/CPAF	Northrop Grumman : AL, CO, VA	3.759	3.549		6.459	Oct 2014	6.259	Oct 2015	-		6.259	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Services Support	MIPR	CACI : AL, CO, VA	0.000	0.020		0.020	Oct 2014	0.021	Oct 2015	-		0.021	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services	C/CPFF	Colsa : AL, CO, VA	0.454	0.207		-		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Advisory and Assistance Services															
Portal and Data Services - Portal and Data Services Civilian Pay/Travel/PCS	Allot	MDS Civilian Pay : AL, CO, VA	0.853	0.917		0.926	Oct 2014	0.936	Oct 2015	-		0.936	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Licenses and Maintenance	C/CPAF	Northrop Grumman : AL, CO, VA	2.410	1.334		1.472	Oct 2014	1.573	Oct 2015	-		1.573	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Operational	C/CPAF	Online Subscriptions Services : AL, CO, VA	0.231	0.392		0.399	Oct 2014	0.408	Oct 2015	-		0.408	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Operational Support	C/FFP	NMR : AL, CO, VA	4.207	2.282		4.273	Oct 2014	3.866	Oct 2015	-		3.866	Continuing	Continuing	Continuing
Network and Infrastructure Services (Retitled: MDA Special Purpose Processing Node - PBR16) - Network and Infrastructure Services Advisory and Assistance Services	C/CPFF	Colsa : AL, CO, VA	0.897	0.621		-		-		-		-	Continuing	Continuing	Continuing
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	0.987	1.223		1.235	Oct 2014	1.271	Oct 2015	-		1.271	Continuing	Continuing	Continuing
Network and Infrastructure Services (Retitled: MDA Special Purpose Processing Node - PBR16) - Network and	C/CPAF	Northrop Grumman : AL, CO, VA	8.732	15.858		13.485	Oct 2014	13.275	Oct 2015	-		13.275	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD30 / *BMD Information Management Systems*	

Support ($ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Infrastructure Services Licenses															
Network and Infrastructure Services (Retitled: MDA Special Purpose Processing Node - PBR16) - Network and Infrastructure Services Operational Support	C/CPAF	Northrop Grumman : AL, CO, VA	8.413	8.624		16.893	Oct 2014	17.123	Oct 2015	-		17.123	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Advisory and Assistance Services	C/CPFF	Colsa : AL, CO, VA	0.905	0.621		4.544	Oct 2014	4.628	Oct 2015	-		4.628	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay : AL, CO, VA	0.853	0.917		0.926	Oct 2014	0.815	Oct 2015	-		0.815	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions IT Asset Management	C/CPAF	Northrop Grumman : AL, CO, VA	2.551	2.552		-		-		-		-	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions OMB,OSD, and DOD Compliance Monitoring and Reporting/Contract Deliverable	C/CPFF	Colsa : AL, CO, VA	0.261	0.249		0.293	Oct 2014	0.164	Oct 2015	-		0.164	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Operational Support	C/CPAF	Northrop Grumman : AL, CO, VA	4.117	3.890		7.366	Oct 2014	7.514	Oct 2015	-		7.514	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions	Allot	MDA Business Operations : AL, CO, VA	0.000	0.909		1.291	Oct 2014	1.570	Oct 2015	-		1.570	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
- MDA Agency Business Operations															
		Subtotal	82.677	79.572		95.197		95.710		-		95.710	-	-	-

Remarks
N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Remarks
N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Remarks
N/A

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	82.677	79.572		95.197		95.710		-		95.710	-	-	-

Remarks
N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

Significant Event Complete / Significant Event Planned — Milestone Decision Complete / Milestone Decision Planned — Element Test Complete / Element Test Planned — System Level Test Complete / System Level Test Planned — Complete Activity / Planned Activity

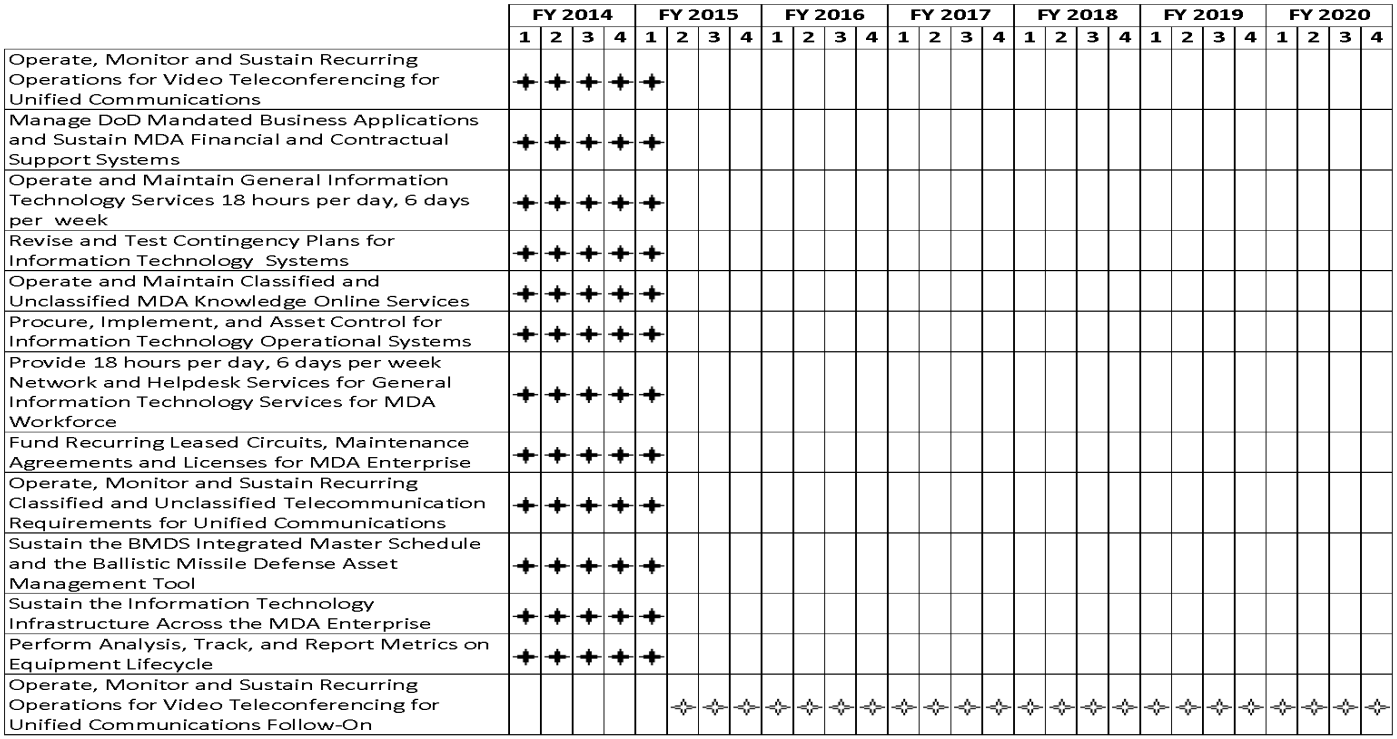


Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

Significant Event Complete ▲ Significant Event Planned △ Milestone Decision Complete ★ Milestone Decision Planned ☆ Element Test Complete ◆ Element Test Planned ◇ System Level Test Complete ⬢ System Level Test Planned ⬡ Complete Activity ✦ Planned Activity ✧

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
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						✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
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						✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - Follow-On						✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - Follow-On						✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - Follow-On						✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Sustain the Information Technology Infrastructure Across the MDA Enterprise - Follow-On						✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications	1	2014	1	2015
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems	1	2014	1	2015
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week	1	2014	1	2015
Revise and Test Contingency Plans for Information Technology Systems	1	2014	1	2015
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services	1	2014	1	2015
Procure, Implement, and Asset Control for Information Technology Operational Systems	1	2014	1	2015
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce	1	2014	1	2015
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise	1	2014	1	2015
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications	1	2014	1	2015
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool	1	2014	1	2015
Sustain the Information Technology Infrastructure Across the MDA Enterprise	1	2014	1	2015
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle	1	2014	1	2015
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications Follow-On	2	2015	4	2020
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - Follow-On	2	2015	4	2020
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - Follow-On	2	2015	4	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD30 / *BMD Information Management Systems*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Revise and Test Contingency Plans for Information Technology Systems - Follow-On	2	2015	4	2020
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - Follow-On	2	2015	4	2020
Procure, Implement, and Asset Control for Information Technology Operational Systems -Follow-On	2	2015	4	2020
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - Follow-On	2	2015	4	2020
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - Follow-On	2	2015	4	2020
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - Follow-On	2	2015	4	2020
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - Follow-On	2	2015	4	2020
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - Follow-On	2	2015	4	2020
Sustain the Information Technology Infrastructure Across the MDA Enterprise - Follow-On	2	2015	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency											Date: February 2015	
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*				Project (Number/Name) MC30 / *Cyber Operations*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
MC30: *Cyber Operations*	-	12.389	15.452	20.017	-	20.017	23.044	21.164	21.330	24.088	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Beginning in FY 2014, Information Assurance/Computer Network Defense content in Budget Project MD30 of Enabling Programs Element 0603890C moved to a new Cyber Operations Budget Project MC30 in Program Element 0603890C.

The increase from FY 2015 to FY 2016 is required to comply with expanding Presidential, Secretary of Defense, and U.S. Cyber Command DoD-wide Cybersecurity Initiatives, and the Federal Information Security Management Act (FISMA).

A. Mission Description and Budget Item Justification

Project MC30 Cyber Operations increased by $4.565 million between FY 2015 to FY 2016 to comply with expanding White House, Secretary of Defense, and U.S. Cyber Command DoD-wide Cybersecurity Initiatives, and the Federal Information Security Management Act (FISMA). White House Memorandum, “Near-Term Measures to Reduce the Risk of High-Impact Unauthorized Disclosures,” issued February11, 2014, requires DoD to implement an insider threat program, complete the issuance and use of Public Key Infrastructure credentials and Public Key enabling on the SIPRNET to enhance security enforcement of asset controls for sensitive information and reduce the risks associated with “privileged” users.

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 Designated Approving Authority (DAA) for MDA Administrative information technology systems. The project provides funds to 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

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MC30 / *Cyber Operations*

Manager/Information Assurance Manager (PM/IAM) Plan of Action and Milestones (POA&Ms) for the MDA mission, test and administrative systems. It maintains the Certification & Accreditation (C&A) data repository, capturing the DIACAP documentation (artifacts, validation results, and Information Assurance Risk Assessment results, and Designated Approving Authority (DAA) accreditation decisions) and POA&M on all MDA information systems. It supports 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 Senior Information Assurance Officer (SIAO)/Certification Authority (CA) and DAA. Independent Verification and Validation (IV&V) 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 (FISMA).

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 Ballistic Missile Defense System (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 Communications Security (COMSEC) related activities.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
Title: Information Assurance/Computer Network Defense (IA/CND)	12.389	15.452	20.017
Articles:	-	-	-
Description: Provides for the certification of Information Technology networks and systems, monitoring and computer emergency response services.			
FY 2014 Accomplishments: -Monitored and defended MDA mission, test, and administrative information systems 24 hours a day, 7 days a week, 365 days a year. -Collected, analyzed and reported vulnerability and cyber warfare attack metrics to the MDA Chief Information Officer (CIO), MDA leadership, and U.S. Cyber Command. -Ensured MDA mission, test, and administrative systems are operated securely in accordance with DoD Information Assurance Certification and Accreditation policies. -Implemented Information Assurance Vulnerability Assessments and Communication Tasking Orders remediation and patches. -Prepared and maintain current certification and accreditation documentation for general service networks reported to DoD and Office of Management and Budget. -Managed data-at-rest encryption to ensure compliance with Global Information Grid mandated policies.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MC30 / *Cyber Operations*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
-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. -Managed the Information Assurance Workforce Improvement Program to certify Information Assurance 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. -Completed DoD mandated annual Information Assurance user training for the MDA workforce. -Provided Information Assurance engineering and planning guidance and vulnerability assessment for all MDA Information Technology acquisition programs. -Funded MDA Chief Information Office (CIO) civilian salaries.			
FY 2015 Plans: -Monitor and defend MDA mission, test, and administrative information systems 24 hours a day, 7 days a week, 365 days a year. -Collect, analyze, and report vulnerability and cyber warfare attack metrics to the MDA Chief Information Officer (CIO), MDA leadership, and U.S. Cyber Command. -Ensure MDA mission, test, and administrative systems are operated securely in accordance with DoD Information Assurance Certification and Accreditation policies. -Implement Information Assurance Vulnerability Assessments and Communication Tasking Orders remediation and patches. -Prepare and maintain current certification and accreditation documentation for general service networks reported to DoD and Office of Management and Budget. -Manage data-at-rest encryption to ensure compliance with Global Information Grid mandated policies. -Revise and updated Information Assurance certification and accreditation packages for system level Ballistic Missile Defense Systems reported to DoD and Office of Management and Budget. -Manage the Information Assurance Workforce Improvement Program to certify Information Assurance 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. -Complete DoD mandated annual Information Assurance user training for the MDA workforce. -Provide Information Assurance engineering and planning guidance and vulnerability assessment for all MDA Information Technology acquisition programs. -Fund MDA Chief Information Office (CIO) civilian salaries.			
FY 2016 Plans: The increase of $4.565M between FY 2015 to FY 2016 to comply with expanding White House, Secretary of Defense, and U.S. Cyber Command DoD-wide Cybersecurity Initiatives, and the Federal Information Security Management Act (FISMA). The most significant includes: $2.500 million increase for the MDA Computer Emergency Response Team (MDA CERT) Tier II to monitor all MDA classified and unclassified networks			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MC30 / *Cyber Operations*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
$1.616 million increase to implement DoDI 8510.01 Risk Management Framework (RMF) controls $449 thousand increase to conduct quarterly audits of the Privileged User Management Program -Document and maintain Standard Operating Instructions/Procedures for consistent interface with the MDA BMDS Network Operations Support Center (BNOSC) and the BMDS elements. -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. -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. -Conduct RMF analysis and reporting for the BMDS such as evaluation of residual risk by incorporating current and proposed BMDS monitoring and mitigations. -Maintain a current Information Assurance risk and residual risk assessment of the BMDS. -Provide coordination on all IT projects and remote sites for Cybersecurity compliance. -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. -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. -Conduct penetration and application testing that looks for vulnerabilities and issues using a number of tactics, technical and procedures. -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. -Conduct vulnerability scanning of MDA network to assess risks to MDA data from inside and outside sources. -Conduct monthly information assurance vulnerability audits. -Issue and track implementation of Information Assurance Vulnerability Alerts (IAVA), Bulletins (IAVB) and Technical Advisories (IAVT). -Track ports, protocols, and services. -Perform network security monitoring of all MDA subscriber networks and enclaves. -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. -Develop and maintain the RMF package for the BMDS Mission System to support a full Authorization to Operation (ATO). -Compile and validate BMDS Mission Element-level certification and accreditation documents to include BMDS Element-level SIPs, DIPs, C&A Scorecards, POA&M artifacts (CVT reports IA Risk Assessments, Primary RMF artifacts). -Interface with Central Command (CENTCOM) to provide BMDS Mission RMF package. -Conduct an annual IA Security review of the BMDS in accordance with 8510.01 and provide an analysis of changes in IA posture.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MC30 / *Cyber Operations*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
-Manage the Information Assurance Workforce Improvement Program to certify Information Assurance 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. -Complete DoD mandated annual Information Assurance user training for the MDA workforce. -Manage data-at-rest encryption to ensure compliance with Global Information Grid mandated policies. -Collect, analyze, and report vulnerability and cyber warfare attack metrics to the MDA Chief Information Officer (CIO), MDA leadership, and U.S. Cyber Command. -Ensure MDA mission, test, and administrative systems are operated securely in accordance with DoD Information Assurance Certification and Accreditation policies. -Implement Information Assurance Vulnerability Assessments and Communication Tasking Orders remediation and patches. -Prepare and maintain current certification and accreditation documentation for general service networks reported to DoD and Office of Management and Budget. -Provide Information Assurance engineering and planning guidance and vulnerability assessment for all MDA Information Technology acquisition programs. -Fund MDA Chief Information Office (CIO) civilian salaries.			
Accomplishments/Planned Programs Subtotals	12.389	15.452	20.017

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MC30 / *Cyber Operations*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Information Assurance/ Computer Network Defense (IA/CND) - BMDS IA Advisory and Assistance Services	C/CPFF	Booz Allen Hamilton : AL, CO, VA	0.000	0.630		0.641	Oct 2014	1.308	Oct 2015	-		1.308	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/IA Advisory and Assistance Services	C/CPFF	Torch Technologies : AL, CO, VA	0.000	2.737		2.783	Oct 2014	2.529	Oct 2015	-		2.529	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	0.000	0.088		0.105	Oct 2014	0.104	Oct 2015	-		0.104	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/ IA Civilian pay/Travel/PCS	Allot	MDA Civilian Pay : AL, CO, VA	0.000	2.064		2.778	Oct 2014	2.809	Oct 2015	-		2.809	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/ IA Comsec	MIPR	NSA : AL, CO, VA	0.000	0.104		0.105	Oct 2014	0.108	Oct 2015	-		0.108	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/ IA Licenses	C/CPAF	Northrop Grumman : AL, CO, VA	0.000	-		-		2.516	Oct 2015	-		2.516	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/ IA Operational Support	C/FFP	Northrop Grumman : AL, CO, VA	0.000	6.691		9.040	Oct 2014	10.643	Oct 2015	-		10.643	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/ IA WCF	MIPR	DISA : AL, CO, VA	0.000	0.075		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	0.000	12.389		15.452		20.017		-		20.017	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MC30 / *Cyber Operations*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks N/A															

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	12.389		15.452		20.017		-		20.017	-	-	-

Remarks
N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MC30 / *Cyber Operations*

Significant Event Complete ▲ Significant Event Planned △ | Milestone Decision Complete ★ Milestone Decision Planned ☆ | Element Test Complete ◆ Element Test Planned ◇ | System Level Test Complete ⬢ System Level Test Planned ⬡ | Complete Activity ✦ Planned Activity ✧

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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	✦	✦	✦	✦	✦																							
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance	✦	✦	✦	✦	✦																							
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	✦	✦	✦	✦	✦																							
Complete Annual Information Assurance user Training for MDA Workforce	✦	✦	✦	✦	✦																							
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services	✦	✦	✦	✦	✦																							
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems	✦	✦	✦	✦	✦																							
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						✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MC30 / *Cyber Operations*

Significant Event Complete ▲ Significant Event Planned △ | Milestone Decision Complete ★ Milestone Decision Planned ☆ | Element Test Complete ◆ Element Test Planned ◇ | System Level Test Complete ⬢ System Level Test Planned ⬭ | Complete Activity ✦ Planned Activity ✧

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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 Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - Follow-On						✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
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						✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance - Follow-On						✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MC30 / *Cyber Operations*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command	1	2014	1	2015
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance	1	2014	1	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	2014	1	2015
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs	1	2014	1	2015
Complete Annual Information Assurance user Training for MDA Workforce	1	2014	1	2015
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services	1	2014	1	2015
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems	1	2014	1	2015
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - Follow-On	2	2015	4	2020
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	2	2015	4	2020
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - Follow-On	2	2015	4	2020
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - Follow-On	2	2015	4	2020
Complete Annual Information Assurance user Training for MDA Workforce - Follow-On	2	2015	4	2020
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - Follow-On	2	2015	4	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MC30 / *Cyber Operations*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance - Follow-On	2	2015	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD31 / *Modeling & Simulation*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MD31: *Modeling & Simulation*	245.823	36.388	41.957	43.668	-	43.668	45.989	48.495	48.953	50.782	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 Modeling and Simulation (M&S) Program is 1) to execute a single, integrated, and synchronized program to manage M&S development in support of MDA's Ballistic Missile Defense (BMDS) acquisition, 2) to support BMDS Flight and Ground Test execution, 3) to drive MDA test activities to collect data for use in anchoring 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 the Agency's Distributed BMDS real-time Hardware-in-the-Loop (HWIL) and digital M&S simulation capabilities as a single, integrated, and synchronized program.
MDA's M&S program is essential to ensuring missile defense capabilities are affordable and effective. Through the use of verified and validated models and accredited simulation systems, 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. 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 (COCOMs), 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 Operational Test Agency (OTA).

The M&S objective is to evolve the various systems and products to incrementally improve the fidelity of the Agency'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, North Atlantic Treaty Organization (NATO),

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

COCOMs, 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 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.

MDA's M&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 Hardware-in-the-Loop (HWIL) stakeholder applications, while the Digital Simulation Architecture (DSA) was used to support all Digital stakeholder applications. MDA established the requirements for the Objective Simulation Framework (OSF) to move towards a single simulation framework that can execute requirements to support all MDA M&S stakeholder applications: HWIL, Digital and hybrid configurations. OSF is being developed to allow seamless integration of Live, Virtual and Constructive simulations. It provides consistent truth stimuli in execution of all intended stakeholder applications. OSF will provide a composable simulation framework that promotes significant reuse of authoritative and community validated truth models and is extensible to facilitate integration of new models as they evolve. OSF provides threat scenarios and simulates all environments within which the BMDS operates to allow for assessment of the BMDS capabilities to support various agency objectives and decisions. In addition to supporting BMDS system assessments, OSF will support COCOMs 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 Operations and Tactics, Techniques and Procedures (TTPs).

The Core Truth Modeling program provides consistent and common Phenomenology, Lethality, and Environment models, and Threat capabilities for Agency M&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 vehicle (KV) (i.e. Ground-Based Interceptor, Standard Missile-3 (SM-3), Terminal High Altitude Area Defense (THAAD)) on reentry vehicles (RVs). Lethality results include percentage of destruction and 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.

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 United States, 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 IR plume) of both ballistic missiles and air breathing threats to drive the M&S tools of the missile defense community, and enable design, verification, and assessment of the BMDS and associated Components' concepts and requirements. Common threat data is used in various BMDS simulation events to prove the performance of the BMDS. These threat representations are derived from information provided by the Intelligence Community, as well as MDA's Adversary Capability Documents (ACDs) and Adversary Data Packages (ADPs).

MDA's M&S capabilities, systems and products are in use throughout the BMDS and provide the Warfighter and Operational Test Agencies (OTAs) the capability to evaluate both the BMDS and individual components. MDA works to validate and accredit system-level models and simulations by anchoring them to ground and flight test events to support accurate and comprehensive assessments of the BMDS. The success of the missile defense program is enabled by quality M&S systems and products that help to demonstrate how BMDS technologies work. In particular, MDA M&S system and product testing is based on an integrated, comprehensive, and phased test program as outlined in MDA's Integrated Master Test Plan (IMTP). Within the construct of the IMTP, MDA 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

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

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.

MDA's M&S program also supports Allied/Coalition Partner cooperative activities, real-world pre- and post-flight launch analyses, and the Israeli Cooperative Programs.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
Title: Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization	7.017	7.893	8.028
Articles:	-	-	-

Description: Modeling and Simulation (M&S) capability development executes an integrated, synchronized program to manage M&S development in support Ballistic Missile Defense System (BMDS) development, testing, and assessment.

FY 2014 Accomplishments:
- Produced capability documents and specifications for M&S product development to enable BMDS Hardware in the Loop (HWIL) Tests, Training events, Exercises, Wargames, performance assessments, and Element Integration.
- Implemented the Transition Plan to replace the Single Stimulation Framework (SSF) with an Objective Simulation Framework (OSF) to support M&S Intended Uses.
- Supported requests to export M&S software and technical data to nations or international organizations.
- Supported Technical Interchange Meetings (TIMs) and bilateral agreements with allies and partners.
- Supported continued M&S technical interchange with the Department of Defense of Australia under the Ballistic Missile Defense Modeling, Simulation and Analysis Project Arrangement.
- 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) Phase 2, Homeland Defense and Regional Phased Adaptive Approach).
- Updated and expanded the 170+ model capability descriptions in MDA`s M&S catalog.
- Maintained traceability between the M&S requirements database and M&S product development.

FY 2015 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 Ground Tests, Training events, Exercises, Wargames, Digital simulations, and Element Integration.
- Support requests to export M&S software to nations or international organizations.
- Support Technical Interchange Meetings (TIMs) and the Bilateral Activities via Secure Interactive Link (BASIL) Project Arrangement with the United Kingdom.
- Support continued M&S technical interchange with the Department of Defense of Australia under the Ballistic Missile Defense Modeling, Simulation and Analysis Project Arrangement.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Support 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). - Continue 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. ***FY 2016 Plans:*** FY 2016 increase maintains program at revised labor rates. - 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 (PAA) and Homeland Defense). - Continue the transition to replace the Single Stimulation Framework (SSF) with the Objective Simulation Framework (OSF) to support M&S Intended Uses.			
Title: M&S Digital Framework, Simulation, Models	10.390	10.943	11.716
Articles:	-	-	-
Description: The Modeling and Simulation (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 Ballistic Missile Defense System (BMDS) performance assessments, Warfighter events, and BMD International Simulation events. ***FY 2014 Accomplishments:*** Development and Sustainment: - Developed and sustained MDA's BMD International Simulation (I-SIM) in support of Combatant Commander (COCOM) and International Wargames, conceptual planning, BMD visualizations, BMD training/orientation, and M&S demonstrations. - Developed and sustained the Missile Defense Space Warning Tool (MDST) to keep pace with fielded BMDS OPIR architectures in support of Warfighter events. - Provided software development/sustainment support to the Extended Air Defense Simulation (EADSIM) code base for use in Warfighter exercises, training venues, and COCOM planning tools. - Provided software development/sustainment for BMDS component models of PATRIOT weapons system for use in MDA test and validation events. Maintenance: - Maintained Discrete Event Simulation (DESIM) in support of COCOM events.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
Event Integration/Support Operations: - Integrated, tested, functionally qualified and delivered legacy M&S tools for use in MDA test events and exercises, to include models for PATRIOT, SBIRS, JTAGS, communications. - Began the transition of real-time digital simulation capability to the Objective Simulation Framework (OSF) to support M&S Intended Uses. - Controlled and maintained simulations for Element M&S development laboratory use in the Digital M&S Integration Center (DMIC). - Provided digital representations for use during international simulations/wargames, demonstrations, and Missile Defense Space Warning Tool operations. - 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.			
FY 2015 Plans: Development and Sustainment: - Initiate the re-architecting of MDA's BMD International Simulation (I-SIM) to adapt to growing distributed event requirements in support of Combatant Command (COCOM) and International Wargames, conceptual planning, BMD visualizations, BMD training/ orientation, and M&S demonstrations. - Develop and sustain the Missile Defense Space Warning Tool (MDST) to keep pace with fielded BMDS OPIR Architectures in support of Warfighter events. - 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. - Provide Software development/sustainment for BMDS component models of PATRIOT weapon system for use in MDA test and validation events. Maintenance: - Replace Discrete Event Simulation (DESIM) with existing modernized M&S tools in support of COCOM events. Event Integration/Support Operations: - Integrate, test, functionally qualify, and deliver legacy M&S tools for use in MDA test events, Wargames, and exercises (includes models for PATRIOT, SBIRS, JTAGS, communications). - Continue the transition of real-time digital simulation capability to the Objective Simulation Framework (OSF) to support Intended Uses. - Control and maintain simulations for Element M&S development laboratory use in the Digital M&S Integration Center (DMIC) in Huntsville, AL.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Provide digital representations for use during International Simulations/Wargames and demonstrations as well as Missile Defense Space Warning Tool operations - Provide 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. - Perform operational planning for the FY 2016 BMDS assessment events. ***FY 2016 Plans:*** FY 2016 increase is due to additional demand for digital representations supporting simulations and real world events. Development and Sustainment: - 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&S demonstrations, and the Warfighter's Modification & Fielding Requirements List (MFRL). - Maintain the Missile Defense Space Warning Tool (MDST) to keep pace with fielded BMDS Overhead Persistent Infrared (OPIR) Architectures in support of Warfighter events. - 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. - Provide Software development/sustainment for BMDS component models of PATRIOT weapon system for use in MDA test and validation events. Event Integration/Support Operations: - Integrate, test, functionally qualify, and deliver M&S tools for use in MDA test events, Wargames, and exercises. - Continue the transition of real-time digital simulation capability to the Objective Simulation Framework (OSF) to support Intended Uses. - Control and maintain simulations for Element M&S development laboratory use in the Digital M&S Integration Center (DMIC) in Huntsville, AL. - Provide digital representations for use during International Simulations/Wargames and demonstrations, and exercise/training events. - 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. - Perform operational planning for the FY 2017 BMDS assessment events.			
Title: M&S HWIL Framework, Simulations, Models	9.231	12.633	13.341
Articles:	-	-	-
Description: The M&S Hardware-in-the-Loop (HWIL) Framework, Models and Simulations effort develops, maintains and deploys the HWIL framework hardware and software for use at element laboratories and Combatant Command (COCOM) locations			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
to support IMTP test events, Ballistic Missile Defense System (BMDS) capability delivery assessments, Warfighter training, exercises, and wargames. ***FY 2014 Accomplishments:*** - Provided support for scheduled Integrated Master Test Plan (IMTP) events Global Lightning 14, Terminal Fury 14, Vigilant Shield 14, Global Defender (GDEx06 Part 1), FTG-06b Countdown Exercise, FTG-06b HWIL System Pre-Mission Test (SPMT), GTI-04e Part 1a, and GTI-04e Part 2. - Delivered the Objective Simulation Framework (OSF) Version 1.0 to begin the transition of Hardware-in-the-loop (HWIL) capabilities. - Delivered improved debris and phenomenology modeling capabilities to support BMDS Phased Adaptive Approach (PAA) Phase 3 and beyond needs. - Incorporated advanced M&S capabilities into OSF and SSF for tracking, discrimination, engagement and associated upper tier debris mitigation, launch/engage on remote, as well as lower tier engagement coordination to satisfy PAA Phase 3 and beyond needs. - Controlled and maintained the HWIL BMDS Integration and Development (BID) Laboratory for Element M&S. ***FY 2015 Plans:*** - Deliver the Objective Simulation Framework (OSF) to complete the transition of Hardware-in-the-loop (HWIL) capabilities. - Incorporate 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. - Control and maintain the HWIL Integration Laboratory for Element M&S in Huntsville, AL. - Provide support for scheduled events including Wargames and COCOM Exercises and the Distributed, Focused and Integrated Ground Test Events as presented in the Integrated Master Test Plan (IMTP). - Develop, maintain, test, field, and operate model representations for use in Ground Tests. FY 2015 increase reflects reprioritization of M&S efforts to achieve M&S Hardware-in-the-Loop (HWIL) requirements. ***FY 2016 Plans:*** FY 2016 increase supports implementation of additional digital requirements into HWIL framework. - 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 Modeling and Simulation 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.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Control and maintain the Modeling and Simulation (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. - Develop plans, procedures and documentation for scheduled events including Wargames and COCOM Exercises and the Distributed, Focused and Integrated Hardware-In-the-Loop Events as presented in the Integrated Master Test Plan (IMTP). Provide event architecture integration and checkout of Wargames for these same scheduled events. - Develop, maintain, test, field, and operate model representations for use in events and other MDA M&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.			
Title: M&S Core Truth Modeling	9.750	10.488	10.583
Articles:	-	-	-
Description: The Core Truth Model program provides consistent and common Phenomenology, Lethality, Environment, Communications, and Threat models for Ballistic Missile Defense Systems (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 2014 Accomplishments: -Implemented 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) Phase 3 and beyond. -Maintained legacy truth representations (e.g., Parametric Endoatmospheric-Exoatmospheric Lethality Simulation (PEELS), Kinetic Intercept Debris Distribution (KIDD), Optical Signatures Code/Optical Signature Inline Generator (OSC/OPTISIG)). -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 functions into Objective Simulation Framework (OSF) framework. -Provided support for scheduled events Global Lightning 14, Terminal Fury 14, Vigilant Shield 14, Global Defender (GDEx06 Part 1), and the Distributed, Focused and Integrated Ground Test Events as presented in the IMTP.			
FY 2015 Plans: -Implement 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).			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
-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, system-level events, and 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 functions into Objective Simulation Framework (OSF) framework. -Provide support for scheduled events including Wargames, Exercises, and the Distributed, Focused and Integrated Ground Test Events as presented in the IMTP. - Deliver Core Truth Models (CTM) Toolkit for integrated truth representations across the M&S enterprise.			
FY 2016 Plans: FY 2016 increase maintains program at revised labor rates. - 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 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 Core Truth Models (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.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- 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. - Continue generating CTM Sensitivity analysis to identify the sensitivity within system simulation of CTM models and boundary. - Continue development of CTM design to support system and element level simulations.			
Accomplishments/Planned Programs Subtotals	36.388	41.957	43.668

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 0603881C: *Ballistic Missile Defense Terminal Defense Segment*	251.899	163.892	228.021	-	228.021	230.306	257.014	218.533	247.707	Continuing	Continuing
• 0603882C: *Ballistic Missile Defense Midcourse Defense Segment*	1,064.445	873.923	1,284.891	-	1,284.891	936.425	803.392	903.539	912.890	Continuing	Continuing
• 0603892C: *AEGIS BMD*	885.704	764.224	843.355	-	843.355	762.740	748.354	564.827	579.585	Continuing	Continuing
• 0603914C: *Ballistic Missile Defense Test*	342.695	366.302	274.323	-	274.323	298.390	345.333	330.404	350.747	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Modeling & Simulation (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 Hardware-in-the-Loop (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 Federally Funded Research and Development Centers (FFRDCs) and University Affiliated Research Centers (UARCs).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD31 / *Modeling & Simulation*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - FFRDC & UARC	MIPR	Various : CO, AL	0.000	-		1.690	Oct 2014	1.724	Nov 2015	-		1.724	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - M&S Reqts & Design- Configuration & Risk Management	C/FFP	ManTech : CO	6.009	-		-		-		-		-	-	6.009	-
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - M&S Reqts & Design- Integrated Master Plan	C/FFP	ManTech : CO	3.879	-		-		-		-		-	-	3.879	-
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - M&S Reqts & Design- Product Capability Documents	C/FFP	Boeing : AL	17.471	-		-		-		-		-	-	17.471	-
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - Requirements & Design - CSS	C/CPAF	Northrop Grumman : CO	3.274	3.158		-		-		-		-	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - Requirements & Design - CSS 2	C/CPFF	Sparta : CO	0.000	-		5.135	Oct 2014	5.294	Nov 2015	-		5.294	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Requirements,	MIPR	SMDC : AL	0.000	-		0.476	Oct 2014	0.486	Nov 2015	-		0.486	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD31 / *Modeling & Simulation*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Design Spt, Scenario Optimization - Requirements & Design - OGA															
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - Requirements & Design Support	Various	MDA : CO, AL	1.802	1.926		0.592	Oct 2014	0.524	Oct 2015	-		0.524	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - Requirements & Scenario Design Support - OGA	MIPR	AMRDEC : AL	0.000	1.933		-		-		-		-	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - Digital Framework Development	C/CPAF	Northrop Grumman : CO	0.000	5.744		4.957	Oct 2014	5.167	Oct 2015	-		5.167	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - Digital Simulation Development / Support	MIPR	SMDC : AL	0.000	1.750		1.200	Oct 2014	1.024	Oct 2015	-		1.024	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - M&S / Digital Framework Support	Various	MDA : CO, AL	0.000	0.506		0.525	Oct 2014	0.551	Oct 2015	-		0.551	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - M&S / Digital Framework Support - OGA	MIPR	AMRDEC : AL	0.000	2.390		4.261	Oct 2014	4.974	Oct 2015	-		4.974	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - M&S Digital Framework - Integrated Capability for International Programs	C/CPAF	Northrop Grumman : CO	40.919	-		-		-		-		-	-	40.919	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD31 / *Modeling & Simulation*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
M&S Digital Framework, Simulation, Models - M&S Digital Framework - Integrated Capability for Performance Assessment	C/CPAF	Northrop Grumman : CO	52.964	-		-		-		-		-	-	52.964	-
M&S HWIL Framework, Simulations, Models - M&S HWIL - Industry	C/CPAF	Northrop : CO	2.608	-		-		3.162	Oct 2015	-		3.162	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models - M&S HWIL - Single Stimulation Framework & Objective Simulation Framework Product Development & Deployment	C/CPAF	Boeing : AL	53.419	-		-		-		-		-	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models - M&S HWIL Framework Development and Support	C/CPFF	Teledyne Brown Engineering : AL, CO	0.000	6.315		4.742	Oct 2014	3.928	Oct 2015	-		3.928	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models - M&S HWIL Simulations / Models Development	MIPR	AMRDEC : AL	6.733	2.316		6.754	Oct 2014	5.090	Oct 2015	-		5.090	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models - M&S HWIL Support	Various	MDA : AL, CO	0.000	0.600		1.137	Oct 2014	1.161	Oct 2015	-		1.161	Continuing	Continuing	Continuing
M&S Core Truth Modeling - Core Truth Models Validation	Various	MDA : CO, AL	2.635	1.154		1.281	Oct 2014	1.310	Oct 2015	-		1.310	Continuing	Continuing	Continuing
M&S Core Truth Modeling - M&S Core Truth Modeling - Communication Network Model Development	C/CPAF	Northrop Grumman : CO	2.725	-		-		-		-		-	-	2.725	-
M&S Core Truth Modeling - M&S Core Truth	MIPR	AMRDEC : AL	24.497	1.559		2.504	Oct 2014	2.537	Oct 2015	-		2.537	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD31 / *Modeling & Simulation*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Modeling - Lethality/ Phenomenology Modeling															
M&S Core Truth Modeling - M&S Core Truth Modeling - PLET-C Integration, Assembly, Test & Checkout	C/CPAF	Northrop Grumman : CO	3.808	-		-		-		-		-	-	3.808	-
M&S Core Truth Modeling - M&S Core Truth Modeling - Trajectory Generator External	C/CPAF	Northrop Grumman : CO	8.742	-		-		-		-		-	-	8.742	-
M&S Core Truth Modeling - M&S Core Truth Modeling Simulation System	C/CPAF	Northrop Grumman : CO	14.338	7.037		6.703	Oct 2014	6.736	Oct 2015	-		6.736	Continuing	Continuing	Continuing
		Subtotal	245.823	36.388		41.957		43.668		-		43.668	-	-	-

Remarks

N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Remarks

N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD31 / *Modeling & Simulation*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Remarks

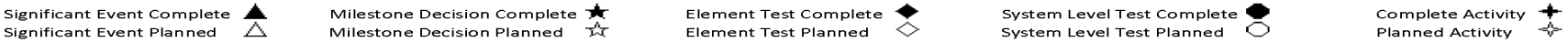
N/A

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	245.823	36.388		41.957		43.668		-		43.668	-	-	-

Remarks

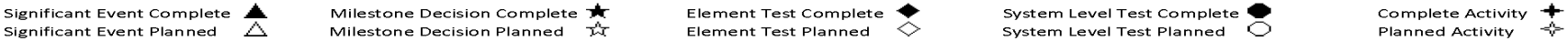
Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*



	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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 14) 1Q-FY 2014	▲																											
International Simulation v8.1 1Q-FY 2014	▲																											
Ground Test, Integrated 04e Part 1a 1Q-FY 2014	▲																											
Combatant Command Exercise (Global Thunder 14) 1Q-FY 2014	▲																											
Missile Defense Space warning Tool (MDST) v15 System Reqts Review 1Q-FY 2014	▲																											
Ronald Reagan Forum Wargame 2Q-FY 2014		▲																										
Congressional Wargame 2Q-FY 2014		▲																										
Warfighter Trial Period -04e (WFTP-04e) 2Q-FY 2014		▲																										
Combatant Command Exercise (Global Lightning 14) 3Q-FY 2014			▲																									
Combatant Command Exercise (Terminal Fury 14) 3Q-FY 2014			▲																									
Ground Test, Integrated 04e Part 2			▲																									
FTG-06b Countdown Exercise			▲																									
FTG-06b HWIL System Pre-Mission Test (SPMT)			▲																									
Objective Simulation Framework (OSF) v1.0.2 4Q-FY 2014				▲																								
Single Stimulation Framework (SSF) v1.1.7 4Q-FY 2014				▲																								
Combatant Command Exercise (Vigilant Shield / Global Thunder 15) 1Q-FY 2015					▲																							
International Simulation v.8.2 – 1Q-FY 2015					▲																							
Multi-National Missile Defense Conference Seminar 1Q-FY 2015					▲																							
Missile Defense Space warning Tool (MDST) v16 - 1Q-FY 2015					▲																							
GTD-04e Part 2 (BMDS Ground Test) M&S Test Integration					▲																							
BMDS Wargame 2015 2Q-FY 2015						△																						

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*



	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Objective Simulation Framework (OSF) v1.0.3 - 2Q-FY 2015						△																						
Ronald Reagan Forum Wargame 2Q-FY 2015						△																						
FTO-02 Event 1 - HWIL SPMT						△																						
FTO-02 Event 2 - HWIL SPMT						△																						
FTO-02 E1 (OTA Intercept Flight Test)							△																					
Global Response (GREx06 Part 2) 3Q-FY 2015							△																					
Key Resolve 15 Combatant Command Exercise							△																					
Combatant Command Exercise (Global Lightning 15) 3Q-FY 2015							△																					
CTV-02 HWIL System Pre-Mission Test (SPMT)							△																					
GTI-06 Part 1 (BMDS Ground Test)							✧																					
FTO-02 Event 2 Countdown Exercise								△																				
Objective Simulation Framework (OSF) v1.0.4 - 1Q-FY 2016									△																			
International Simulation v.8.3 – 1Q-FY 2016									△																			
Ground Test, Distributed 06 Part 3 (GTD-06 Part 3) Operational Test 1Q-FY 2016									△																			
Missile Defense Space warning Tool (MDST) v16.1 - 1Q-FY 2016									△																			
VIGILANT SHIELD 16 Exercise Event - 2016									△																			
GLOBAL THUNDER 16 Exercise Event - 2016									△																			
GM CTV-02+ (GM Intercept Flight Test) Countdown Exercise									△																			
GM CTV-02+ (GM Flight Test)									△																			
Flight Test, Operational (FTO) 02 E1 HWIL System Post Flight Reconstruction (SPFR)									△																			
Flight Test, Operational (FTO) 02 E2 HWIL System Post Flight Reconstruction (SPFR)										△																		
Combatant Command Exercise (Keen Edge 16)										△																		
GM CTV-02+ (GM Intercept Flight Test) HWIL System Post Flight Reconstruction (SPFR)										△																		
FTG-15 (GM Intercept Flight Test) HWIL System Pre-Mission Test (SPMT)										△																		
GLOBAL LIGHTNING 16 Exercise Event - 2016										✧	✧																	

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

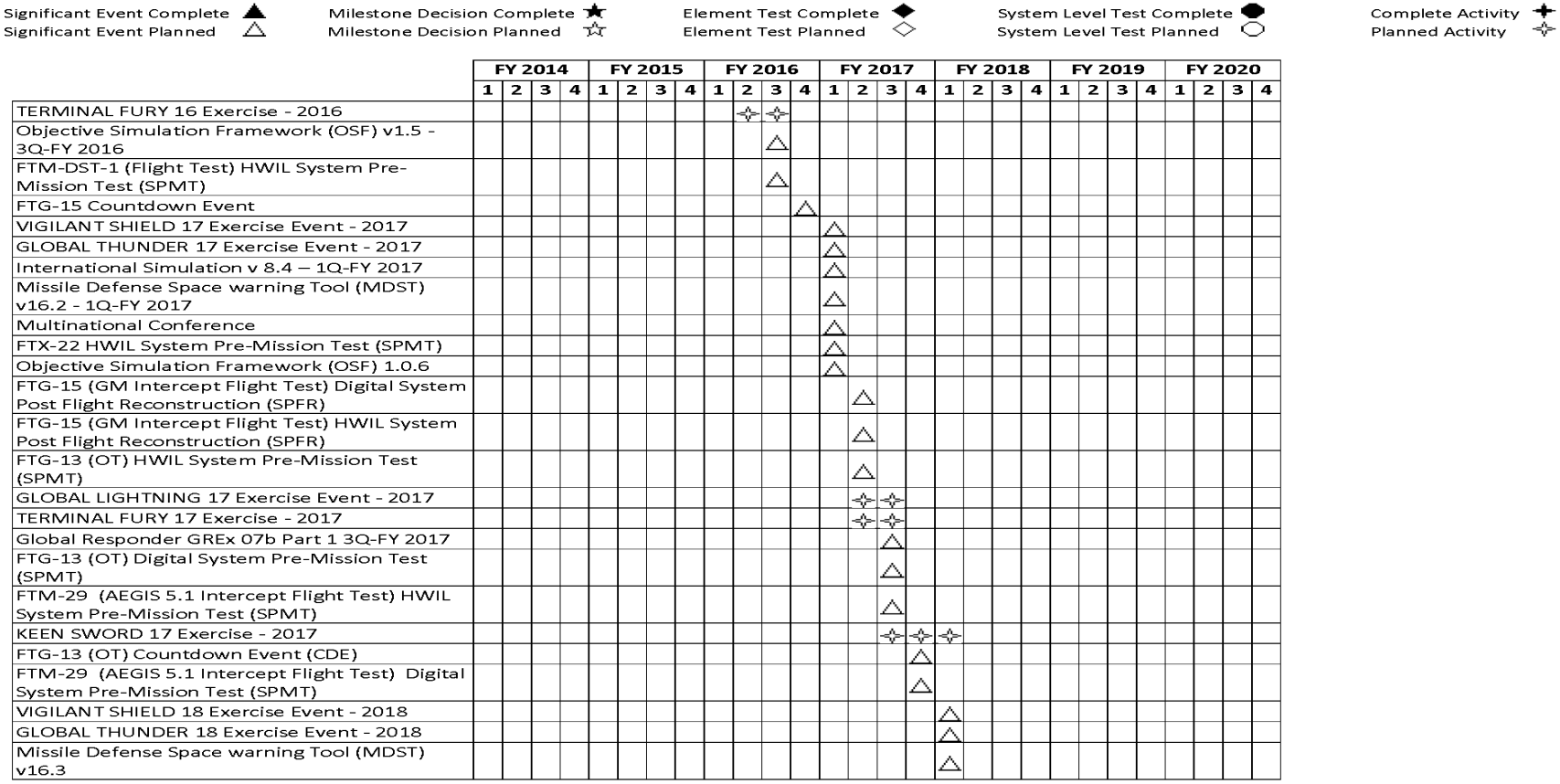


Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

Significant Event Complete ▲ Significant Event Planned △ | Milestone Decision Complete ★ Milestone Decision Planned ☆ | Element Test Complete ◆ Element Test Planned ◇ | System Level Test Complete ⬢ System Level Test Planned ⬭ | Complete Activity ✦ Planned Activity ✧

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
International Simulation v8.5																	△											
Flight Test, Operational (FTO) 03 E1 HWIL System Pre-Mission Test (SPMT)																	△											
FTM-DST-2 (Flight Test) HWIL System Pre-Mission Test (SPMT)																	△											
FTG-13 (OT) Digital System Post Flight Reconstruction (SPFR)																		△										
FTG-13 (OT) HWIL System Post Flight Reconstruction (SPFR)																		△										
Flight Test, Operational (FTO) 03 E1 Digital System Pre-Mission Test (SPMT)																		△										
Flight Test, Operational (FTO) 03 E2 HWIL System Pre-Mission Test (SPMT)																		△										
GLOBAL LIGHTNING 18 Exercise Event - 2018																		✧	✧									
TERMINAL FURY 18 Exercise - 2018																		✧	✧									
FTM-29 (AEGIS 5.1 Intercept Flight Test) Digital System Post Flight Reconstruction (SPFR)																			△									
FTM-29 (AEGIS 5.1 Intercept Flight Test) HWIL System Post Flight Reconstruction (SPFR)																			△									
Flight Test, Operational (FTO) 03 E2 Digital System Pre-Mission Test (SPMT)																			△									
Objective Simulation Framework v1.x																			△									
Performance Assessment (PA07b OT) 4Q-FY 2018																				△								
VIGILANT SHIELD 19 Exercise Event - 2019																					△							
GLOBAL THUNDER 19 Exercise Event - 2019																					△							
International Simulation v8.6																					△							
Objective Simulation Framework v1.x (2019 update 1)																					△							
Flight Test, Operational (FTO) 03 E1 Digital System Post Flight Reconstruction (SPFR)																					△							
Flight Test, Operational (FTO) 03 E1 HWIL System Post Flight Reconstruction (SPFR)																					△							
FTG-17 (GM Intercept Flight Test) HWIL System Pre-Mission Test (SPMT)																					△							

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

Significant Event Complete ▲ Significant Event Planned △ | Milestone Decision Complete ★ Milestone Decision Planned ☆ | Element Test Complete ◆ Element Test Planned ◇ | System Level Test Complete ⬢ System Level Test Planned ⬭ | Complete Activity ✦ Planned Activity ✧

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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 Post Flight Reconstruction (SPFR)																						△						
Flight Test, Operational (FTO) 03 E2 Digital System Post Flight Reconstruction (SPFR)																						△						
FTG-17 (GM Intercept Flight Test) Digital System Pre-Mission Test (SPMT)																						△						
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)																						△						
Global Responder GREx 08 Part 1 3Q-FY 2019																							△					
GLOBAL LIGHTNING 19 Exercise Event - 2019																						✧	✧					
TERMINAL FURY 19 Exercise - 2019																						✧	✧					
FTM-35 (AEGIS 5.1 Intercept Flight Test) Digital System Pre-Mission Test (SPMT)																							△					
FTT-19 (TH Intercept Flight Test) Digital System Pre-Mission Test (SPMT)																							△					
Objective Simulation Framework v1.x (FY 2019 update 2)																							△					
Objective Simulation Framework v1.x (FY 2020 update 1)																									△			
International Simulation v8.7																									△			
FTG-17 (GM Intercept Flight Test) Digital System Post Flight Reconstruction (SPFR)																									△			
FTG-17 (GM Intercept Flight Test) HWIL System Post Flight Reconstruction (SPFR)																									△			
FTG-11 (GM Intercept Flight Test) HWIL System Pre-Mission Test (SPMT)																									△			
FTX-26 (SN Target Only Flight Test) HWIL System Pre-Mission Test (SPMT)																									△			
VIGILANT SHIELD 20 Exercise Event - 2020																									△			
GLOBAL THUNDER 20 Exercise Event - 2020																									△			
FTT-19 (TH Intercept Flight Test) Digital System Post Flight Reconstruction (SPFR)																										△		
FTG-11 (GM Intercept Flight Test) Digital System Pre-Mission Test (SPMT)																										△		

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

Significant Event Complete ▲ Significant Event Planned △ | Milestone Decision Complete ★ Milestone Decision Planned ☆ | Element Test Complete ◆ Element Test Planned ◇ | System Level Test Complete ⬢ System Level Test Planned ⬭ | Complete Activity ✦ Planned Activity ✧

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
FTX-26 (SN Target Only Flight Test) Digital System Pre-Mission Test (SPMT)																										△		
FTT-19 (TH Intercept Flight Test) HWIL System Post Flight Reconstruction (SPFR)																										△		
FTG-11 (GM Intercept Flight Test) Countdown Exercise																											△	
GLOBAL LIGHTNING 20 Exercise Event - 2020																										✧	✧	
TERMINAL FURY 20 Exercise - 2020																										✧	✧	

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Combatant Command Exercise (Vigilant Shield 14) 1Q-FY 2014	1	2014	1	2014
International Simulation v8.1 1Q-FY 2014	1	2014	1	2014
Ground Test, Integrated 04e Part 1a 1Q-FY 2014	1	2014	1	2014
Combatant Command Exercise (Global Thunder 14) 1Q-FY 2014	1	2014	1	2014
Missile Defense Space warning Tool (MDST) v15 System Reqts Review 1Q-FY 2014	1	2014	1	2014
Ronald Reagan Forum Wargame 2Q-FY 2014	2	2014	2	2014
Congressional Wargame 2Q-FY 2014	2	2014	2	2014
Warfighter Trial Period -04e (WFTP-04e) 2Q-FY 2014	2	2014	2	2014
Combatant Command Exercise (Global Lightning 14) 3Q-FY 2014	3	2014	3	2014
Combatant Command Exercise (Terminal Fury 14) 3Q-FY 2014	3	2014	3	2014
Ground Test, Integrated 04e Part 2	3	2014	3	2014
FTG-06b Countdown Exercise	3	2014	3	2014
FTG-06b HWIL System Pre-Mission Test (SPMT)	3	2014	3	2014
Objective Simulation Framework (OSF) v1.0.2 4Q-FY 2014	4	2014	4	2014
Single Stimulation Framework (SSF) v1.1.7 4Q-FY 2014	4	2014	4	2014
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
Multi-National Missile Defense Conference Seminar 1Q-FY 2015	1	2015	1	2015
Missile Defense Space warning Tool (MDST) v16 - 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
Objective Simulation Framework (OSF) v1.0.3 - 2Q-FY 2015	2	2015	2	2015
Ronald Reagan Forum Wargame 2Q-FY 2015	2	2015	2	2015

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
FTO-02 Event 1 - HWIL SPMT	2	2015	2	2015
FTO-02 Event 2 - HWIL SPMT	2	2015	2	2015
FTO-02 E1 (OTA Intercept Flight Test)	3	2015	3	2015
Global Response (GREx06 Part 2) 3Q-FY 2015	3	2015	3	2015
Key Resolve 15 Combatant Command Exercise	3	2015	3	2015
Combatant Command Exercise (Global Lightning 15) 3Q-FY 2015	3	2015	3	2015
CTV-02 HWIL System Pre-Mission Test (SPMT)	3	2015	3	2015
GTI-06 Part 1 (BMDS Ground Test)	3	2015	3	2015
FTO-02 Event 2 Countdown Exercise	4	2015	4	2015
Objective Simulation Framework (OSF) v1.0.4 - 1Q-FY 2016	1	2016	1	2016
International Simulation v.8.3 – 1Q-FY 2016	1	2016	1	2016
Ground Test, Distributed 06 Part 3 (GTD-06 Part 3) Operational Test 1Q-FY 2016	1	2016	1	2016
Missile Defense Space warning Tool (MDST) v16.1 - 1Q-FY 2016	1	2016	1	2016
VIGILANT SHIELD 16 Exercise Event - 2016	1	2016	1	2016
GLOBAL THUNDER 16 Exercise Event - 2016	1	2016	1	2016
GM CTV-02+ (GM Intercept Flight Test) Countdown Exercise	1	2016	1	2016
GM CTV-02+ (GM Flight Test)	1	2016	1	2016
Flight Test, Operational (FTO) 02 E1 HWIL System Post Flight Reconstruction (SPFR)	1	2016	1	2016
Flight Test, Operational (FTO) 02 E2 HWIL System Post Flight Reconstruction (SPFR)	2	2016	2	2016
Combatant Command Exercise (Keen Edge 16)	2	2016	2	2016
GM CTV-02+ (GM Intercept Flight Test) 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
GLOBAL LIGHTNING 16 Exercise Event - 2016	2	2016	3	2016
TERMINAL FURY 16 Exercise - 2016	2	2016	3	2016
Objective Simulation Framework (OSF) v1.5 - 3Q-FY 2016	3	2016	3	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
FTM-DST-1 (Flight Test) HWIL System Pre-Mission Test (SPMT)	3	2016	3	2016
FTG-15 Countdown Event	4	2016	4	2016
VIGILANT SHIELD 17 Exercise Event - 2017	1	2017	1	2017
GLOBAL THUNDER 17 Exercise Event - 2017	1	2017	1	2017
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
Multinational Conference	1	2017	1	2017
FTX-22 HWIL System Pre-Mission Test (SPMT)	1	2017	1	2017
Objective Simulation Framework (OSF) 1.0.6	1	2017	1	2017
FTG-15 (GM Intercept Flight Test) Digital System Post Flight Reconstruction (SPFR)	2	2017	2	2017
FTG-15 (GM Intercept Flight Test) HWIL System Post Flight Reconstruction (SPFR)	2	2017	2	2017
FTG-13 (OT) HWIL System Pre-Mission Test (SPMT)	2	2017	2	2017
GLOBAL LIGHTNING 17 Exercise Event - 2017	2	2017	3	2017
TERMINAL FURY 17 Exercise - 2017	2	2017	3	2017
Global Responder GREx 07b Part 1 3Q-FY 2017	3	2017	3	2017
FTG-13 (OT) Digital System Pre-Mission Test (SPMT)	3	2017	3	2017
FTM-29 (AEGIS 5.1 Intercept Flight Test) HWIL System Pre-Mission Test (SPMT)	3	2017	3	2017
KEEN SWORD 17 Exercise - 2017	3	2017	1	2018
FTG-13 (OT) Countdown Event (CDE)	4	2017	4	2017
FTM-29 (AEGIS 5.1 Intercept Flight Test) Digital System Pre-Mission Test (SPMT)	4	2017	4	2017
VIGILANT SHIELD 18 Exercise Event - 2018	1	2018	1	2018
GLOBAL THUNDER 18 Exercise Event - 2018	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
FTM-DST-2 (Flight Test) HWIL System Pre-Mission Test (SPMT)	1	2018	1	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
FTG-13 (OT) Digital System Post Flight Reconstruction (SPFR)	2	2018	2	2018
FTG-13 (OT) HWIL System Post Flight Reconstruction (SPFR)	2	2018	2	2018
Flight Test, Operational (FTO) 03 E1 Digital System Pre-Mission Test (SPMT)	2	2018	2	2018
Flight Test, Operational (FTO) 03 E2 HWIL System Pre-Mission Test (SPMT)	2	2018	2	2018
GLOBAL LIGHTNING 18 Exercise Event - 2018	2	2018	3	2018
TERMINAL FURY 18 Exercise - 2018	2	2018	3	2018
FTM-29 (AEGIS 5.1 Intercept Flight Test) Digital System Post Flight Reconstruction (SPFR)	3	2018	3	2018
FTM-29 (AEGIS 5.1 Intercept Flight Test) HWIL System Post Flight Reconstruction (SPFR)	3	2018	3	2018
Flight Test, Operational (FTO) 03 E2 Digital System Pre-Mission Test (SPMT)	3	2018	3	2018
Objective Simulation Framework v1.x	3	2018	3	2018
Performance Assessment (PA07b OT) 4Q-FY 2018	4	2018	4	2018
VIGILANT SHIELD 19 Exercise Event - 2019	1	2019	1	2019
GLOBAL THUNDER 19 Exercise Event - 2019	1	2019	1	2019
International Simulation v8.6	1	2019	1	2019
Objective Simulation Framework v1.x (2019 update 1)	1	2019	1	2019
Flight Test, Operational (FTO) 03 E1 Digital System Post Flight Reconstruction (SPFR)	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
Flight Test, Operational (FTO) 03 E2 HWIL System Post Flight Reconstruction (SPFR)	2	2019	2	2019
Flight Test, Operational (FTO) 03 E2 Digital System Post Flight Reconstruction (SPFR)	2	2019	2	2019
FTG-17 (GM Intercept Flight Test) Digital System Pre-Mission Test (SPMT)	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
Global Responder GREx 08 Part 1 3Q-FY 2019	3	2019	3	2019
GLOBAL LIGHTNING 19 Exercise Event - 2019	2	2019	3	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD31 / *Modeling & Simulation*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
TERMINAL FURY 19 Exercise - 2019	2	2019	3	2019
FTM-35 (AEGIS 5.1 Intercept Flight Test) Digital System Pre-Mission Test (SPMT)	3	2019	3	2019
FTT-19 (TH Intercept Flight Test) Digital System Pre-Mission Test (SPMT)	3	2019	3	2019
Objective Simulation Framework v1.x (FY 2019 update 2)	3	2019	3	2019
Objective Simulation Framework v1.x (FY 2020 update 1)	1	2020	1	2020
International Simulation v8.7	1	2020	1	2020
FTG-17 (GM Intercept Flight Test) Digital System Post Flight Reconstruction (SPFR)	1	2020	1	2020
FTG-17 (GM Intercept Flight Test) HWIL System Post Flight Reconstruction (SPFR)	1	2020	1	2020
FTG-11 (GM Intercept Flight Test) HWIL System Pre-Mission Test (SPMT)	1	2020	1	2020
FTX-26 (SN Target Only Flight Test) HWIL System Pre-Mission Test (SPMT)	1	2020	1	2020
VIGILANT SHIELD 20 Exercise Event - 2020	1	2020	1	2020
GLOBAL THUNDER 20 Exercise Event - 2020	1	2020	1	2020
FTT-19 (TH Intercept Flight Test) Digital System Post Flight Reconstruction (SPFR)	2	2020	2	2020
FTG-11 (GM Intercept Flight Test) Digital System Pre-Mission Test (SPMT)	2	2020	2	2020
FTX-26 (SN Target Only Flight Test) Digital System Pre-Mission Test (SPMT)	2	2020	2	2020
FTT-19 (TH Intercept Flight Test) HWIL System Post Flight Reconstruction (SPFR)	2	2020	2	2020
FTG-11 (GM Intercept Flight Test) Countdown Exercise	3	2020	3	2020
GLOBAL LIGHTNING 20 Exercise Event - 2020	2	2020	3	2020
TERMINAL FURY 20 Exercise - 2020	2	2020	3	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MC31 / *M&S Cyber Operations*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MC31: *M&S Cyber Operations*	-	-	0.223	0.225	-	0.225	0.227	0.233	0.235	0.244	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 Missile Defense Agency (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 (POA&Ms) 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 POA&M on all M&S information systems.

This project supports the monitoring and tracking of Cybersecurity mitigations detailed in Information Technology security POA&Ms. 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 (IV&V) 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 (FISMA).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
Title: Network / System Certification and Accreditation (C&A) for Modeling & Simulation (M&S)	-	0.223	0.225
Articles:	-	-	-
Description: See Mission Description Above.			
FY 2014 Accomplishments: N/A			
FY 2015 Plans: - Conduct Cybersecurity/information assurance engineering and architecture planning for Enabling M&S information technology systems. - Plan and test the information assurance controls for Enabling M&S systems.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MC31 / *M&S Cyber Operations*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
- Develop Enabling M&S DoD Information Assurance Certification and Accreditation Program (DIACAP) certification and accreditation packages. - Conduct Controls Validation Testing (CVT) of Enabling M&S systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies. - Conduct annual information assurance reviews to assess compliance in implementing and maintaining information assurance controls. ***FY 2016 Plans:*** - Conduct Cybersecurity/information assurance engineering and architecture planning for M&S information technology systems. - Plan and test the information assurance controls for M&S systems. - Develop M&S DoD Information Assurance Certification and Accreditation Program (DIACAP) certification and accreditation packages. - Conduct Controls Validation Testing (CVT) of M&S systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies. - Conduct annual information assurance reviews to assess compliance in implementing and maintaining information assurance controls.			
Accomplishments/Planned Programs Subtotals	-	0.223	0.225

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MC31 / *M&S Cyber Operations*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) for Modeling & Simulation (M&S) - CSS	C/CPFF	Torch Technologies : CO, AL	0.000	-		0.223	Nov 2014	0.225	Nov 2015	-		0.225	Continuing	Continuing	Continuing
		Subtotal	0.000	-		0.223		0.225		-		0.225	-	-	-

Remarks

N/A

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.223		0.225		-		0.225	-	-	-

Remarks

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MC31 / *M&S Cyber Operations*

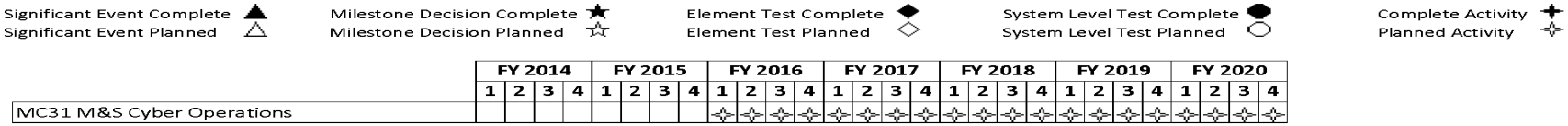


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MC31 / *M&S Cyber Operations*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MC31 M&S Cyber Operations	1	2016	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD32 / *Quality, Safety, and Mission Assurance*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MD32: *Quality, Safety, and Mission Assurance*	122.042	25.982	30.637	29.986	-	29.986	30.294	30.291	30.607	31.756	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

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. Provide quality on-site formal inspection and resolution when troubled suppliers are identified. Initiate and lead on-site Joint Government and Industry Team field support and expertise to assist when critical sole source suppliers are failing. Team 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. Maintains MDA Assurance Provisions for the Agency.

Safety:
Responsible for system safety of the Ballistic Missile Defense System (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. Also responsible for ensuring the overall safety of the civilian, contractor and military workforce. BMDS Safety Officers (BSO) provides 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 Missile Defense Agency (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

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD32 / *Quality, Safety, and Mission Assurance*

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.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
Title: Quality, Safety & Mission Assurance	25.982	30.637	29.986
Articles:	-	-	-

Description: N/A

FY 2014 Accomplishments:
Quality:

Provided Government inspection and process control for flight test operations
Performed 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
Performed configuration management verification and reconciliation for all major flight and ground test assets

Safety:

Maintained on-site safety oversight at key suppliers and Government facilities
Conducted safety risk assessments per Department of Defense Standards on all test and operational systems to ensure catastrophic risks remained improbable
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

Mission Assurance:

Provided the Missile Defense Agency 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 Missile Defense Agency and Program risk boards, configuration control boards, technical interchange meetings and failure review boards
Conducted Mission Assurance audits throughout the Missile Defense Agency's supply chain
Provided in-plant Mission Assurance and Quality Representatives at 23 Mission Critical Suppliers

BMDS Safety Officers (BSOs):

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD32 / *Quality, Safety, and Mission Assurance*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
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 Monitored and tracked non-conformance behavior of the operational and flight test systems Performed software and hardware configuration verification along with supporting the Warfighter to asset management Provided safety support for Eastern, Western and Pacific Range activities such as safety training and certification MDA Parts and Materials Program: Enhanced BMDS reliability through the following activities: Enforced Program compliance to the Missile Defense Agency Part, Material and Processes Assurance Provisions (PMAP) Provided a Part and Material knowledge center to address Program and Supplier part and material issues arising from development or fielded systems Updated the Agency's preferred parts and materials list database to facilitate new system design and to identify part obsolescence issues Pursued remedies against counterfeit parts Acquisition Support: 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 Update the Missile Defense Agency 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 Improved MDA's acquisition strategy through participation in the definition and determination of all award fees Technical Assistance to MDA Elements: 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			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD32 / *Quality, Safety, and Mission Assurance*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
Provided mission assurance support to major failure review boards to ensure comprehensive mitigation strategies for operational assets are employed Provided propulsion, solid rocket motor, avionics, mechanical structures, guidance, navigation and control, and parts, materials, and processes expertise to enhance reliability Intra-Agency & Industry Activities: Performed major stakeholder quality initiatives to improve quality of products, improve onsite processes, and internal requirements at critical sole source suppliers Participated in the Defense Standardization Board to ensure that MDA has an equal voice in the specification and standard requirements used across the DoD Initiated and led quality, safety, and mission assurance forums to obtain lessons learned and understand/promote new requirements or methods Safety and Occupational Health: Ensured compliance with DoD Safety and Occupational Health regulations and requirements 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 and Dahlgren, VA. Monitored/responded to reports of incidents affecting the health and safety of MDA employees .			
FY 2015 Plans: Quality: Provide Government inspection and process control for flight test operations 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 Perform configuration management verification and reconciliation for all major flight and ground test assets Safety: Maintain on-site safety oversight at key suppliers and Government facilities			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD32 / *Quality, Safety, and Mission Assurance*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
Conduct safety risk assessments per Department of Defense Standards on all test and operational systems to ensure catastrophic risks remain improbable 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 Mission Assurance: Provide the Missile Defense Agency 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 Missile Defense Agency and Program risk boards, configuration control boards, technical interchange meetings and failure review boards Conduct Mission Assurance audits throughout the Missile Defense Agency's supply chain Provide in-plant Mission Assurance and Quality Representatives at 23 Mission Critical Suppliers BMDS Safety Officers (BSOs): 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 Monitor and track non-conformance behavior of the operational and flight test systems Perform software and hardware configuration verification along with supporting the Warfighter to asset management Provide safety support for Eastern, Western and Pacific Range activities such as safety training and certification MDA Parts and Materials Program: Enhance BMDS reliability through the following activities: Enforce Program compliance to the Missile Defense Agency Part, Material and Processes Assurance Provisions (PMAP) Provide a Part and Material knowledge center to address Program and Supplier part and material issues arising from development or fielded systems Update the Agency's preferred parts and materials list database to facilitate new system design and to identify part obsolescence issues Pursue remedies against counterfeit parts Acquisition Support:			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD32 / *Quality, Safety, and Mission Assurance*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
Ensure 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 Update the Missile Defense Agency 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 Improve MDA's acquisition strategy through participation in the definition and determination of all award fees Technical Assistance to MDA Elements: 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 Provide mission assurance support to major failure review boards to ensure comprehensive mitigation strategies for operational assets are employed Provide propulsion, solid rocket motor, avionics, mechanical structures, guidance, navigation and control, and parts, materials, and processes expertise to enhance reliability Intra-Agency & Industry Activities: Perform major stakeholder quality initiatives to improve quality of products, improve onsite processes, and internal requirements at critical sole source suppliers Participate in the Defense Standardization Board to ensure that MDA has an equal voice in the specification and standard requirements used across the DoD Initiate and lead quality, safety, and mission assurance forums to obtain lessons learned and understand/promote new requirements or methods Safety and Occupational Health: Ensure compliance with DoD Safety and Occupational Health regulations and requirements 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.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD32 / *Quality, Safety, and Mission Assurance*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
Monitor/respond to reports of incidents affecting the health and safety of MDA employees. ***FY 2016 Plans:*** Continuation of FY 2015 plans.			
Accomplishments/Planned Programs Subtotals	25.982	30.637	29.986

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The execution of an effective Quality, Safety and Mission Assurance program is carried out in collaboration with subject matter expertise found 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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD32 / *Quality, Safety, and Mission Assurance*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Remarks

N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Quality, Safety & Mission Assurance - Agency Safety & Occupational Health	C/CPFF	Various Multi : AL, CO, AK, DC	1.488	0.291		0.288	Oct 2014	0.260	Oct 2015	-		0.260	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Audits & Quality On-site Support	MIPR	NSWC Corona : AL, CA	11.042	2.500		3.297	Oct 2014	3.000	Oct 2015	-		3.000	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Mission Assurance Agency Operations	C/CPFF	AI Solutions : AL	4.645	0.800		1.102	Oct 2014	1.198	Oct 2015	-		1.198	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Quality Support	C/CPFF	AI Solutions : AL	5.004	1.000		0.593	Oct 2014	1.300	Oct 2015	-		1.300	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Safety	C/CPFF	APT, INC : AL	6.268	1.000		1.180	Oct 2014	1.180	Oct 2015	-		1.180	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Safety Officers	MIPR	AMRDEC : AL	3.049	0.319		0.330	Oct 2014	0.318	Oct 2015	-		0.318	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - HQ & Core Management	MIPR	AMRDEC : AL	1.550	0.300		0.300	Oct 2014	0.300	Oct 2015	-		0.300	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - In-Plant Quality Support (MARS)	C/CPFF	Various Multi : AL, AK, AZ, CA, CO, FL,	7.218	1.051		1.802	Oct 2014	1.355	Oct 2015	-		1.355	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD32 / *Quality, Safety, and Mission Assurance*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		HI, NJ, MA, MO, MD, UT													
Quality, Safety & Mission Assurance - Independent Readiness Review Team	C/CPFF	AI Solutions : AL	2.967	0.773		0.529	Oct 2014	0.540	Oct 2015	-		0.540	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Mission Assurance Subject Matter Experts	C/CPFF	APT, INC. : AL	4.905	0.846		0.839	Oct 2014	0.522	Oct 2015	-		0.522	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Operations Support	MIPR	Various Multi : AL, CA	3.476	0.900		0.233	Oct 2014	0.200	Oct 2015	-		0.200	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Parts, Materials and Processes (PMP) Program	MIPR	Various Multi : AL, CA, IN	6.265	1.500		2.400	Oct 2014	2.155	Oct 2015	-		2.155	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Parts, Materials and Processes - PMP - Program	C/CPFF	APT, INC : AL	2.341	0.545		0.559	Oct 2014	0.641	Oct 2015	-		0.641	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Pedigree & Design Certification - FFRDC	MIPR	Aerospace : AL, CA	12.367	2.800		3.239	Oct 2014	3.000	Oct 2015	-		3.000	Continuing	Continuing	Continuing
		Subtotal	72.585	14.625		16.691		15.969		-		15.969	-	-	-

Remarks

N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD32 / *Quality, Safety, and Mission Assurance*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
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	32.252	9.697		11.203	Oct 2014	11.584	Oct 2015	-		11.584	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Quality, Safety & Mission Assurance Operations Support	C/CPFF	MDA QS : AL, DC, VA	5.309	1.000		1.500	Oct 2014	1.295	Oct 2015	-		1.295	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Quality, Safety & Mission Assurance Operations Support (Travel/PCS)	Allot	MDA QS : AL, CO, AK, DC, VA	11.896	0.660		1.243	Oct 2014	1.138	Oct 2015	-		1.138	Continuing	Continuing	Continuing
		Subtotal	49.457	11.357		13.946		14.017		-		14.017	-	-	-

Remarks

N/A

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	122.042	25.982		30.637		29.986		-		29.986	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD32 / *Quality, Safety, and Mission Assurance*	

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract

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.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD32 / *Quality, Safety, and Mission Assurance*

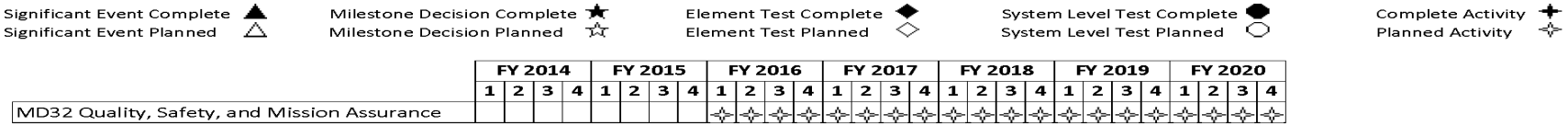


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD32 / *Quality, Safety, and Mission Assurance*

Schedule Details

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

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD40 / *Program-Wide Support*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MD40: *Program-Wide Support*	65.269	22.933	23.780	17.992	-	17.992	20.003	21.398	22.380	23.489	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2015, Program Wide Support reflects a proportional change as a result of increases to the BMD Enabling Programs and in FY 2016, reflects a proportional change as a result of decreases in BMD Enabling Programs.
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

Program-Wide Support (PWS) contains non-headquarters management costs in support of Missile Defense Agency (MDA) functions and activities across the entire Ballistic Missile Defense System (BMDS). It Includes Government Civilians, Contract Support Services, and Federally Funded Research and Development Center (FFRDC) support. 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 and equipment leases; utilities; data and unified communications support; supplies and maintenance; materiel and readiness and central property management of equipment; and similar operating expenses. Program Wide Support 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 Program, 0603913C Israeli Cooperative Program and 0901598C Management Headquarters).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
Title: Program Wide Support	22.933	23.780	17.992
Articles:	-	-	-
Description: N/A			
FY 2014 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2016 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	22.933	23.780	17.992

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD40 / *Program-Wide Support*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD40 / *Program-Wide Support*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Facilities and Maintenance (MIPR)	MIPR	Various Multi: : AL, CO, CA, VA etc.	0.000	7.523		2.594		6.934	Jan 2016	-		6.934	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Allot	Various : Multi: AL, CA, CO, VA	4.230	1.181		0.748	Mar 2015	-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations User Services	C/CPAF	Various : Multi: AL, CO, NM, VA, various	0.000	-		5.602		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	MDA : AK, AL, CA, CO, VA	32.378	-		-		-		-		-	32.378	64.756	-
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AL, CO, CA, VA	28.661	14.229		13.780	Nov 2014	10.253	Nov 2015	-		10.253	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (Reqn)	Reqn	Various : Multi: AK, AL, CA, CO, VA	0.000	-		-		0.805	Nov 2015	-		0.805	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	-		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - FFRDC	C/CPFF	JHU : CA	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Facilities and Maintenance SRM	MIPR	Various : Multi: AL, CA, AL, AK	0.000	-		1.056		-		-		-	Continuing	Continuing	Continuing
		Subtotal	65.269	22.933		23.780		17.992		-		17.992	-	-	-

Remarks

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / *BMD Enabling Programs*	Project (Number/Name) MD40 / *Program-Wide Support*	

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	65.269	22.933		23.780		17.992		-		17.992	-	-	-

Remarks

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD40 / *Program-Wide Support*

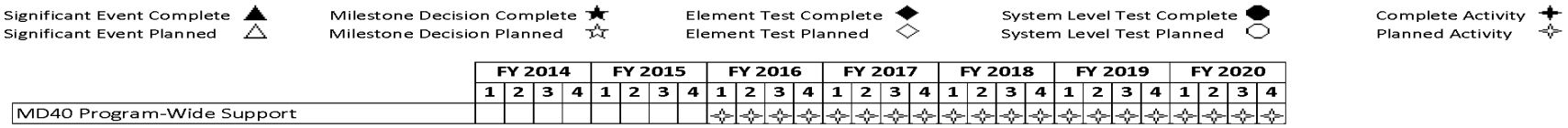


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603890C / *BMD Enabling Programs*	**Project (Number/Name)** MD40 / *Program-Wide Support*

Schedule Details

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