Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Missile Defense Agency	Date: February 2018
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 0603914C / *Ballistic Missile Defense Test*

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	1,669.751	294.441	316.193	365.681	-	365.681	349.388	320.909	320.332	327.584	Continuing	Continuing
MD04: *BMDS Test Development Program*	-	0.000	0.000	0.000	-	0.000	17.332	28.623	22.383	22.807	0.000	91.145
MT04: *BMDS Test Program*	1,590.659	271.143	298.918	342.457	-	342.457	308.160	268.978	274.085	281.012	Continuing	Continuing
MC04: *Cyber Operations*	4.253	9.539	2.528	8.619	-	8.619	8.716	8.815	8.914	8.914	Continuing	Continuing
MD40: *Program Wide Support*	74.839	13.759	14.747	14.605	-	14.605	15.180	14.493	14.950	14.851	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

The FY 2018 to FY 2019 increase reflects the ABS (HALO) Fleet Renewal Program airframe replacement, test facility modernization upgrades and Continuous Integration/Continuous Agile Test (CI/CAT) planning beginning FY 2019. The FY 2017 to FY 2018 increase reflects the MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT required to address emergency warfighting requirements to fund Phase 1, 2 and 3 efforts of the USPACOM Joint Emergent Operational Need Statement (JEON) and Aegis SM-3 Block IIA Missile Test.

A. Mission Description and Budget Item Justification

MDA utilizes a disciplined system engineering process to develop and integrate the BMDS into an effective, layered defense against ballistic missiles of all ranges during all phases of flight. This process consists of the following steps: Plan, Define, Design, Build, Test and Verify, Assess, and Deliver BMDS Capability, followed by transfer of selected capabilities. The BMDS Test Program Element (PE) is responsible for testing that provides critical data to: determine validity of models and simulations used to verify and assess BMDS capabilities; validate that Elements and Components are properly designed, built, and integrated; and provide confidence that the BMDS will perform as designed. Results from the Test and Verify step provide feedback into the Plan, Define, and Design steps to identify areas for system improvements. Key to the systems engineering process is Modeling and Simulation (M&S), which reflects the integrated operational system's performance. Confidence in M&S is based on a comprehensive Verification, Validation, and Accreditation (VV&A) process. The BMDS Test Program, as documented in the Integrated Master Test Plan (IMTP), has a primary emphasis to provide the data necessary to verify and assess BMDS capabilities in support of Technical Capability Declarations, and to anchor BMDS M&S. As models are validated and accredited, MDA and the BMDS OTA Team will utilize these models to assess BMDS capabilities through a campaign of ground testing.

BMDS Test Program Functions include:
- Represent MDA as the single test authority to the test and evaluation community, international cooperative program representatives, and other organization representatives
- Develop and implement MDA test policy, standards, tools, products, and processes to enable effective tests while balancing MDA and element programmatic needs
- Develop an IMTP that compiles all MDA test objectives, test schedules, and funding requirements from the year of execution through the Future Years Defense Program time period and beyond (through FY 2027)
- Act as the single point of contact in MDA for all external ranges and common test resources

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Missile Defense Agency	Date: February 2018
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 0603914C / *Ballistic Missile Defense Test*

- Provide, maintain, and develop common test resources and infrastructure required to execute tests in the MDA Test Program by leveraging element laboratories, ranges, executing agents, and functional expertise, as applicable
- Certify that test personnel are trained and equipped to conduct safe and effective tests
- Provide test personnel and support services to plan and execute tests
- Collect, archive, and distribute all MDA test data/information

B. Program Change Summary ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	293.441	305.791	295.042	-	295.042
Current President's Budget	294.441	316.193	365.681	-	365.681
Total Adjustments	1.000	10.402	70.639	-	70.639
• Congressional General Reductions	-2.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	3.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• FY 2017 Request for Additional Appropriations	0.000	0.000	0.000	-	0.000
• Missile Defeat and Defense Enhancement	0.000	10.402	0.000	-	0.000
• Other Adjustment	0.000	0.000	70.639	-	70.639

Change Summary Explanation

The FY2019 increase from PB18 to PB19 reflects high priority test infrastructure initiatives in support of the Integrated Master Test Plan (IMTP).

FY 2018 MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT: +$10.402 million is required to address emergency warfighting requirements to fund Phase 1, 2 and 3 efforts of the USPACOM Joint Emergent Operational Need Statement (JEON) and Aegis SM-3 Block IIA Missile Test.

PB19 reflects approved out year Missile Defeat and Defense Enhancement (MDDE) tails.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency												Date: February 2018
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603914C / *Ballistic Missile Defense Test*				Project (Number/Name) MD04 / *BMDS Test Development Program*			
COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
MD04: *BMDS Test Development Program*	-	0.000	0.000	0.000	-	0.000	17.332	28.623	22.383	22.807	0.000	91.145
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The MD04 project executes in FY 2020 to support Continuous Integration/Continuous Agile Testing (CI/CAT), with planning in FY 2019 in the MT04 budget project.

A. Mission Description and Budget Item Justification

The BMDS Test Program will implement a Continuous Integration capability to support Continuous Agile Testing approach for integrated ground testing.

The BMDS Test Program will upgrade BMDS Integration and Development (BID) Lab and acquire additional BMDS Hardware-In-The-Loop simulation assets to support element pairwise and ensemble testing, provide test content flexibility and provide a venue to integrate the BMDS before entering formal ground tests (GT).

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The BMDS Test Program acquisition strategy is consistent with the MDA capabilities-based acquisition strategy that emphasizes testing, evolutionary acquisition, and knowledge-based funding. Test directs a team of various internal staff (government and scientific, engineering and technical assistance support), executing agents (including DoD agencies, Service Organizations, Laboratories and Program Offices, Federally Funded Research and Development Center (FFRDC), and other MDA programs) to execute the various diverse efforts within the BMDS test program through competition. When a specific effort/activity requires the use of an executing agent, respective headquarter regulations are used to conform the acquisition strategy.

The BMDS IMTP establishes and documents the test requirements for the BMDS with the specific focus on collecting the data needed for the Verification, Validation, and Accreditation (VV&A) of the BMDS Models and Simulations (M&S). This paradigm uses critical factor analysis to drive test design, planning, and execution for accrediting M&S, which is used to validate and assess system performance. With this test approach, MDA will establish confidence that the M&S used to evaluate the BMDS represent real world behavior, thereby enabling simulation-based performance assessment to verify system functionality.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MD04 / *BMDS Test Development Program*

E. Performance Metrics

N/A

Exhibit R-3, **RDT&E Project Cost Analysis:** PB 2019 Missile Defense Agency		**Date:** February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MD04 / *BMDS Test Development Program*

Remarks

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Missile Defense Agency		**Date:** February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MD04 / *BMDS Test Development Program*

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

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Continuous Integration/Continuous Agile Testing (CI/CAT)				✧ ✧ ✧ ✧	✧ ✧ ✧ ✧	✧ ✧ ✧ ✧	✧ ✧ ✧ ✧

Exhibit R-4A, **RDT&E Schedule Details:** PB 2019 Missile Defense Agency		**Date:** February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MD04 / *BMDS Test Development Program*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Continuous Integration/Continuous Agile Testing (CI/CAT)	1	2020	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency			Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
MT04: *BMDS Test Program*	1,590.659	271.143	298.918	342.457	-	342.457	308.160	268.978	274.085	281.012	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The FY 2018 to FY 2019 increase reflects the ABS (HALO) Fleet Renewal Program airframe sensor replacement.

The FY 2017 to FY 2018 increase reflects the MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT required to address emergency warfighting requirements to fund Phase 1, 2 and 3 efforts of the USPACOM Joint Emergent Operational Need Statement (JEON) and Aegis SM-3 Block IIA Missile Test.

A. Mission Description and Budget Item Justification

The Test Program provides consolidated MDA capabilities and resources to support the management and execution of BMDS and Element-level testing.

The MDA Test Program is responsible for all BMDS testing and relies on BMDS Systems Engineering to provide the system test objectives that define the test architecture by developing, updating, coordinating, and assessing the IMTP. The MDA Test Program plans and executes BMDS test events and develops the necessary test policy, test plans, and test infrastructure to conduct an effective test program. The goals of this budget project are to sustain and improve a robust testing program and to enhance M&S efforts to provide, in conjunction with flight and ground testing, confidence to the Combatant Commanders that the missile defense system works.

Activities are grouped into six major areas: 1) Program Planning and Operations; 2) Flight Test; 3) Ground Test; 4) Test Infrastructure; 5) Engineering Test Analysis; and 6) USFK JEON.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
Title: Program Planning and Operations	104.408	100.203	85.841
Articles:	-	-	-
Description: The BMDS Test program is responsible for the following Program Planning and Operational activities: - Provide BMDS OTA System Team funding for civilian salaries and personnel support of system-level testing and conduct cybersecurity assessments of BMDS. - Implement cybersecurity test requirements as directed by the National Defense Authorization Act (NDAA) for Fiscal Year 2016, Pub. L. No. 114-328, *1647 (a), Director, Operational Test and Evaluation (DOT&E), and Deputy Assistant Secretary of Defense, Developmental Test and Evaluation (DT&E) to include planning, coordination, and execution of Cooperative Vulnerability and Penetration Assessments, Adversarial Assessments, Cyber Table Top Exercises, and Element Cybersecurity Experiments - Serve as the MDA Test Interface/Liaison to the DOT&E, the DASD (DT&E), JFCC IMD, JITC and the Service OTAs. - Maintain a professional and diverse civilian workforce for flight and ground test support events.			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
- Establish, maintain and execute the BMDS Test program budget. - Provide Integrated Master Test Plan cost modeling. - Provide day-to-day Test Functional Area (TFA) management. - Provide Test organizational property accountability. - Establish and standardize Test issuance documents. - Provide external interface services to support execution of the Ballistic Missile Defense System (BMDS) test program. - Manage Test contracting and acquisition activities as well as manpower activities- Ensure proper integration of contracts, support agreements; oversight and maintenance of the Test Directorate Inter/Intra-agency Acquisition Review (IAR) database. - Oversight and coordination of test policy guidance to ensure compliance and strategic synchronization across the Test Directorate and the MDA. - Manage travel, including travel to support IMTP flight and ground test events. Specific and/or unique accomplishments to each FY are as follows: ***FY 2018 Plans:*** - SEE ABOVE. ***FY 2019 Plans:*** - SEE ABOVE. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** The FY2018 to FY 2019 decrease reflects realignment of BMDS Test priorities to Test Infrastructure (MT04) and MC04.			
Title: Flight Test	9.394	17.096	51.822
Articles:	-	-	-
Description: The Flight Test Execution program solely reflects the Integrated Master Test Plan (IMTP) cost model. The program integrates, manages, and executes flight tests using certified personnel and standardized processes and products to support Ballistic Missile Defense System (BMDS) fielding to the warfighter. - Develop flight test training requirements for Test Directors and other console operators. - Implement cybersecurity test requirements as directed by the National Defense Authorization Act (NDAA) for Fiscal Year 2016, Pub. L. No. 114-328, *1647 (a), Director, Operational Test and Evaluation (DOT&E), and Deputy Assistant Secretary of Defense, Developmental Test and Evaluation (DT&E) to include planning, coordination, and execution of Cooperative Vulnerability and Penetration Assessments, Adversarial Assessments, Cyber Table Top Exercises, and Element Cybersecurity Experiments. - Develop and manage the cybersecurity test organization including plans, policy and strategy, resources, and tracking of information and coordinating Cyber test schedules in support of Flight Tests. - Identify mission risks and implement mitigation practices as required ensuring safe and successful test outcomes.			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
- Provide a Failure Response Team to ensure implementation of the response plan and capture lessons learned for process improvement. - Train test personnel for each flight test and maintain training records for all test personnel. - Train and resource System Mission Managers to lead Integrated Event Test Team mission management and readiness activities across all four test event phases for System and Element flight test and contingency operations. - Complete test planning for BMDS Flight Test events. - Conduct mission planning and range coordination activities; provide communications security equipment and management for BMDS Flight Test events. - Design and develop the Lessons Learned database. Specific and/or unique accomplishments to each FY are as follows: ***FY 2018 Plans:*** The increase from FY 2017 to FY 2018 reflects FY 2018 MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT: +$10.402 million is required to address emergency warfighting requirements to fund Phase 1, 2 and 3 efforts of the USPACOM Joint Emergent Operational Need Statement (JEON) and Aegis SM-3 Block IIA Missile Test. Complete test planning for BMDS Flight Test events. ***FY 2019 Plans:*** Complete test planning for BMDS Flight Test events. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** The FY 2018 to FY 2019 increase updated FTO-03 E2 resource and range requirements.			
Title: Ground Test	6.282	10.102	17.116
Articles:	-	-	-
Description: The Ground Test Execution program plans, designs, and executes BMDS ground tests in support of flight test risk reduction; BMDS fielding decisions; and Doctrine, Organization, Training, Materiel, Leadership and Education, and Personnel and Facilities (DOTMLPF) assessments. In addition, enables the warfighter to effectively employ, maintain, and sustain the BMDS and participate in the development of future missile defense capabilities through efficient ground testing. The Ground Test Execution program solely reflects the IMTP cost model. - Conduct SPMTs as required to support BMDS Flight Test Risk Reduction Analysis. - Refine and continue development of the Ground Test Mission Directors, System Mission Manager and Mission Director training plan.			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
- Implement cybersecurity test requirements as directed by the National Defense Authorization Act (NDAA) for Fiscal Year 2016, Pub. L. No. 114-328, *1647 (a), Director, Operational Test and Evaluation (DOT&E), and Deputy Assistant Secretary of Defense, Developmental Test and Evaluation (DT&E) to include planning, coordination, and execution of Cooperative Vulnerability and Penetration Assessments, Adversarial Assessments, Cyber Table Top Exercises, and Element Cybersecurity Experiments. - Responsible for developing and managing the cybersecurity test organization including plans, policy and strategy, resources, and tracking of information and coordinating Cyber test schedules in support of the IMTP. - Develop and manage the cybersecurity test organization including plans, policy and strategy, resources, and tracking of information and coordinating Cyber test schedules in support of the IMTP. Specific and/or unique accomplishments to each FY are as follows: ***FY 2018 Plans:*** - The FY 2017 to FY 2018 increase reflects execution of additional IMTP ground test events, to include completion of Dry Run/ Runs for Record for GTI-07b, GTI-067b and GTD-07b. - Continue to incorporate cybersecurity testing requirements into the BMDS ground tests to include planning for cyber requirements in FY 2019 GTD-07b test event. - Develop CONOPS to support Continuous Integration (CI)/ Continuous Agile Testing (CAT) emerging requirements, which begins execution in FY 2020. - Complete hardware and software testing, truth drivers and framework integration, formal execution runs and/or official data collection in support of GTI-07b (NORTHCOM/CENTCOM) and GTD-07b (USEUCOM/CENTCOM). Conduct planning activities for GTD-07b, and GT-08 campaign. - Complete test planning for BMDS Ground Test events. ***FY 2019 Plans:*** - Initiate planning for cyber requirements in FY 2020 GTD-08 (E/C) and GTD-08 (N/P) test events. - Finalize development of CONOPS to support CI/CAT emerging requirements, which begins execution in FY 2021. - Execute the following Ground Tests in FY 19: GTD-07b (NORTHCOM/CENTCOM), GTI-07c (NORTHCOM/CENTCOM), GTI-19 (USEUCOM/CENTCOM), and GTI-ISR (18) (International). - Initiate planning for the following Ground Test in FY20: GTI-08 (N/P) and CAT Sprints. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** The FY 2018 to FY 2019 increase reflects long lead time hardware purchases and new process development of CI/CAT in the Ground Test program.			
Title: Test Infrastructure	123.671	131.636	162.574
Articles:	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
Description: The BMDS Test Program procures, maintains, and manages test resource infrastructure and provides all resources and requirements in support of a robust IMTP schedule in six primary functions: 1) Flight Test Ranges 2) Sea Based Mobile Assets 3) Airborne Optics 4) Flight Test Communications 5) Ground Test Infrastructure 6) IMTP Development & Data Management The primary function responsibilities are as follows: Flight Test Ranges: - Maintain the MDA unique range facilities and mobile sensors, communication, data processing and dissemination infrastructure to support a broad spectrum of test requirements including metric tracking, target characterization, and multi-spectral imagery of BMDS phenomena. - Construct the new Wake Island communications facility and provide enhancements to the fiber backbone providing Flight Test Communications Network (FTCN) services to remote sites. Sea Based Mobile Assets: - Sea Based Systems (SBS) continued sustainment of test instrumentation ships, PACIFIC COLLECTOR and PACIFIC TRCKER, and associated telemetry and radar system. Airborne Optics: - Maintain and procure modified Gulfstream IIBs (HALOs) that collect radiometric and photo-documentary performance data for strategic and tactical defense systems flight and ground tests. - The key FY 2019 initiative is to replace the first ABS (HALO) Fleet Renewal Program sensor airframe. Flight Test Communications: - Provide operations and maintenance support for the Flight Test Communications Network at Wake Island. - Maintain accreditation for the Transportable Telemetry Systems (TTS), Pacific Collector Range Safety System (PCRSS), and the FTCN. Ground Test Infrastructure:			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
- Execute ground test planning activities supporting MDA test requirements and priorities to include test design, test integration, digital assessment, and international testing. - Maintain the hardware-in-the-loop (HWIL) Labs and communication test assets. IMTP Development & Data Management: - Establish authority and maintain configuration control of the test baseline. - Develop, update, coordinate and deliver the IMTP, coordinated within MDA and External stakeholders (Director, Operational Test and Evaluation (DOT&E); the Deputy Assistant Secretary of Defense for Developmental Test and Evaluation (DASD(DT&E)); the Joint Functional Component Command for Integrated Missile Defense (JFCC IMD); the Service Operational Test Agencies (OTAs)); and the Joint Interoperability Test Command (JITC)); and provides an affordable and executable test plan to meet Warfighter needs and National Security commitments. - Coordinate the IMTP Special Access Programs (SAP) Annex with respect to changes to SAP Program Test Baseline and synchronize with the collateral IMTP. - Manage the approved test baseline by assessing all proposed changes to the BMDS Test Schedule and Test Configurations for each BMDS test event identified in the IMTP. - Support the Developmental Baseline Reviews and the annual BMDS Accountability Reviews to assess baseline execution risk and verify BMDS components are consistent with the approved test baseline. - Update and maintain the classified Test Resource Mission Planning-Tool (TRMP-T(C)) database. - Execute Flight Test Design Analysis ensuring test designs are safe and sufficient to meet test objectives. - Develop and maintain integrated test tools to support Truth Data Requirements Documents, Truth Data Packages, on-site Truth Quick-Look product development, pre- and post-test analysis test planning, and resource de-confliction; Integrated Data Management Plans (IDMPs), Data Handling Plans (DHPs), Cybersecurity documentation, data planning and management, library operations, deployment process; infrastructure requirements process; and test operations support. - Provide analytical capability for Flight and Ground test planning to include: test design feasibility assessments, truth data and sensor analysis, truth data requirements documentation and data packages; flight safety analysis and flight safety data packages; and telemetry link margin, collision avoidance, and pre- and post-test trajectory analyses. - Review BMDS component programs' content on a quarterly basis to ensure consistency with the approved IMTP. - Maintain and extend the Directorate of Test Support System (DTSS) classified Computer Network Defense Service Provider (CNDSP) to support network cybersecurity defense for ground test network systems. Continue to define cybersecurity investments, risks and benefits used to reduce vulnerabilities and protect critical administrative and test data. - Maintain accreditation of the Orion Voice Switch Conferencing System (VSCS). - Co-Chair the Signature Working Group to review all signature models and identify technical limitations associated with radar and optical signatures used to support Ballistic Missile Defense System (BMDS) ground and flight testing.			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
- Manage the Missile Defense Data Center (MDDC) Program and its library, operations, and infrastructure providing centralized data management, archival, and distribution services. - Maintain ARC infrastructure and networks, complete accreditation activities and ensure cyber compliance of all ARC enclaves. Specific and/or unique accomplishments to each FY are as follows: ***FY 2018 Plans:*** The FY 2017 to FY 2018 increase is due to early engineering for the replacement of the aging HALO and ABS Obsolete platforms to meet FAA requirements by FY 2020. - Initiate Non-Recurring Engineering (NRE) for migration of Airborne Sensors airframes to two newer platforms. The NRE phase leads to the acquisition of one replacement aircraft in NLT FY 2019 and the acquisition of the second aircraft NLT FY 2020. After modifications and testing, the first aircraft will be ready for MDA test support in FY 2020 and the second in FY 2021. - Conduct mandatory intermediate dry-dock of Pacific Collector (Sep 2018) and Pacific Tracker (Jun 2018). - Initiate a plan for converting Pacific Tracker's main propulsion system from burning heavy Intermediate Fuel Oil to burning much lighter marine diesel fuel. - Build control room for Transportable Telemetry Systems (TTS) on Pacific Tracker to move operations out of below-deck trailers. - Replace Sea Tel secondary C-Band SATCOM antennas onboard Pacific Tracker and Pacific Collector to address End of Life (EoL). - Support all BMDS Hardware-in-the-Loop ground testing conducted in FY 2018 with the full complement of HWIL test assets located at the ARC. ***FY 2019 Plans:*** - Begin modifications on the first Gulfstream-550 as part of the ABS (HALO) Fleet Renewal Program. - Design, test, and integrate the Airborne Sensors Primary Sensor replacement into the first Gulfstream-550. - Replace the Sea Tel primary C-Band SATCOM antennas onboard Pacific Tracker and Pacific Collector to address End of Life (EoL). - Implement a redundant communications hub at the MDA Integration and Operations Center (MDIOC). - Complete construction and initiate outfit of the new Wake Island Test Support Facility that will replace failing and condemned mission support facilities and consolidate multiple test support and test execution functions into a single facility. - Execute a phased repair and modernization project for the Meck Island Power Plant at the Reagan Test Site (RTS) in conjunction with a U.S. Army Garrison-Kwajalein (USAG-KA)/MDA project to establish a green, renewable power generation and distribution system. - Execute deferred test infrastructure sustainment and modernization projects consistent with Independent Facility Condition Assessments (FCAs) conducted at multiple BMDS Test Ranges.			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
- Implement an Operation and Sustainment (O&S) program for a new launch infrastructure at Kauai Test Facility (KTF) to support future target launches using new target variants currently in design. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** The FY 2018 to FY 2019 increase reflects ABS (HALO) Fleet Renewal Program improvements and test facility modernization upgrades.			
Title: Engineering and Test Analysis	27.388	30.381	25.104
Articles:	-	-	-
Description: The Engineering and Analysis effort provides essential BMDS ground and flight test event planning, execution, and evaluation activities for each test event: - Designing test architecture, defining test objectives and evaluation criteria, defining target requirements, and generating ground and flight test scenarios appropriate to the data collection requirements to assess BMDS performance and anchor Models and Simulations. - Producing the threat data for BMDS ground and flight tests. - Coordinating with BMDS OTA to address test issues, disposition them, coordinate them, with the OTA and recommend action plans to achieve closure. - Delivering HWIL M&S integration test cases. - Integrating, testing, functionally qualifying, and delivering end-to-end BMDS simulations supporting ground test missions. - Analyzing system-level interoperability. - Conducting modeling and technical analysis for Combatant Command wargames and exercises. - Utilizing M&S for pre-test assessment and post-test review, as well as M&S updates. - Providing test configuration management; risk assessments; and anomaly/deficiency review, assessment and closure. - Analyzing test results to identify verification and validation data collection shortfalls and reassigning objectives to future test events as required. - Documenting BMDS test observations for system-level test anomalies and coordinating the resulting BMDS Discrepancy Reports within the Failure Reporting, Analysis, and Corrective Action System (FRACAS) - Providing the Quick Look Brief, Mission Data Review (MDR), and Executive MDR. IMTP and infrastructure tasks include: - Providing long-range BMDS IMTP planning and integration strategies related to overarching BMDS analysis product integration. - Upgrading test analysis tools in concert with the BMDS evolution (e.g., Modular Analysis and Reporting Suite (MARS)) to enhance analysis capability and efficiency. - Populating 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 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
- Providing 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). - Incrementally improving and providing infrastructure, software, and MDA/IA compliance for the RApid Scenario Prototyping (RaSP) capability. Specific and/or unique accomplishments to each FY are as follows: ***FY 2018 Plans:*** FY 2018 increase keeps pace with projected FY 2018-FY 2022 IMTP events. - Validate test event data collection and conduct post-test analyses supporting the EPAA Phase 3 Technical Capability Declaration. ***FY 2019 Plans:*** - SEE ABOVE. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease from FY 2018 to FY 2019 reflects the consolidation of Non-MDA Element (NME) test engineering support to Program Element 0603890C.			
Title: USFK JEON	0.000	9.500	0.000
Articles:	-	-	-
Description: The FY 2017 to FY 2018 increase reflects the MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT required to address emergency warfighting requirements to fund Phase 1, 2 and 3 efforts of the USPACOM Joint Emergent Operational Need Statement (JEON) and Aegis SM-3 Block IIA Missile Test. ***FY 2018 Plans:*** The MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT required to address emergency warfighting requirements to fund Phase 1, 2 and 3 efforts of the USPACOM Joint Emergent Operational Need Statement (JEON) and Aegis SM-3 Block IIA Missile Test. ***FY 2019 Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** N/A			
Accomplishments/Planned Programs Subtotals	271.143	298.918	342.457

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• 0603890C: *BMD Enabling Programs*	435.203	465.642	540.926	-	540.926	542.326	608.210	489.637	496.313	Continuing	Continuing

Remarks

D. Acquisition Strategy

The BMDS Test Program acquisition strategy is consistent with the MDA capabilities-based acquisition strategy that emphasizes testing, evolutionary acquisition, and knowledge-based funding. Test directs a team of various internal staff (government and scientific, engineering and technical assistance support), executing agents (including DoD agencies, Service Organizations, Laboratories and Program Offices, Federally Funded Research and Development Center (FFRDC), and other MDA programs to execute the various diverse efforts within the BMDS test program through competition. When a specific effort/activity being conducted, acquired, or maintained requires the use of an executing agent, respective headquarter regulations are used to conform the acquisition strategy.

The MDA IMTP establishes and documents the test requirements for the BMDS with the specific focus on collecting the data needed for the Verification, Validation, and Accreditation (VV&A) of the BMDS Models and Simulations. This paradigm uses critical factor analysis to drive test design, planning, and execution for accrediting M&S, which is used to validate and assess system performance. With this test approach, MDA will establish confidence that the M&S used to evaluate the BMDS represent real world behavior, thereby enabling simulation-based performance assessment to verify system functionality.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	N/A

Remarks

N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	N/A

Remarks

N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Planning and Operations - IMTP Planning and Data Management Tools	C/FP	None : AL	109.224	9.141	Oct 2016	21.723	Feb 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Program Planning and Operations - Lab Analysis Infrastructure	MIPR	MIT-LL/Aerospace : AL/CA/MA	55.119	10.026	Oct 2016	8.059	Feb 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Program Planning and Operations - Operational Test Agency	MIPR	ATEC/Aberdeen Proving Grounds : MD	67.719	16.367	Oct 2016	13.166	Feb 2018	23.310	Nov 2018	-		23.310	Continuing	Continuing	Continuing
Program Planning and Operations - Support to Flight Testing	C/CPAF	Northrop Grumman/ Lockheed Martin : AL/CO	41.287	18.964	Oct 2016	12.571	Oct 2017	0.000		-		0.000	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Planning and Operations - Support to Ground Testing	C/CPAF	MDIOC/JRDC/ Northrop Grumman : AL/CO/VA/DC	15.117	7.913	Oct 2016	5.645	Oct 2017	0.000		-		0.000	Continuing	Continuing	Continuing
Program Planning and Operations - Support to Test Resources	C/CPAF	None : MiDAESS/AL	20.020	6.595	Oct 2016	4.354	Oct 2017	0.000		-		0.000	Continuing	Continuing	Continuing
Program Planning and Operations - Test Functional Management Office	C/CPFF	None : MDA/ MiDAESS/AL/VA/ CO/MA	282.100	35.402	Oct 2016	34.685	Mar 2018	62.531		-		62.531	Continuing	Continuing	Continuing
Flight Test - IMTP Flight Testing	MIPR	Air & Missile Def Command/AFGSC/ H'ville Operations Support Center/ NAWC/NRL/Ronald Reagan Test Site /SPAWAR/ Vandenberg AFB/ White Sands Missile Range/AMRDEC/ NSWC/PMRF/611th CES/611th ASUS/ AEDC : AL/CA/CO/ HI	235.612	9.394	Oct 2016	17.096	Oct 2017	51.822	Oct 2018	-		51.822	Continuing	Continuing	Continuing
Ground Test - IMTP Ground Testing	MIPR	Aviation & Missile Research & Development/LTPO/ Space & Naval Warfare Command : AL/CO/CA	42.862	6.282	Oct 2016	10.102	Oct 2017	17.116	Oct 2018	-		17.116	Continuing	Continuing	Continuing
Test Infrastructure - Ground Test Infrastructure	MIPR	Space and Naval Warfare Command : AL/CA	19.899	3.694	Oct 2016	3.908	Nov 2017	35.648	Nov 2018	-		35.648	0.000	63.149	0.000
Test Infrastructure - Airborne Optics Mobile Assets	C/IDIQ	None : L3/JHU/APL/ TX/MD/AZ/TN	87.809	17.504	Oct 2016	17.014	Feb 2018	69.584	Feb 2019	-		69.584	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Infrastructure - Core Ground Test Labs and HWILS	C/IDIQ	None : Colsa/ AMRDEC/AL/MD/FL/ CA/OH/CO	141.238	26.503	Oct 2016	28.675	Feb 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Test Infrastructure - Enhanced GT Capability Assets	C/IDIQ	None : Colsa/Boeing/ NG/AL/CO/FL/MD/HI	27.828	3.836	Oct 2016	7.759	Feb 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Test Infrastructure - Facilities Sustainment, Restoration & Modernization	MIPR	SMDC/Northrup Grumman/Colsa : AL/CO/NM	12.028	3.775	Oct 2016	4.543	Nov 2017	0.000		-		0.000	Continuing	Continuing	Continuing
Test Infrastructure - Flight Test Communications	C/IDIQ	ASI/WSMR : Gray Research/NRL/ NAWC/CA/MD/NCR/ NM/AL/MA	82.884	15.368	Oct 2016	12.751	Nov 2017	16.773	Nov 2018	-		16.773	Continuing	Continuing	Continuing
Test Infrastructure - Flight Test Ranges	C/IDIQ	SMDC/SNL/PMRF : NAWC/WSMR/ AMRDEC/NG/AK/AL/ CA/HI/NM/CO	69.330	8.143	Oct 2016	11.862	Nov 2017	11.280	Nov 2018	-		11.280	Continuing	Continuing	Continuing
Test Infrastructure - IMTP Planning & Data Management Tools	C/FP	None : AL	0.000	0.000		0.000		16.430	Nov 2018	-		16.430	Continuing	Continuing	Continuing
Test Infrastructure - Sea Based Mobile Assets	MIPR	None : MARAD/ NAWC/Hanscom AFB/AL/CA/MD/ NCR/NM/MA	68.427	13.504	Oct 2016	12.528	Nov 2017	12.859	Nov 2018	-		12.859	Continuing	Continuing	Continuing
Test Infrastructure - Support to Test Resources	MIPR	None : MiDAESS/AL	114.760	31.344	Oct 2016	32.596	Nov 2017	0.000		-		0.000	Continuing	Continuing	Continuing
Engineering and Test Analysis - CSS Support	C/CPFF	TEAMS : AL	18.431	6.009	Nov 2016	4.079	Nov 2017	4.162	Nov 2018	-		4.162	Continuing	Continuing	Continuing
Engineering and Test Analysis - FFRDA/UARC 2	MIPR	Aerospace : CA	0.755	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Engineering and Test Analysis - FFRDC/UARC	MIPR	MITRE : VA	3.187	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		**Date:** February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Test Analysis - Industry Support	C/CPAF	Boeing : AL	20.038	2.409	Nov 2016	1.856	Nov 2017	2.467	Nov 2018	-		2.467	Continuing	Continuing	Continuing
Engineering and Test Analysis - Industry Support - NME	C/CPAF	Northrop Grumman-JRDC : CO, AL	0.000	0.000		1.848	Nov 2017	0.350	Nov 2018	-		0.350	Continuing	Continuing	Continuing
Engineering and Test Analysis - OGA Support	MIPR	AMRDEC : AL	54.985	16.618	Nov 2016	19.836	Nov 2017	18.125	Nov 2018	-		18.125	Continuing	Continuing	Continuing
Engineering and Test Analysis - OGA Support - NME	MIPR	LTPO : AL	0.000	2.352	Nov 2016	2.762	Nov 2017	0.000		-		0.000	Continuing	Continuing	Continuing
USFK JEON - USFK JEON	SS/IDIQ	Lockheed Martin : Sunnyvale, CA/ Huntsville, AL	0.000	0.000		9.500	Nov 2017	0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	1,590.659	271.143		298.918		342.457		-		342.457	Continuing	Continuing	N/A

Remarks

Recategorized and streamlined BMDS Test cost category content to better align test priorities.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	N/A

Remarks

N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,590.659	271.143		298.918		342.457		-		342.457	Continuing	Continuing	N/A

Remarks

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Missile Defense Agency		**Date:** February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*

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

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
IMTP v19.1 flight and ground test event details are at a higher classification.	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MT04 / *BMDS Test Program*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
IMTP v19.1 flight and ground test event details are at a higher classification.	1	2017	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency			Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MC04 / *Cyber Operations*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
MC04: *Cyber Operations*	4.253	9.539	2.528	8.619	-	8.619	8.716	8.815	8.914	8.914	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

The BMDS Test Cyber Operations sustain Missile Defense Agency Risk Management Framework (RMF) Standards, Computer Network Defense Service Provider and Controls Validation Testing activities; analysis of validation results; risk assessments and reviews of proposed Program Manager/Information Systems Security Manager (PM/ISSM) Plans of Action and Milestones (POA&Ms) for MDA Ballistic Missile Defense Test program. It maintains the Certification and Accreditation (C&A) data repository, capturing the RMF documentation (artifacts, validation results, and Cybersecurity Risk Assessment results, and Authorizing Official (AO) accreditation decisions) and POA&M on all MDA information systems. 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 Systems Security Officer/Security Controls Assessor (SCA) and AO. 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 Systems Modernization Act (FISMA) of 2014. The MDA Information Technology Networks and Systems (ICTA) and Cross Domain Solution (CDS) provide oversight and guidance for implementing standard CDS security policies across the BMDS. The Network Operations Security Center (DNOSC) is the Local Control Center (LCC) (Tier 3) that protects, detects, characterizes, reports, and mitigates cyber threats through real-time continuous monitoring for flight and ground test assets.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
Title: Network / System Certification and Accreditation (C&A)	9.539	2.528	8.619
Articles:	-	-	-
Description: The BMDS Test Network/System Certification and Accreditation program will: - Provide cyber security program oversight of all MDA Test Directorate (DT) information systems, networks, sponsored remote sites, ground and flight test infrastructure, and exercise/war game infrastructures. This includes management of: cyber security compliance and authorization; cyber security training and awareness; information system secure configuration; assessment and incident management; and computer network defense. - Fund Ballistic Missile Defense Test Program Information Systems Security Manager (ISSM) civilian salaries. - Conduct cyber security/information assurance engineering and architecture planning for the BMDS Test Program information technology systems. - Plan and test the Cybersecurity controls for BMDS. - Develop DT NIST certification and accreditation packages.			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MC04 / *Cyber Operations*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
- Leverage Cross Domain Solution (CDS) as single authority implementing standard security policies for test and across the BMDS. - Maintain and extend the Support System (DTSS) classified Computer Network Defense Service Provider (CNDSP) to support network cyber security defense for ground test network systems. - Continue to define cyber security investments, risks and benefits used to reduce vulnerabilities and protect critical administrative and test data. Specific and/or unique accomplishments to each FY are as follows: ***FY 2018 Plans:*** - SEE ABOVE. ***FY 2019 Plans:*** - SEE ABOVE. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** The FY 2018 to FY 2019 increase reflects hardware and software upgrades to improve cybersecurity posture and transfers Directorate of Test Support System (DTSS) and Cross Domain Solution (CDS) costs from MT04 Test Infrastructure budget project to more accurately report Cyber security related activities.			
Accomplishments/Planned Programs Subtotals	9.539	2.528	8.619

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 2019 Missile Defense Agency		**Date:** February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MC04 / *Cyber Operations*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - Cybersecurity Civ	MIPR	MDA : Various	0.778	0.446		0.330	Oct 2017	0.345	Nov 2018	-		0.345	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Cyersecurity Support	C/IDIQ	Torch Technologies : Various	3.475	2.155		2.198	Oct 2017	2.233	Oct 2018	-		2.233	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - DNOSC	MIPR	Teledyne Brown/ AMRDEC : AL	0.000	6.938		0.000		6.041	Oct 2018	-		6.041	Continuing	Continuing	Continuing
		Subtotal	4.253	9.539		2.528		8.619		-		8.619	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.253	9.539		2.528		8.619		-		8.619	Continuing	Continuing	N/A

Remarks
N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Missile Defense Agency		**Date:** February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MC04 / *Cyber Operations*

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

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
MC04 Cyber Operations	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MC04 / *Cyber Operations*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MC04 Cyber Operations	1	2017	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency			Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MD40 / *Program Wide Support*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
MD40: *Program Wide Support*	74.839	13.759	14.747	14.605	-	14.605	15.180	14.493	14.950	14.851	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Wide Support reflects proportional changes as a result of budget changes to the Ballistic Missile Defense Test program element.
Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests on the R-3.

A. Mission Description and Budget Item Justification

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

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
Title: Program Wide Support	13.759	14.747	14.605
Articles:	-	-	-
Description: N/A ***FY 2018 Plans:*** N/A ***FY 2019 Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** N/A			
Accomplishments/Planned Programs Subtotals	13.759	14.747	14.605

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**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 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MD40 / *Program Wide Support*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations Management	Allot	Various : Multi: AL, CA, CO, VA	3.730	1.393	Jul 2017	0.295	Jul 2018	0.221	Jul 2019	-		0.221	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AL, CA, CO, VA	69.059	10.826	Aug 2017	9.887	Aug 2018	10.700	Mar 2019	-		10.700	Continuing	Continuing	Continuing
Program Wide Support - Facilities and Maintenance - SRM	MIPR	Various : Multi: AK,AL,CA,VA	2.050	1.540		4.565	Nov 2017	3.684	Mar 2019	-		3.684	Continuing	Continuing	Continuing
		Subtotal	74.839	13.759		14.747		14.605		-		14.605	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	74.839	13.759		14.747		14.605		-		14.605	Continuing	Continuing	N/A

Remarks
N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Missile Defense Agency		**Date:** February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MD40 / *Program Wide Support*

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

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
MD40 Program-Wide Support	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

Exhibit R-4A, **RDT&E Schedule Details:** PB 2019 Missile Defense Agency		**Date:** February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603914C / *Ballistic Missile Defense Test*	**Project (Number/Name)** MD40 / *Program Wide Support*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MD40 Program-Wide Support	1	2017	4	2023