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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2021 Missile Defense Agency **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	2,370.998	510.292	399.738	378.302	-	378.302	385.910	396.524	394.949	417.261	Continuing	Continuing
MT04: <i>BMDS Test Program</i>	2,245.623	465.268	371.710	354.569	-	354.569	361.796	371.778	365.669	385.245	Continuing	Continuing
MC04: <i>Cyber Operations</i>	22.251	30.419	12.524	8.706	-	8.706	8.800	8.802	9.069	9.256	Continuing	Continuing
MD40: <i>Program Wide Support</i>	103.124	14.605	15.504	15.027	-	15.027	15.314	15.944	20.211	22.760	Continuing	Continuing

**Program MDAP/MAIS Code:** 362

**Note**

Decrease from Fiscal Year (FY) 2020 to FY 2021 reflects changes in accordance with the Integrated Master Test Plan (IMTP) and the elimination of the Consolidated Test Center (CTC) from the Agency Program.

The FY 2021 funding request was reduced by \$0.4 million during DWR to reduce Facilities Sustainment, Restoration, and Modernization (FSRM) Projects.

The FY 2021 funding request was reduced by \$1.245 million during DWR to reduce Civilian Labor.

The FY 2021 funding request was reduced by \$1.555 million during DWR to reduce contractor support.

The FY 2021 funding request was erroneously reduced in PE 0603915C Ballistic Missile Defense System (BMDS) Targets by \$3.5 million during DWR to reduce Facilities Sustainment Restoration and Modernization (FSRM) Projects. MDA moved reduction to appropriate PE 0603914C Ballistic Missile Defense System (BMDS) Test.

The funding request for FY 2021 includes Joint Emergent Operational Need (JEON) PC-0021 requirements.

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

Missile Defense Agency (MDA) utilizes a disciplined system engineering process to develop and integrate the Ballistic Missile Defense System (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

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in support of Technical Capability Declarations, and to anchor BMDS M&S. As models are validated and accredited, MDA and the BMDS Operational Test Agency (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 (FYDP) time period and beyond
- Act as the single point of contact in MDA for all external ranges and common test resources
- 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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
Previous President's Budget	515.897	395.924	417.946	-	417.946
Current President's Budget	510.292	399.738	378.302	-	378.302
Total Adjustments	-5.605	3.814	-39.644	-	-39.644
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	3.814			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.205	0.000			
• Missile Defeat and Defense Enhancement	0.000	0.000	0.000	-	0.000
• Other Adjustment	-5.400	0.000	-39.644	-	-39.644

**Change Summary Explanation**

Increase in FY 2020 reflects Congressional plus up for cybersecurity activities.

Decrease in FY 2021 reflects changes in accordance with the Integrated Master Test Plan (IMTP) and the elimination of the Consolidated Test Center (CTC) from the Agency Program.

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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MT04 / <i>BMDS Test Program</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
MT04: <i>BMDS Test Program</i>	2,245.623	465.268	371.710	354.569	-	354.569	361.796	371.778	365.669	385.245	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

FY 2020 to FY 2021 decrease reflects IMTP changes

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

The Test Program provides consolidated Missile Defense Agency (MDA) capabilities and resources to support the management and execution of Ballistic Missile Defense System (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 Modeling and Simulation (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) United States Indo-Pacific Command (USINDOPACOM) Joint Emerging Operational Needs (JEON).

Note: MDA has modified the GMD test program to reinforce the Agency's commitment to reducing concurrency risk in the development program and to inform the deployment of GBIs with improved capabilities. Due to the cancellation of the RKV program, the GMD flight Test Program is under review.

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

	FY 2019	FY 2020	FY 2021
<b>Title:</b> Program Planning and Operations	95.091	95.465	93.402
<b>Articles:</b>	-	-	-
<b>Description:</b> The BMDS Test program is responsible for the following Program Planning and Operational activities:			
- Provide BMDS Operational Test Agency (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. 114-92, Sec. 1647 (a), Director, Operational Test and Evaluation (DOT&E), and Deputy Assistant Secretary of Defense, Developmental Test and Evaluation (DASD(DT&E)) to include planning, coordination, and execution of Cooperative			

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<p>Vulnerability and Penetration Assessments, Adversarial Assessments, Cyber Table Top Exercises, and Element Cybersecurity Experiments.</p> <ul style="list-style-type: none"> <li>- Serve as the MDA Test Interface/Liaison to the DOT&amp;E, DASD ((DT&amp;E)), Joint Functional Component Command for Integrated Missile Defense (JFCC IMD), Joint Interoperability Test Command (JITC) and the Service OTAs.</li> <li>- Maintain a professional and diverse civilian workforce for flight and ground test support events.</li> <li>- Establish, maintain and execute the BMDS Test program budget.</li> <li>- Provide Integrated Master Test Plan cost modeling.</li> <li>- Provide day-to-day Test Functional Area (TFA) management.</li> <li>- Provide Test organizational property accountability.</li> <li>- Establish and standardize Test issuance documents.</li> <li>- Provide external interface services to support execution of the Ballistic Missile Defense System (BMDS) test program.</li> <li>- Manage Test contracting and acquisition activities as well as manpower activities ensuring proper integration of contracts, support agreements; oversight and maintenance of the Test Directorate Inter/Intra-agency Acquisition Review (IAR) database.</li> <li>- Provide oversight and coordination of test policy guidance to ensure compliance and strategic synchronization across the Test Directorate and the MDA.</li> <li>- Manage travel, including travel to support IMTP flight and ground test events.</li> </ul> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p><b>FY 2020 Plans:</b> - SEE ABOVE</p> <p><b>FY 2021 Plans:</b> - SEE ABOVE.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> N/A</p>				
<b>Title:</b> Flight Test		45.181	38.786	15.398
		<b>Articles:</b>	-	-
<p><b>Description:</b> 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.</p> <ul style="list-style-type: none"> <li>- Develop flight test training requirements for Test Directors and other console operators.</li> <li>- Implement cybersecurity test requirements as directed by the National Defense Authorization Act (NDAA) for Fiscal Year 2016, Pub. L. No. 114-92, Sec. 1647 (a), Director, Operational Test and Evaluation (DOT&amp;E), and Deputy Assistant Secretary of</li> </ul>				

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<p>Defense, Developmental Test and Evaluation (DT&amp;E) to include planning, coordination, and execution of Cooperative Vulnerability and Penetration Assessments, Adversarial Assessments, Cyber Table Top Exercises, and Element Cybersecurity Experiments.</p> <ul style="list-style-type: none"> <li>- 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.</li> <li>- Identify mission risks and implement mitigation practices as required ensuring safe and successful test outcomes.</li> <li>- Provide a Failure Response Team to ensure implementation of the response plan and capture lessons learned for process improvement.</li> <li>- Train test personnel for each flight test and maintain training records for all test personnel.</li> <li>- 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.</li> <li>- Complete test planning for BMDS Flight Test events.</li> <li>- Conduct mission planning and range coordination activities; provide communications security equipment and management for BMDS Flight Test events.</li> <li>- Design and develop the Lessons Learned database.</li> <li>- Execute Flight Test events in accordance with the R-4 schedule.</li> </ul> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p><b>FY 2020 Plans:</b></p> <ul style="list-style-type: none"> <li>- Execute Flight Test events in accordance with the R-4 schedule.</li> </ul> <p><b>FY 2021 Plans:</b></p> <ul style="list-style-type: none"> <li>- Execute Flight Test events in accordance with the R-4 schedule.</li> </ul> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b></p> <p>Decrease from FY 2020 to FY 2021 is in accordance with the IMTP requirements.</p>				
<p><b>Title:</b> Ground Test</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> 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.</p> <ul style="list-style-type: none"> <li>- Conduct System Pre-Mission Tests (SPMTs) as required to support BMDS Flight Test Risk Reduction Analysis.</li> <li>- Refine and continue development of the Ground Test Mission Directors, System Mission Manager and Mission Director training plan.</li> </ul>		53.148	78.221	61.902
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<p>- Implement cybersecurity test requirements as directed by the National Defense Authorization Act (NDAA) for Fiscal Year 2018, Pub. L. No. 1159, *164, Director, Operational Test and Evaluation (DOT&amp;E), and Deputy Assistant Secretary of Defense, Developmental Test and Evaluation (DT&amp;E) to include planning, coordination, and execution of Cooperative Vulnerability and Penetration Assessments, Adversarial Assessments, Cyber Table Top Exercises, and Element Cybersecurity Experiments.</p> <p>- 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.</p> <p>- Execute baseline Ground Tests in accordance with the IMTP.</p> <p>Maintain Ground Test Infrastructure:</p> <p>- Execute ground test planning activities supporting MDA test requirements and priorities to include test design, test integration, digital assessment, and international testing.</p> <p>- Maintain the hardware-in-the-loop (HWIL) Labs and communication test assets.</p> <p>- Maintain Advanced Research Center (ARC) infrastructure and networks, complete accreditation activities and ensure cyber compliance of all ARC enclaves.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p><b>FY 2020 Plans:</b></p> <p>- Execute the following Ground Tests in FY 2020: GTI-07c, GT-20 Sprint (BL 5.4), GT-20 Sprint (JEON), GTI-08 (N/P), GTI-ISR (21) (International) Risk Reduction Test.</p> <p>- Execute planning phase of CONOPS to support CI/CAT requirements, which begin execution first quarter FY 2021.</p> <p>- Initiate planning for the following Ground Tests in FY 2021: GTI-09 Sprint 1 EUCOM/CENTCOM (E/C), GTI-09 Sprint 2 (E/C), GTD-08a NORTHCOM/USINDOPACOM (N/I), GTI-ISR (21) Formal Testing.</p> <p>- Plan, coordinate, and execute Cybersecurity Activities in Development and Operations Test (DT/OT) environments (Platform (Element) level and Systems of System Level) as identified in the IMTP for Cyber activities.</p> <p>- Plan, coordinate, and execute Element Cybersecurity Experiments (ECEs) to provide an early cyber assessment of the platforms.</p> <p>- Continue to incorporate cybersecurity testing requirements into the BMDS ground tests to include planning for cyber requirements in FY20 GTI-08 (N/P).</p> <p>- Identify efficiencies gained in USINDOPACOM cyber activities from lessons learned as documented in previous cyber activities.</p> <p>- Execute infrastructure projects to maintain integrity and viability of ARC facility.</p> <p><b>FY 2021 Plans:</b></p> <p>- Execute the following Ground Tests in FY 2021: GTI-09 Sprint 1 EUCOM/CENTCOM (E/C), GTI-09 Sprint 2 (E/C), GTD-08a NORTHCOM/USINDOPACOM (N/I), GTD-09 (E/C), GTI-21 Sprint 1, GTI-08, GTI-ISR (21) Formal Testing.</p>			

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<ul style="list-style-type: none"> <li>- Plan, coordinate, and execute Cybersecurity Activities in Development and Operations Test (DT/OT) environments (Platform (Element) level and Systems of System Level) as identified in the IMTP for Cyber activities.</li> <li>- Plan, coordinate, and execute Element Cybersecurity Experiments (ECEs) to provide an early cyber assessment of the platforms.</li> <li>- Continue to incorporate cybersecurity testing requirements into the BMDS ground tests.</li> </ul> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Decrease from FY 2020 to FY 2021 reflects a decrease in amount of funding for ARC upgrades.</p>				
<p><b>Title:</b> Test Infrastructure</p> <p><b>Description:</b> 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:</p> <ol style="list-style-type: none"> <li>1) Flight Test Ranges</li> <li>2) Sea Based Mobile Assets</li> <li>3) Airborne Optics</li> <li>4) Flight Test Communications</li> <li>5) IMTP Development &amp; Data Management</li> </ol> <p>The primary function responsibilities are as follows:</p> <p>Flight Test Ranges:</p> <ul style="list-style-type: none"> <li>- 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.</li> <li>- Construct the new Wake Island communications facility and provide enhancements to the fiber backbone providing Flight Test Communications Network (FTCN) services to remote sites.</li> <li>- Facilities Sustainment Restoration/Modernization (FSRM) Funds are required to repair, upgrade, and sustain numerous facilities, test infrastructure, and equipment maintained by MDA world-wide.</li> </ul> <p>Sea Based Mobile Assets:</p> <ul style="list-style-type: none"> <li>- Provide Sea Based Systems (SBS) continued sustainment of test instrumentation ships, Pacific Collector and Pacific Tracker, and associated telemetry and radar systems.</li> </ul> <p>Airborne Optics:</p>		175.221	114.589	115.412
		<b>Articles:</b>	-	-

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

	FY 2019	FY 2020	FY 2021
<ul style="list-style-type: none"> <li>- Maintain existing Gulfstream Aircraft (HALOs) that collect radiometric and photo-documentary performance data for strategic and tactical defense systems flight and ground tests.</li> <li>- Three replacements are HALO Fleet Renewal Program procured in FY 2019; Modification work ongoing since they are scheduled to complete in FY 2022</li> </ul> <p>Flight Test Communications:</p> <ul style="list-style-type: none"> <li>- Provide operations and maintenance support for the Flight Test Communications Network at Wake Island.</li> <li>- Maintain accreditation for the Transportable Telemetry Systems (TTS), Pacific Collector Range Safety System (PCRSS), and the Flight Test Communications Network (FTCN).</li> </ul> <p>IMTP Development &amp; Data Management:</p> <ul style="list-style-type: none"> <li>- Establish authority and maintain configuration control of the test baseline.</li> <li>- Develop, update, coordinate and deliver the IMTP, coordinated within MDA and External stakeholders (Director, Operational Test and Evaluation (DOT&amp;E); the Deputy Assistant Secretary of Defense for Developmental Test and Evaluation (DASD(DT&amp;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.</li> <li>- Coordinate the IMTP Special Access Programs (SAP) Annex with respect to changes to SAP Program Test Baseline and synchronize with the collateral IMTP.</li> <li>- 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.</li> <li>- 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.</li> <li>- Update and maintain the classified Test Resource Mission Planning-Tool (TRMP-T(C)) database.</li> <li>- Execute Flight Test Design Analysis ensuring test designs are safe and sufficient to meet test objectives.</li> <li>- 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.</li> <li>- 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.</li> <li>- Review BMDS component programs' content on a quarterly basis to ensure consistency with the approved IMTP.</li> </ul>			

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

	FY 2019	FY 2020	FY 2021
<p>- 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.</p> <p>- Maintain accreditation of the Orion Voice Switch Conferencing System (VSCS).</p> <p>- 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.</p> <p>- Manage the Missile Defense Data Center (MDDC) Program and its library, operations, and infrastructure providing centralized data management, archival, and distribution services.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p><b>FY 2020 Plans:</b></p> <ul style="list-style-type: none"> <li>- Complete 3 sensor integration, perform airworthiness flight tests, and mission systems ground and flight tests for the first new HALO system (HALO-IR).</li> <li>- Complete modifications on the second and third Gulfstream-550 ARC as part of the ABS (HALO) Fleet Renewal Program.</li> <li>- Design, test, and integrate the Airborne Sensors Primary Sensor replacement into the second and third Gulfstream-550.</li> <li>- Complete the Business Case Analysis (BCA) on replacement of the Pacific Tracker and Pacific Collector vessels.</li> <li>- Refresh flight test support equipment and the fleet of utility vehicles at Wake Island.</li> <li>- Install phase 2 and 3 of the Maritime Acquisition and Range Safety System (MARSS) on board the Mobile At-Sea Sensor Ship (MATSS) to replace the aging Mobile Range Safety System (MRSS) currently on board.</li> <li>- - Continue execution of the Meck Island Power Plant Replacement Project to include all power generation, switchgear, controls, Life Support Area, and downstream power distribution system components.</li> <li>- Release 2.0 NSITE Software to support all flight and ground test events.</li> </ul> <p><b>FY 2021 Plans:</b></p> <ul style="list-style-type: none"> <li>- Prepare to field the first new, Gulfstream-550 based HALO system, HALO-IR in late FY 2021/early FY 2022.</li> <li>- Complete Airborne Sensors Primary Sensor replacement development and testing HALO replacement.</li> <li>- Integrate into HALO-IIR and HALO-IIIR complete ground testing, and prepare for flight testing and fielding in FY 2022.</li> <li>- Implement a distributed communications hub architecture facilitating near-simultaneous flight test mission operations.</li> <li>- Modernize Mobile Communications Suite - 2 (MCS-2) to meet emerging MDA flight test communications requirements for remote sites.</li> <li>- Continue Wake Island projects include Wake Housing Design, replace MDA Diesel Vehicles Fleet, and Building 1512 repairs.</li> <li>- Support Facilities, Sustainment, Restoration, and Modernization (FSRM) efforts.</li> </ul> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b></p>			

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
- N/A				
<p><b>Title:</b> Engineering and Test Analysis</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> The Engineering and Test Analysis effort provides essential BMDS ground and flight test event planning, execution, and evaluation activities for each test event:</p> <ul style="list-style-type: none"> <li>- Design test architecture, define test objectives and evaluation criteria, define target requirements, and generate ground and flight test scenarios appropriate to the data collection requirements to assess BMDS performance and anchor Models and Simulations.</li> <li>- Produce threat data for BMDS ground and flight tests.</li> <li>- Coordinate with BMDS Operational Test Agency (OTA) to address test issues, disposition them, coordinate them, and recommend action plans to achieve closure.</li> <li>- Deliver HWIL M&amp;S integration test cases.</li> <li>- Integrate, test, and deliver end-to-end BMDS simulations supporting ground test missions.</li> <li>- Analyze system-level interoperability.</li> <li>- Conduct modeling and technical analysis for Combatant Command wargames and exercises.</li> <li>- Utilize M&amp;S for pre-test assessment and post-test review, and M&amp;S updates.</li> <li>- Provide test configuration management risk assessments and anomaly/deficiency review, assessment and closure.</li> <li>- Analyze test results to identify verification and validation data collection shortfalls and reassign objectives to future test events as required.</li> <li>- Document BMDS test observations for system-level test anomalies and coordinate the resulting BMDS Discrepancy Reports within the Failure Reporting, Analysis, and Corrective Action System (FRACAS).</li> <li>- Upgrade test analysis tools in concert with the BMDS evolution (e.g., Modular Analysis and Reporting Suite (MARS)) to enhance analysis capability and efficiency.</li> </ul> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p><b>FY 2020 Plans:</b> - SEE ABOVE.</p> <p><b>FY 2021 Plans:</b> - SEE ABOVE.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Decrease from FY 2020 to FY 2021 is in accordance with the IMTP requirements.</p>		24.727	27.049	21.291
		-	-	-
<b>Title:</b> USINDOPACOM Joint Emerging Operational Needs Statement (JEONS)		71.900	17.600	47.164

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Missile Defense Agency		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MT04 / <i>BMDS Test Program</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<p align="right"><i>Articles:</i></p> <p><b>Description:</b> USINDOPACOM Joint Emergent Operational Need Statement (JEON) Testing. - Continue flight and ground testing associated with USINDOPACOM JEON program per IMTP schedule.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p><b>FY 2020 Plans:</b> - Continue flight and ground testing associated with USINDOPACOM JEON program per IMTP schedule.</p> <p><b>FY 2021 Plans:</b> - Complete testing for USINDOPACOM JEON</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Increase from FY 2020 to FY 2021 provides for completion of testing associated with USINDOPACOM JEON.</p>	-	-	-
<b>Accomplishments/Planned Programs Subtotals</b>	465.268	371.710	354.569

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

<b>Line Item</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b> <b>Base</b>	<b>FY 2021</b> <b>OCO</b>	<b>FY 2021</b> <b>Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To</b> <b>Complete</b>	<b>Total Cost</b>
• 0603890C: <i>BMD Enabling Programs</i>	614.855	634.449	599.380	-	599.380	552.815	544.582	560.863	582.675	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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Missile Defense Agency												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603914C / Ballistic Missile Defense Test				MT04 / BMDS Test Program							
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
<b>Subtotal</b>			-	-	-	-	-	-	-	-	-	-	-	-	N/A
<b>Remarks</b>															
N/A															
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
<b>Subtotal</b>			-	-	-	-	-	-	-	-	-	-	-	-	N/A
<b>Remarks</b>															
N/A															
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Program Planning and Operations - IMTP Planning and Data Management Tools	C/FP	Various : AL	140.088	0.000		0.000		0.000		-		0.000	0.000	140.088	0.000
Program Planning and Operations - Lab Analysis Infrastructure	MIPR	MIT-LL/Aerospace : AL/CA/MA	73.204	0.000		0.000		0.000		-		0.000	0.000	73.204	0.000
Program Planning and Operations - Operational Test Agency	MIPR	ATEC/Aberdeen Proving Grounds : MD	97.252	20.975	Nov 2018	21.624	Nov 2019	24.860	Nov 2020	-		24.860	Continuing	Continuing	Continuing
Program Planning and Operations - Support to Flight Testing	C/CPAF	Northrop Grumman/ Lockheed Martin : AL/CO	72.822	0.000		0.000		0.000		-		0.000	0.000	72.822	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Missile Defense Agency												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603914C / Ballistic Missile Defense Test				MT04 / BMDS Test Program							
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Program Planning and Operations - Support to Ground Testing	C/CPAF	MDIOC/JRDC/IRES/ Northrop Grumman : AL/CO/VA/DC	28.675	0.000		0.000		0.000		-		0.000	0.000	28.675	0.000
Program Planning and Operations - Support to Test Resources	C/CPAF	Various : AL	30.969	0.000		0.000		0.000		-		0.000	0.000	30.969	0.000
Program Planning and Operations - Test Functional Management Office	C/CPFF	Various : AL/VA/CO/ MA	352.187	74.116	Nov 2018	73.841	Nov 2019	68.542	Nov 2020	-		68.542	Continuing	Continuing	Continuing
Flight Test - IMTP Flight Testing	MIPR	94th AMDC/AFGSC/ H'ville Operations Support Center/ NAWC/NRL/Ronald Reagan Test Site /NAVWAR/ Vandenberg AFB/ WSMR/CCDC AVMC/NSWC/ PMRF/611th CES/611th ASUS/ AEDC : AL/CA/CO/ HI	264.502	45.181	Oct 2018	38.786	Oct 2019	15.398	Oct 2020	-		15.398	Continuing	Continuing	Continuing
Ground Test - Ground Test Infrastructure	MIPR	Naval Information Warfare Systems Command : AL/CA	0.000	47.576	Oct 2018	69.411	Oct 2019	60.270	Oct 2020	-		60.270	Continuing	Continuing	Continuing
Ground Test - IMTP Ground Testing	MIPR	Aviation & Missile Research & Development/LTPO/ Naval Information Warfare Systems Command : AL/CO/ CA	59.246	5.572	Oct 2018	8.810	Oct 2019	1.632	Oct 2020	-		1.632	Continuing	Continuing	Continuing
Test Infrastructure - Ground Test Infrastructure	MIPR	Naval Information Warfare Systems Command : AL/CA	27.501	0.000		0.000		0.000		-		0.000	0.000	27.501	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Missile Defense Agency												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603914C / Ballistic Missile Defense Test				MT04 / BMDS Test Program							
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Test Infrastructure - Airborne Optics Mobile Assets	C/IDIQ	Various : L3/JHU/APL/TX/MD/AZ/TN	208.063	63.677	Feb 2019	24.424	Feb 2020	11.668	Feb 2021	-		11.668	Continuing	Continuing	Continuing
Test Infrastructure - Core Ground Test Labs and HWILS	C/IDIQ	Colsa/CCDC Aviation & Missile Center : AL/MD/FL/CA/OH/CO	193.698	0.000		0.000		0.000		-		0.000	0.000	193.698	0.000
Test Infrastructure - Enhanced GT Capability Assets	C/IDIQ	Colsa/Northrop Grumman : AL/CO/FL/MD/HI	41.604	0.000		0.000		0.000		-		0.000	0.000	41.604	0.000
Test Infrastructure - Facilities Sustainment, Restoration & Modernization	MIPR	SMDC/Northrop Grumman/Colsa : AL/CO/NM	21.803	26.049	Nov 2018	0.000		0.608	Nov 2020	-		0.608	Continuing	Continuing	Continuing
Test Infrastructure - Flight Test Communications	C/IDIQ	ASI/WSMR : Gray Research/NRL/NAWC/CA/MD/NCR/NM/AL/MA	116.393	28.932	Nov 2018	21.015	Nov 2019	32.434	Nov 2020	-		32.434	Continuing	Continuing	Continuing
Test Infrastructure - Flight Test Ranges	C/IDIQ	SMDC/SNL/PMRF : NAWC/WSMR/AMRDEC/NG/AK/AL/CA/HI/NM/CO	87.491	13.654	Nov 2018	13.807	Nov 2019	13.186	Nov 2020	-		13.186	Continuing	Continuing	Continuing
Test Infrastructure - IMTP Planning & Data Management Tools	C/FP	Various : AL	18.894	28.809	Nov 2018	33.725	Nov 2019	31.131	Nov 2020	-		31.131	Continuing	Continuing	Continuing
Test Infrastructure - Sea Based Mobile Assets	MIPR	MARAD/NAWC/Hanscom AFB : AL/CA/MD/NCR/NM/MA	98.218	14.100	Nov 2018	21.618	Nov 2019	26.385	Nov 2020	-		26.385	Continuing	Continuing	Continuing
Test Infrastructure - Support to Test Resources	MIPR	Various : AL	146.104	0.000		0.000		0.000		-		0.000	0.000	146.104	0.000
Engineering and Test Analysis - CSS Support	C/CPFF	Various : AL	28.519	6.196	Nov 2018	6.517	Nov 2019	6.624	Nov 2020	-		6.624	Continuing	Continuing	Continuing
Engineering and Test Analysis - FFRDA/UARC 2	MIPR	Aerospace : CA	0.755	0.085	Nov 2018	0.000		0.000		-		0.000	0.000	0.840	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Missile Defense Agency** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MT04 / <i>BMDS Test Program</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering and Test Analysis - FFRDC/UARC	MIPR	MITRE : VA	3.187	0.000		0.000		0.000		-		0.000	0.000	3.187	0.000
Engineering and Test Analysis - Industry Support	C/CPAF	Boeing : AL	24.303	2.392	Nov 2018	0.000		0.000		-		0.000	0.000	26.695	0.000
Engineering and Test Analysis - Industry Support - NME	C/CPAF	Northrop Grumman-JRDC : CO, AL	1.848	0.200	Nov 2018	0.000		0.000		-		0.000	0.000	2.048	0.000
Engineering and Test Analysis - Industry Support 2	C/CPAF	COLSA : AL, CO	0.000	0.000		2.332	Nov 2019	2.040	Nov 2020	-		2.040	Continuing	Continuing	Continuing
Engineering and Test Analysis - OGA Support	MIPR	CCDC Aviation & Missile Center : AL	90.983	15.854	Nov 2018	18.200	Nov 2019	12.627	Nov 2020	-		12.627	Continuing	Continuing	Continuing
Engineering and Test Analysis - OGA Support - NME	MIPR	LTPO : AL	5.114	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
USINDOPACOM Joint Emerging Operational Needs Statement (JEONS) - USINDOPACOM - JEON	SS/IDIQ	Lockheed Martin : Sunnyvale CA/ Huntsville, AL	12.200	71.900	Nov 2018	17.600	Nov 2019	47.164	Nov 2020	-		47.164	Continuing	Continuing	Continuing
<b>Subtotal</b>			2,245.623	465.268		371.710		354.569		-		354.569	Continuing	Continuing	N/A

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

<b>Management Services (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	N/A

**Remarks**  
 N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2021 Missile Defense Agency								<b>Date:</b> February 2020			
<b>Appropriation/Budget Activity</b> 0400 / 4				<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>				<b>Project (Number/Name)</b> MT04 / <i>BMDS Test Program</i>			
	<b>Prior Years</b>	<b>FY 2019</b>		<b>FY 2020</b>		<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	2,245.623	465.268		371.710		354.569	-	354.569	Continuing	Continuing	N/A

**Remarks**

Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2021 Missile Defense Agency** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MT04 / <i>BMDS Test Program</i>
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	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 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025					
FTM-45 (AEGIS 5.1, DT Intercept Flight Test)	▲														
FTI-03 (OTA, OT Intercept Flight Test)	▲														
FTG-11 (OT) (GM, OT Intercept Flight Test)	▲														
GT-18 Sprint 3 (N/P) (BMDS Ground Test)			◆												
AST-17	▲														
AST-18	▲														
FTX-34 (AEGIS AA, DT Tracking Exercise Flight Test)	▲														
FS-19 E1 (AEGIS 5.1, DT Interceptor Only Flight Test)				▲											
FS-19 E2 (AEGIS 5.1, DT Target Only Flight Test)				▲											
FS-19 E3 (AEGIS 5.1, DT Target Only Flight Test)				▲											
FS-19 E4 (AEGIS 5.1, DT Intercept Flight Test)				▲											
GTI-19 Sprint 1 (N/P) (BMDS Ground Test)				◆											
GTD-07b (N/P) (BMDS Ground Test)				◆											
FTM-31 E2 (AEGIS 5.1, DT Intercept Flight Test)					▲										
FTT-23 (TH, DT Intercept Flight Test)					▲										
GTI-19 Sprint 2 (JEON) (BMDS Ground Test)					◆										
Warfighter TP 07b (BMDS Ground Test)					◆										
FTP-16 E1 (I8-1) (OTHER, DT Intercept Flight Test)					▲										
GTI-19 Sprint 3 (BMDS Ground Test)					◆										
FTA-01 E1					▲										
FTA-01 E2					▲										
FTA-01 E3					▲										
GTI-19 Sprint 4 (E/C) (BMDS Ground Test)					◆										
GTI-07c (N/I) (BMDS Ground Test)														◆	

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2021 Missile Defense Agency **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MT04 / <i>BMDS Test Program</i>
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	Significant Event Complete ▲			Milestone Decision Complete ★			Element Test Complete ◆			System Level Test Complete ●			Complete Activity ◆								
	Significant Event Planned △			Milestone Decision Planned ☆			Element Test Planned ◇			System Level Test Planned ○			Planned Activity ◇								
	FY 2019			FY 2020			FY 2021			FY 2022			FY 2023			FY 2024			FY 2025		
FTX-39 (LTPO, DT Target Only Flight Test)				▲																	
FTP-16 E2 (I8-1) (OTHER, DT Intercept Flight Test)				▲																	
Israeli Cooperative Intercept Flight Test - FY 2020				◇	◇	◇	◇														
FEX-01 (OTHER, DT Tracking Exercise FT)				◇	◇	◇	◇														
HAWC-4 (OTHER, DT Tracking Exercise Flight Test)				◇	◇	◇	◇														
TBG-1 (OTHER, DT Tracking Exercise Flight Test)				◇	◇	◇	◇														
Israeli Cooperative Intercept Flight Test - FY 2019 Retest				◇	◇	◇	◇														
HAWC-5 (OTHER, DT Tracking Exercise Flight Test)				◇	◇	◇	◇														
HAWC-7 (OTHER, DT Tracking Exercise Flight Test)				◇	◇	◇	◇														
Other Flight Test Not Identified				◇	◇	◇	◇	◇	◇	◇	◇	◇									
FTM-32 (AEGIS SBT, DT/OT Intercept Flight Test)					△																
FTP-27 E1 (LTPO, DT/OT Flight Test)					△																
GTI-20 Sprint 2 (JEON) (BMDS Ground Test)					◇																
GTI-20 Sprint 1(E/C) (BMDS Ground Test)					◇																
FTP-27 E2 (LTPO, DT/OT Flight Test)					△																
GTD-07b (AA) (BMDS Ground Test)						◇															
FTM-44 (AEGIS 5.1, DT Intercept Flight Test)						△															
FTM-31 E1 (AEGIS SBT, DT/OT Intercept Flight Test)						△															
FTM-30 (AEGIS 5.1, DT/OT Intercept Flight Test)							△														
FTP-17 E1 (I8-2.1) (OTHER, DT Intercept Flight Test)							△														
FTP-17 E2 (I8-2.1) (OTHER, DT Intercept Flight Test)							△														
TH CTV-01 (LTPO, DT Interceptor Only Flight Test)								△													
FTP-21 (P8.1.1)(LTPO, DT Intercept Flight Test)								△													
GM BVT-03 (GM, DT Interceptor Only Flight Test)								△													

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**Exhibit R-4, RDT&E Schedule Profile: PB 2021 Missile Defense Agency** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MT04 / <i>BMDS Test Program</i>
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	Significant Event Complete ▲			Milestone Decision Complete ★			Element Test Complete ◆			System Level Test Complete ●			Complete Activity ◆		
	Significant Event Planned △			Milestone Decision Planned ☆			Element Test Planned ◇			System Level Test Planned ○			Planned Activity ◇		
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025								
GTI-08a (N/I) (BMDS Ground Test)			◇												
FTM-33 (AEGIS SBT, DT/OT Intercept Flight Test)			△												
Israeli Cooperative Intercept Flight Test - FY 2021			◇	◇	◇	◇									
TBG-2 (OTHER, DT Tracking Exercise Flight Test)			◇	◇	◇	◇									
GTI-09 Sprint 1 (E/C) (BMDS Ground Test)			◇												
FTT-21 (TH, DT Intercept Flight Test)			△												
GTI-21 Sprint 1 (JEON) TH 4.0 (BMDS Ground Test)			◇												
GTD-08a (N/I) (BMDS Ground Test)			◇	◇											
FTX-26 (OT) (SN, OT Target Only Flight Test)					△										
GTI-09 Sprint 2 (E/C) (BMDS Ground Test)			◇												
FS-21 E1 (AEGIS 5.1, DT Interceptor Only Flight Test)					△										
FS-21 E2 (AEGIS 5.1, DT Target Only Flight Test)					△										
FS-21 E3 (AEGIS 5.1, DT Target Only Flight Test)					△										
FS-21 E4 (AEGIS 5.1, DT Intercept Flight Test)					△										
FTX-42 (OTHER, DT Target Only Flight Test)					△										
GTI-ISR (21) (BMDS Ground Test)						◇									
FTP-23 (LTPO, DT/OT Intercept Flight Test)						△									
FTP-24 (LTPO, DT Intercept Flight Test)						△									
GTD-09 (E/C) (BMDS Ground Test)						◇									
FTM-46 (BIK IIA decision)								△							
GTI-08b Sprint 1 (N/I) (BMDS Ground Test)						◇									
Israeli Cooperative Intercept Flight Test - FY 2022						◇	◇	◇	◇						
JFTM-07 E1 (JAPAN, DT Intercept Flight Test)								△							
JFTM-07 E2 (JAPAN, DT Intercept Flight Test)								△							

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**Exhibit R-4, RDT&E Schedule Profile: PB 2021 Missile Defense Agency** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MT04 / <i>BMDS Test Program</i>
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	Significant Event Complete ▲			Milestone Decision Complete ★			Element Test Complete ◆			System Level Test Complete ●			Complete Activity ◆		
	Significant Event Planned △			Milestone Decision Planned ☆			Element Test Planned ◇			System Level Test Planned ○			Planned Activity ◇		
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025								
GM CTV-03+ (GM, DT Interceptor Only Flight Test)				△											
FTP-18 (I8-3) (LTPO, OT Intercept Flight Test)				△											
FTP-19 (I8-4) (LTPO, DT Intercept Flight Test)				△											
FTP-20 (I8-5) (LTPO, OT Intercept Flight Test)				△											
FTP-25 (LTPO, OT Intercept Flight Test)				△											
FTT-25 (TH Intercept Flight Test)				△											
GTI-ASI (22)				◇											
GTI-08b Sprint 2 (N/I) (BMDS Ground Test)				◇											
FTX-40 (AEGIS 5.1, DT Tracking Exercise Flight Test)					△										
Pacific Dragon-22 (Interoperability Japan)					△										
GTD-08b (N/I) (BMDS Ground Test)					◇										
FTG-17 (GM, DT Intercept Flight Test)						△									
FTM-37 (OT) (AEGIS 5.4.1, OT Intercept Flight Test)						△									
FTX-23 (AEGIS 5.1, DT Target Only Flight Test)						△									
Israeli Cooperative Intercept Flight Test - FY 2023						◇	◇	◇	◇						
GTI-10 Sprint 1 (E/C) (BMDS Ground Test)						◇	◇								
GTI-11 Sprint 1 (N/I) (BMDS Ground Test)						◇	◇								
FTM-38 (AEGIS 5.0, DT/OT Intercept Flight Test)							△								
FTT-24 (TH, DT Intercept Flight Test)							△								
GTI-11 Sprint 2 (N/I) (BMDS Ground Test)							◇	◇							
FTX-28 E1-E3 (TH, DT Target Only Flight Test)								△							
GTD-11 (N/I) (BMDS Ground Test)									◇						
GTI-ISR (23) (BMDS Ground Test)										◇					
FTM-43 (AEGIS 5.1, DT/OT Intercept Flight Test)											△				

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**Exhibit R-4, RDT&E Schedule Profile: PB 2021 Missile Defense Agency** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MT04 / <i>BMDS Test Program</i>
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ◆
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ◇

	FY 2019		FY 2020		FY 2021		FY 2022		FY 2023		FY 2024		FY 2025	
FTG-18 (GM, DT/OT Intercept Flight Test)												△		
FTX-38 (AEGIS BL 10 (BMD 6.0) Test)												△		
JFTX-01 E1 (JAPAN, DT/OT Target Only Flight Test)												△		
JFTX-01 E2 (JAPAN, DT/OT Target Only Flight Test)												△		
Israeli Cooperative Intercept Flight Test - FY 2024											◇	◇	◇	◇
GTI-10 Sprint 2 (E/C) (BMDS Ground Test)												◇		
FTM-40 (AEGIS BL 10 (BMD 6.0) Test)												△		
GTI-ASI (24) (BMDS Ground Test)												◇		
GTD-10 (E/C) (BMDS Ground Test)												◇		
FTM-41 (AEGIS BL 10 (BMD 6.0) Tests)												△		
FTT-22 (TH Intercept Flight Test)												△		
GTI-13 Sprint 1 (N/I) (BMDS Ground Test)													◇	
GTI-12 Sprint 1 (E/C) (BMDS Ground Test)														◇
FTO-04 (GM, OT Intercept Flight Test)													△	
GTI-13 Sprint 2 (N/I) (BMDS Ground Test)														◇
GTI-ISR (25) (BMDS Ground Test)														◇
GTI-12 Sprint 2 (E/C) (BMDS Ground Test)														◇
FTM-39 (AEGIS 5.1, OT Intercept Flight Test)														△
FTM-42 (AEGIS 5.1, DT/OT Intercept Flight Test)														△
GTD-13 (N/I) (BMDS Ground Test)														◇
FTM-35 (Aegis BL9 FOT&E)														
GTD-12 (E/C) (BMDS Ground Test)														
GTI-ASI (26) (BMDS Ground Test)														
FTO-05 (OTA, OT Intercept Flight Test)														

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2021 Missile Defense Agency **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MT04 / <i>BMDS Test Program</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTM-45 (AEGIS 5.1, DT Intercept Flight Test)	1	2019	1	2019
FTI-03 (OTA, OT Intercept Flight Test)	1	2019	1	2019
FTG-11 (OT) (GM, OT Intercept Flight Test)	2	2019	2	2019
GT-18 Sprint 3 (N/P) (BMDS Ground Test)	2	2019	2	2019
AST-17	2	2019	2	2019
AST-18	2	2019	2	2019
FTX-34 (AEGIS AA, DT Tracking Exercise Flight Test)	2	2019	2	2019
FS-19 E1 (AEGIS 5.1, DT Interceptor Only Flight Test)	3	2019	3	2019
FS-19 E2 (AEGIS 5.1, DT Target Only Flight Test)	3	2019	3	2019
FS-19 E3 (AEGIS 5.1, DT Target Only Flight Test)	3	2019	3	2019
FS-19 E4 (AEGIS 5.1, DT Intercept Flight Test)	3	2019	3	2019
GTI-19 Sprint 1 (N/P) (BMDS Ground Test)	3	2019	3	2019
GTD-07b (N/P) (BMDS Ground Test)	3	2019	3	2019
FTM-31 E2 (AEGIS 5.1, DT Intercept Flight Test)	4	2019	4	2019
FTT-23 (TH, DT Intercept Flight Test)	4	2019	4	2019
GTI-19 Sprint 2 (JEON) (BMDS Ground Test)	4	2019	4	2019
Warfighter TP 07b (BMDS Ground Test)	4	2019	4	2019
FTP-16 E1 (I8-1) (OTHER, DT Intercept Flight Test)	4	2019	4	2019
GTI-19 Sprint 3 (BMDS Ground Test)	4	2019	4	2019
FTA-01 E1	4	2019	4	2019
FTA-01 E2	4	2019	4	2019
FTA-01 E3	4	2019	4	2019

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2021 Missile Defense Agency **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MT04 / <i>BMDS Test Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
GTI-19 Sprint 4 (E/C) (BMDS Ground Test)	4	2019	4	2019
GTI-07c (N/I) (BMDS Ground Test)	1	2020	1	2020
FTX-39 (LTPO, DT Target Only Flight Test)	1	2020	1	2020
FTP-16 E2 (I8-1) (OTHER, DT Intercept Flight Test)	1	2020	1	2020
Israeli Cooperative Intercept Flight Test - FY 2020	1	2020	4	2020
FEX-01 (OTHER, DT Tracking Exercise FT)	1	2020	4	2020
HAWC-4 (OTHER, DT Tracking Exercise Flight Test)	1	2020	4	2020
TBG-1 (OTHER, DT Tracking Exercise Flight Test)	1	2020	4	2020
Israeli Cooperative Intercept Flight Test - FY 2019 Retest	1	2020	4	2020
HAWC-5 (OTHER, DT Tracking Exercise Flight Test)	1	2020	4	2020
HAWC-7 (OTHER, DT Tracking Exercise Flight Test)	1	2020	4	2020
Other Flight Test Not Identified	1	2020	4	2021
FTM-32 (AEGIS SBT, DT/OT Intercept Flight Test)	2	2020	2	2020
FTP-27 E1 (LTPO, DT/OT Flight Test)	2	2020	2	2020
GTI-20 Sprint 2 (JEON) (BMDS Ground Test)	2	2020	2	2020
GTI-20 Sprint 1(E/C) (BMDS Ground Test)	2	2020	2	2020
FTP-27 E2 (LTPO, DT/OT Flight Test)	2	2020	2	2020
GTD-07b (AA) (BMDS Ground Test)	3	2020	3	2020
FTM-44 (AEGIS 5.1, DT Intercept Flight Test)	3	2020	3	2020
FTM-31 E1 (AEGIS SBT, DT/OT Intercept Flight Test)	3	2020	3	2020
FTM-30 (AEGIS 5.1, DT/OT Intercept Flight Test)	4	2020	4	2020
FTP-17 E1 (I8-2.1) (OTHER, DT Intercept Flight Test)	4	2020	4	2020
FTP-17 E2 (I8-2.1) (OTHER, DT Intercept Flight Test)	4	2020	4	2020
TH CTV-01 (LTPO, DT Interceptor Only Flight Test)	1	2021	1	2021
FTP-21 (P8.1.1)(LTPO, DT Intercept Flight Test)	1	2021	1	2021

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2021 Missile Defense Agency **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MT04 / <i>BMDS Test Program</i>
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<b>Events</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
GM BVT-03 (GM, DT Interceptor Only Flight Test)	1	2021	1	2021
GTI-08a (N/I) (BMDS Ground Test)	1	2021	1	2021
FTM-33 (AEGIS SBT, DT/OT Intercept Flight Test)	1	2021	1	2021
Israeli Cooperative Intercept Flight Test - FY 2021	1	2021	4	2021
TBG-2 (OTHER, DT Tracking Exercise Flight Test)	1	2021	4	2021
GTI-09 Sprint 1 (E/C) (BMDS Ground Test)	2	2021	2	2021
FTT-21 (TH, DT Intercept Flight Test)	2	2021	2	2021
GTI-21 Sprint 1 (JEON) TH 4.0 (BMDS Ground Test)	2	2021	2	2021
GTD-08a (N/I) (BMDS Ground Test)	2	2021	3	2021
FTX-26 (OT) (SN, OT Target Only Flight Test)	3	2021	3	2021
GTI-09 Sprint 2 (E/C) (BMDS Ground Test)	3	2021	3	2021
FS-21 E1 (AEGIS 5.1, DT Interceptor Only Flight Test)	3	2021	3	2021
FS-21 E2 (AEGIS 5.1, DT Target Only Flight Test)	3	2021	3	2021
FS-21 E3 (AEGIS 5.1, DT Target Only Flight Test)	3	2021	3	2021
FS-21 E4 (AEGIS 5.1, DT Intercept Flight Test)	3	2021	3	2021
FTX-42 (OTHER, DT Target Only Flight Test)	3	2021	3	2021
GTI-ISR (21) (BMDS Ground Test)	4	2021	4	2021
FTP-23 (LTPO, DT/OT Intercept Flight Test)	4	2021	4	2021
FTP-24 (LTPO, DT Intercept Flight Test)	4	2021	4	2021
GTD-09 (E/C) (BMDS Ground Test)	4	2021	4	2021
FTM-46 (Blk IIA decision)	1	2022	1	2022
GTI-08b Sprint 1 (N/I) (BMDS Ground Test)	1	2022	1	2022
Israeli Cooperative Intercept Flight Test - FY 2022	1	2022	4	2022
JFTM-07 E1 (JAPAN, DT Intercept Flight Test)	2	2022	2	2022
JFTM-07 E2 (JAPAN, DT Intercept Flight Test)	2	2022	2	2022

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2021 Missile Defense Agency **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MT04 / <i>BMDS Test Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
GM CTV-03+ (GM, DT Interceptor Only Flight Test)	2	2022	2	2022
FTP-18 (I8-3) (LTPO, OT Intercept Flight Test)	2	2022	2	2022
FTP-19 (I8-4) (LTPO, DT Intercept Flight Test)	2	2022	2	2022
FTP-20 (I8-5) (LTPO, OT Intercept Flight Test)	2	2022	2	2022
FTP-25 (LTPO, OT Intercept Flight Test)	3	2022	3	2022
FTT-25 (TH Intercept Flight Test)	3	2022	3	2022
GTI-ASI (22)	3	2022	3	2022
GTI-08b Sprint 2 (N/I) (BMDS Ground Test)	3	2022	3	2022
FTX-40 (AEGIS 5.1, DT Tracking Exercise Flight Test)	4	2022	4	2022
Pacific Dragon-22 (Interoperability Japan)	4	2022	4	2022
GTD-08b (N/I) (BMDS Ground Test)	4	2022	4	2022
FTG-17 (GM, DT Intercept Flight Test)	1	2023	1	2023
FTM-37 (OT) (AEGIS 5.4.1, OT Intercept Flight Test)	1	2023	1	2023
FTX-23 (AEGIS 5.1, DT Target Only Flight Test)	1	2023	1	2023
Israeli Cooperative Intercept Flight Test - FY 2023	1	2023	4	2023
GTI-10 Sprint 1 (E/C) (BMDS Ground Test)	2	2023	3	2023
GTI-11 Sprint 1 (N/I) (BMDS Ground Test)	2	2023	3	2023
FTM-38 (AEGIS 5.0, DT/OT Intercept Flight Test)	3	2023	3	2023
FTT-24 (TH, DT Intercept Flight Test)	3	2023	3	2023
GTI-11 Sprint 2 (N/I) (BMDS Ground Test)	3	2023	4	2023
FTX-28 E1-E3 (TH, DT Target Only Flight Test)	4	2023	4	2023
GTD-11 (N/I) (BMDS Ground Test)	4	2023	4	2023
GTI-ISR (23) (BMDS Ground Test)	4	2023	4	2023
FTM-43 (AEGIS 5.1, DT/OT Intercept Flight Test)	4	2023	4	2023
FTG-18 (GM, DT/OT Intercept Flight Test)	1	2024	1	2024

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2021 Missile Defense Agency **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MT04 / <i>BMDS Test Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
FTX-38 (AEGIS BL 10 (BMD 6.0) Test)	1	2024	1	2024
JFTX-01 E1 (JAPAN, DT/OT Target Only Flight Test)	1	2024	1	2024
JFTX-01 E2 (JAPAN, DT/OT Target Only Flight Test)	1	2024	1	2024
Israeli Cooperative Intercept Flight Test - FY 2024	1	2024	4	2024
GTI-10 Sprint 2 (E/C) (BMDS Ground Test)	2	2024	2	2024
FTM-40 (AEGIS BL 10 (BMD 6.0) Test)	2	2024	2	2024
GTI-ASI (24) (BMDS Ground Test)	2	2024	2	2024
GTD-10 (E/C) (BMDS Ground Test)	3	2024	3	2024
FTM-41 (AEGIS BL 10 (BMD 6.0) Tests)	3	2024	3	2024
FTT-22 (TH Intercept Flight Test)	3	2024	3	2024
FTX-41 (Aegis BL10, SPY-6)	3	2024	3	2024
GTI-13 Sprint 1 (N/I) (BMDS Ground Test)	4	2024	4	2024
GTI-12 Sprint 1 (E/C) (BMDS Ground Test)	1	2025	1	2025
FTO-04 (GM, OT Intercept Flight Test)	1	2025	1	2025
GTI-13 Sprint 2 (N/I) (BMDS Ground Test)	2	2025	2	2025
GTI-ISR (25) (BMDS Ground Test)	2	2025	3	2025
GTI-12 Sprint 2 (E/C) (BMDS Ground Test)	3	2025	3	2025
FTM-39 (AEGIS 5.1, OT Intercept Flight Test)	4	2025	4	2025
FTM-42 (AEGIS 5.1, DT/OT Intercept Flight Test)	4	2025	4	2025
GTD-13 (N/I) (BMDS Ground Test)	4	2025	4	2025
FTM-35 (Aegis BL9 FOT&E)	1	2026	1	2026
GTD-12 (E/C) (BMDS Ground Test)	1	2026	1	2026
GTI-ASI (26) (BMDS Ground Test)	3	2026	3	2026
FTO-05 (OTA, OT Intercept Flight Test)	4	2026	4	2026

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Missile Defense Agency										<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>				<b>Project (Number/Name)</b> MC04 / <i>Cyber Operations</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
MC04: <i>Cyber Operations</i>	22.251	30.419	12.524	8.706	-	8.706	8.800	8.802	9.069	9.256	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

N/A

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

Ballistic Missile Defense (BMD) Test Cyber Operations sustain Missile Defense Agency (MDA) Risk Management Framework (RMF) Standards, Computer Network Defense Service Provider and Controls Validation Testing activities: 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&Ms 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)**

	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<b>Title:</b> Network / System Certification and Accreditation (C&A)	30.419	12.524	8.706
<b>Articles:</b>	-	-	-
<b>Description:</b> 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.			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Missile Defense Agency		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MC04 / <i>Cyber Operations</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<ul style="list-style-type: none"> <li>- Leverage Cross Domain Solution (CDS) as single authority implementing standard security policies for test and across the BMDS.</li> <li>- 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.</li> <li>- Continue to define cyber security investments, risks and benefits used to reduce vulnerabilities and protect critical administrative and test data.</li> </ul> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p><b>FY 2020 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue upgrades to cybersecurity infrastructure.</li> </ul> <p><b>FY 2021 Plans:</b></p> <ul style="list-style-type: none"> <li>- SEE ABOVE.</li> </ul> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b></p> <p>Decrease in FY 2021 reflects Congressional plus-ups in FY 2019 and FY 2020.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	30.419	12.524	8.706

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Missile Defense Agency** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MC04 / <i>Cyber Operations</i>
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<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2019</b>		<b>FY 2020</b>		<b>FY 2021 Base</b>		<b>FY 2021 OCO</b>		<b>FY 2021 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Network / System Certification and Accreditation (C&A) - Cybersecurity Civ	MIPR	MDA : Various	1.697	0.454	Nov 2018	0.494	Oct 2019	0.520	Oct 2020	-		0.520	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Cybersecurity Operations	MIPR	Teledyne Brown/ CCDC Aviation & Missile Center : AL	11.159	5.170	Oct 2018	8.520	Nov 2019	4.319	Nov 2020	-		4.319	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Cybersecurity Support	C/IDIQ	Torch Technologies : Various	9.395	24.795	Oct 2018	3.510	Nov 2019	3.867	Nov 2020	-		3.867	Continuing	Continuing	Continuing
<b>Subtotal</b>			22.251	30.419		12.524		8.706		-		8.706	Continuing	Continuing	N/A

**Remarks**  
N/A

	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	22.251	30.419	12.524	8.706	-	8.706	Continuing	Continuing	N/A

**Remarks**  
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2021 Missile Defense Agency** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MC04 / <i>Cyber Operations</i>
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	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
MC04 Cyber Operations	◆	◆	◆	◆			
MC04 Cyber Operations Planned		◇	◇	◇	◇	◇	◇

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Missile Defense Agency		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MC04 / <i>Cyber Operations</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC04 Cyber Operations	1	2019	4	2019
MC04 Cyber Operations Planned	1	2020	4	2025

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Missile Defense Agency										<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>				<b>Project (Number/Name)</b> MD40 / <i>Program Wide Support</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
MD40: <i>Program Wide Support</i>	103.124	14.605	15.504	15.027	-	15.027	15.314	15.944	20.211	22.760	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Program Wide Support (PWS) is allocated on a pro-rata basis across multiple Agency Program Element (PEs) each Fiscal Year (FY) based on the total Agency budget, and therefore fluctuates per PE by FY.

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

PWS contains non-headquarters management costs in support of MDA functions and activities across the entire MDS. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the MDS as well as supports MDA in the development and evaluation of technologies that will respond to the changing threat. Additionally, PWS includes personnel to support global deployments performing deployment site preparation and activation, and provides facility capabilities for MDA Executing Agent locations worldwide. Other MDA wide costs include: 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 across multiple geographic locations; commercial and ancillary facility services; management of all facility aspects regardless of lifecycle stage; supplies and maintenance; compliance with statutory environmental requirements; data and unified communications support; materiel and readiness and central property management of equipment; Facilities Sustainment, Restoration and Modernization (FSRM) program, (formerly Real Property Maintenance) to keep the Department's inventory of facilities in good working order; and similar operating expenses. PWS is allocated on a pro-rata basis across most Agency PEs and therefore fluctuates per PE by fiscal year based on the total Agency budget in that fiscal year.

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

	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<b>Title:</b> Program Wide Support	14.605	15.504	15.027
<b>Articles:</b>	-	-	-
<b>Description:</b> PWS contains non-headquarters management costs in support of MDA functions and activities across the entire MDS. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the MDS as well as supports MDA in the development and evaluation of technologies that will respond to the changing threat. Additionally, PWS includes personnel to support global deployments performing deployment site preparation and activation, and provides facility capabilities for MDA Executing Agent locations worldwide. Other MDA wide costs include: 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 across multiple geographic locations; commercial and ancillary facility services; management of all facility aspects regardless of lifecycle stage; supplies and maintenance; compliance with statutory environmental requirements; data and unified communications support; materiel and readiness and central property management of equipment; Facilities Sustainment,			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Missile Defense Agency		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MD40 / <i>Program Wide Support</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
Restoration and Modernization (FSRM) program, (formerly Real Property Maintenance) to keep the Department's inventory of facilities in good working order; and similar operating expenses. PWS is allocated on a pro-rata basis across most Agency PEs and therefore fluctuates per PE by fiscal year based on the total Agency budget in that fiscal year.			
<b><i>FY 2020 Plans:</i></b> - SEE ABOVE.			
<b><i>FY 2021 Plans:</i></b> - SEE ABOVE.			
<b><i>FY 2020 to FY 2021 Increase/Decrease Statement:</i></b> N/A			
<b>Accomplishments/Planned Programs Subtotals</b>	14.605	15.504	15.027

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Missile Defense Agency												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603914C / Ballistic Missile Defense Test				MD40 / Program Wide Support							
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Program Wide Support - Agency Operations Management	Various	Various : Multi: AL, CA, CO, VA	5.123	0.221	Jul 2019	0.232	Jul 2020	0.883	Jul 2021	-		0.883	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	Various : Multi: AL, CA, CO, VA	0.245	0.000		0.000		5.786	Nov 2020	-		5.786	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AL, CA, CO, VA	89.599	10.700	Mar 2019	15.272	May 2020	8.358	May 2021	-		8.358	Continuing	Continuing	Continuing
Program Wide Support - Facilities and Maintenance - SRM	MIPR	Various : Multi: AK,AL,CA,VA	8.157	3.684	Mar 2019	0.000		0.000		-		0.000	0.000	11.841	0.000
<b>Subtotal</b>			103.124	14.605		15.504		15.027		-		15.027	Continuing	Continuing	N/A
<b>Remarks</b>															
N/A															
<b>Project Cost Totals</b>			103.124	14.605		15.504		15.027		-		15.027	Continuing	Continuing	N/A
<b>Remarks</b>															
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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**Exhibit R-4, RDT&E Schedule Profile: PB 2021 Missile Defense Agency** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MD40 / <i>Program Wide Support</i>
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ◆							
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ◇							
					FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
MD40 Program-Wide Support					◇	◇	◇	◇	◇	◇	◇

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Missile Defense Agency		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603914C / <i>Ballistic Missile Defense Test</i>	<b>Project (Number/Name)</b> MD40 / <i>Program Wide Support</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2019	4	2025