

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>
---	--

COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	3,809.950	607.167	623.644	591.847	-	591.847	613.589	625.761	635.633	640.374	Continuing	Continuing
MD24: <i>System Engineering & Integration</i>	1,373.774	172.650	155.478	176.122	-	176.122	182.501	181.596	178.066	180.298	Continuing	Continuing
MD21: <i>Homeland Cruise Missile Defense Architecture</i>	-	3.050	13.921	10.852	-	10.852	7.067	4.246	4.342	4.429	Continuing	Continuing
MT23: <i>Enabling - Test</i>	171.055	48.554	41.520	44.245	-	44.245	44.122	47.282	48.477	49.627	Continuing	Continuing
MD28: <i>Intelligence & Security</i>	322.365	42.890	39.550	42.036	-	42.036	45.880	56.409	54.428	53.161	Continuing	Continuing
MD30: <i>BMD Information Management Systems</i>	651.993	83.053	92.729	87.822	-	87.822	92.382	92.318	96.775	95.478	Continuing	Continuing
MC30: <i>Cyber Operations</i>	274.974	62.539	103.565	81.519	-	81.519	89.048	91.568	95.843	97.761	Continuing	Continuing
MD31: <i>Modeling & Simulation</i>	429.428	103.029	82.277	72.045	-	72.045	74.020	71.968	73.626	73.910	Continuing	Continuing
MC31: <i>Engineering Cyber Operations</i>	54.144	34.252	41.975	24.978	-	24.978	25.209	26.661	27.193	27.745	Continuing	Continuing
MD32: <i>Quality, Safety, and Mission Assurance</i>	324.320	29.926	29.527	30.737	-	30.737	31.767	32.494	33.120	33.782	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	207.897	27.224	23.102	21.491	-	21.491	21.593	21.219	23.763	24.183	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note
 Decrease in funding from FY 2022 to FY2023 reflects the FY 2022 Congressional Plus-up for cybersecurity engineering, infrastructure improvements, and compliance with DOD Cybersecurity Discipline Implementation Plan.

A. Mission Description and Budget Item Justification
 The Missile Defense System (MDS) Enabling Programs provide critical products and processes needed to combine element missile defense capabilities into a single, integrated and layered System to counter existing threats and provide new defensive capabilities against emerging threats. Specifically, the Enabling Programs:

- Assess architecture alternatives and new technologies to address advanced threats, define MDS functional requirements, conduct Analyses of Alternatives (AoA) for the DoD, and provide engineering requirements, execution support, and pre- and post-mission analysis for System-level tests
- Provide System-level engineering required to develop and demonstrate Cruise Missile Defense of the Homeland
- Provide validated models and simulations for System assessment
- Assess and document System performance (through data collection and analysis) and deliver capabilities to the Warfighter

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Missile Defense Agency	Date: April 2022
---	-------------------------

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>
---	--

- Provide multi-disciplinary security and intelligence support for acquisition, development, test, and deployment of current and future MDS capabilities
- Identify potential threats and vulnerabilities to MDA and the MDS and develop and implement strategies to mitigate those risks
- Provide Information Management tools and products supporting the development of MDS capabilities while safeguarding networks and critical program information
- Provide MDA secure communication networks, IT systems, special purpose processing nodes, operations and monitoring centers, and disaster recovery and continuity of operations requirements
- Evaluate quality, technical safeguards, and mission assurance effectiveness
- Assess System ability to maintain integrity and superiority with advances in technology development

This Program Element also funds MDS threat discrimination capability development to enhance MDS effectiveness against the evolving adversary threat. The end result will be an MDS architecture more capable of identifying and destroying reentry vehicles with a higher degree of confidence, improving Warfighter shot doctrine, and more efficiently using interceptor inventory. MDS threat discrimination development is funded from the Enabling (0603890C); Midcourse (0603882C); BMD Sensors (0603884C); BMD Command, Control, Battle Management and Communications (C2BMC) (0603896C); and Aegis BMD (0603892C) PEs.

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	616.455	595.301	0.000	-	0.000
Current President's Budget	607.167	623.644	591.847	-	591.847
Total Adjustments	-9.288	28.343	591.847	-	591.847
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-16.487			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	44.830			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-11.688	0.000			
• Missile Defeat and Defense Enhancement	0.000	0.000	0.000	-	0.000
• Other Adjustment	2.400	0.000	591.847	-	591.847

Change Summary Explanation

Increase of \$44.8 million in FY 2022 provides the Congressional Plus-up for cybersecurity engineering and infrastructure improvements to protect MDS and MDA assets in the highly-contested cybersecurity threat environment. Decrease of \$16.4 million in FY 2022 reflects the Congressional reduction for unjustified growth for Layered Homeland Defense lack of validated requirement and acquisition strategy.

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency										Date: April 2022		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD24 / System Engineering & Integration			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MD24: System Engineering & Integration	1,373.774	172.650	155.478	176.122	-	176.122	182.501	181.596	178.066	180.298	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase in funding from FY 2022 to FY 2023 provides the Department of Defense architecture solution for Defense of Guam, and Next Generation Interceptor (NGI) lethality analysis tool development.

A. Mission Description and Budget Item Justification

System Engineering & Integration (SE&I) defines, designs, tests and integrates the MDS, and provides analysis, decision support and planning activities for real-world operations to the National Command Authority, Joint Staff, Military Services, Combatant Commanders, Operational Test Agencies, Director of Operational Test and Evaluation, Allies, and others.

The SE&I Major Program Goals are:

- Plan, design, develop, integrate, and test a layered MDS that provides the required performance
- Provide system-level engineering support to the MDS Elements, and lead collaborative cross-Element, cross-Component engineering
- Analyze architecture alternatives and new technologies, and develop requirements to respond to the proliferation of short, medium, and long range advanced missile threats
- Provide a more effective missile defense capability for U.S. deployed forces, allies, and partners, and enhance homeland defense
- Develop discrimination improvements for the Homeland and Regional Defense missions
- As technical authority for Integrated Air and Missile Defense (IAMD), provide a consistent, disciplined systems engineering process using a multi-Service team to integrate Joint IAMD systems
- Provide technical direction to Element and Component developers and provide System-level forums to track, assess, and improve hardware and software reliability
- Identify MDS capabilities and limitations
- Develop performance assessment requirements, verify MDS performance through testing, and conduct assessments to form the basis for capability deliveries in support of fielding decisions
- Identify critical conditions and data required to develop test campaigns to demonstrate MDS performance
- Define the test objectives necessary to anchor System-level models and simulations and enable independent verification and validation
- Identify System issues occurring in ground and flight tests and lead the effort to resolve them
- Ensure the MDS is complementary to and interoperable with North Atlantic Treaty Organization (NATO) and other theater systems
- Develop anti-tamper approaches to enable international fielding

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

The MDS threat discrimination improvements and countermeasures mitigation effort will develop and field integrated Element capabilities to improve the capability to identify lethal reentry vehicles and non-lethal threat objects. SE&I will conduct analysis and engineering to specify the MDS functional, performance, and interface requirements for achieving the improved capabilities.

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

	FY 2021	FY 2022	FY 2023
<p>Title: Requirements and Design</p> <p align="right">Articles:</p> <p>Description: The Requirements and Design effort develops Missile Defense System (MDS) level requirements and specifications and drives the integration of the MDS. Requirements and Design allocates requirements to MDS Elements and adjudicates Element level specifications to provide required capabilities for the Warfighter.</p> <ul style="list-style-type: none"> - Define MDS technical content expectations and develop system requirements to address evolving threats - Develop and allocate functional performance, interface, and design suitability requirements to Programs, in collaboration with MDS element engineers - Maintain and update Phased Implementation Plan to document integrated requirements for improvements to, or augmentations of, current system capabilities - Deliver system technical baseline updates to document integrated system build content as identified in the R-4 summary - Identify and resolve technical disconnects through the requirements trace process and element certifications; conduct engineering analyses and perform trade studies - Participate in Element Requirements Reviews to assess compliance with MDS design - Develop Specification Change Notices (SCN) for future requirements changes, to include mitigation strategies to address discrepancy reports - Ensure accurate reporting of Element functionality and software / hardware integration in the Missile Defense System Accountability Report (MDAR) and Director's Program Reviews - Assess and add emerging threats to MDA's lethality prediction models - Incorporate updates to lethality assessments, collateral effects, and consequences of intercept into the MDS Lethality Program Plan <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - Provide System-level engineering support for Next Generation Interceptor (NGI) development: <ul style="list-style-type: none"> -- Ensure NGI designs meet lethality requirements and conduct risk reduction activities: Develop and conduct lethality modeling and simulation, plan and conduct Light Gas Gun testing, collect data to anchor and validate developed models, and conduct analysis <p>FY 2023 Plans:</p>	33.547	35.983	38.295
	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023
- Conduct Next Generation Interceptor (NGI) lethality modeling and simulation to support performance assessment and test requirements development				
FY 2022 to FY 2023 Increase/Decrease Statement: N/A				
Title: Integrated Air and Missile Defense (IAMD)		15.789	17.991	21.576
Articles:		-	-	-
<p>Description: The IAMD effort provides a consistent, disciplined systems engineering process using a joint service systems engineering team to develop the technical requirements and capabilities necessary to support integration of joint service IAMD systems, implementing capabilities required by the Geographic Combatant Commands and the Services. Provides modeling, simulation and analysis of cross-Service kill chains using high-fidelity software-in-the-loop program office system representations. Analyzes, assesses, and translates identified Engagement Coordination Initial Capability Document requirements in to technical requirements for implementation within Services and Agency programs to improve Engagement Coordination and implement advanced fire control capabilities across the Joint Integrated Air and Missile Defense kill-chain. This effort includes systems engineering analysis, development of technical and interface control requirements and documents, definition of candidate Joint IAMD increments, development and demonstration of candidate Joint IAMD capabilities, IAMD M&S model improvements, support for Wargames and exercises, and support for configuration control across the joint systems. IAMD provides capabilities to improve performance such as an improved Joint air picture and advanced Joint Combat Identification (CID) to enable engagement coordination, decision making, increase battlespace, and improve track continuity. These improvements and capabilities will enable right sensor to right shooter functionality across the Joint Services. Additional efforts will address critical joint Command and Control and interoperability needs such as Joint Tactical Integrated Fire Control (JTIFC) and the development of a Joint Integrated Fire Controls (IFC) Network to enable the capability to provide fire control quality data from the right sensor to the right shooter to engage the right target; this includes ensuring that all activities are in alignment with the Joint All Domain Command and Control (JADC2) efforts. Other efforts include the development of an IAMD Operational Architecture, development of Advanced Tracker Capabilities (Advanced Track Filters and Advanced Data Association algorithms) to defend against advanced threats, Automated Battle Management Aides (ABMAs) to support Engagement Coordination and Sensor/Weapon resource management. The IAMD Technical Authority also supports USCENTCOM with the integration of Counter - Unmanned Aerial Systems (C-UAS) capabilities into the IAMD architecture.</p> <p>Recurring activities include:</p> <ul style="list-style-type: none"> - Continue integration of Navy Cooperative Engagement Capability (CEC) & Army Integrated Fire Control Network (IFCN) via JTMC Bridge, and demonstration in increasingly realistic environments and scenarios. - Continue to advance improvements in combat identification integration and interoperability among Joint Integrated Air and Missile Defense systems and to start the implementation of these advanced capabilities across the Army, Navy, Air Force and Marine Corps systems 				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
<p>- Enhance Models and Simulations (M&S) to support participation in annual Nimble Fire exercises</p> <p>- Continue engineering activities supporting critical Joint Command and Control and interoperability needs</p> <p>- Work within JADC2 Working Groups and Integrated Product Teams to ensure IAMD Technical Authority efforts are in alignment and compatible with the direction of the other Services with respect to JADC2 capabilities</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - Continue engineering investigations and evaluation of Advanced Association Algorithms to improve overall joint IAMD Tracking Capabilities to include radar and Electro-Optical / Infrared (EO/IR) data and start transition efforts to realize functionality - Conduct analysis into existing and emerging IAMD capabilities to ensure they are appropriately represented during BMD and IAMD wargames/exercises. Continue to expand use of representative wargames and exercises - Enhance Models and Simulations (M&S) to support participation in annual Nimble Fire exercises - Continue engineering activities supporting critical Joint Command and Control and interoperability needs: <ul style="list-style-type: none"> -- Continue to advance improvements in combat identification integration and interoperability among Joint Integrated Air and Missile Defense systems and to start the implementation of these advanced capabilities across the Army, Navy, Air Force and Marine Corps systems -- Working with JIAMD, continue to analyze, assess and translate identified Engagement Coordination Initial Capability Document requirements in to technical requirements for implementation within Services and Agency existing and developing programs of record to improve Engagement Coordination and implement advanced fire control capabilities across the Joint Integrated Air and Missile Defense kill-chain - Working within the various Joint All Domain Command and Control (JADC2) Working Groups and Integrated Product Teams, ensure IAMD Technical Authority efforts are in alignment and compatible with the direction of the other Services with respect to JADC2 capabilities - Start working with the Army and USCENTCOM in support of the analysis, assessment and development of Counter - Unmanned Aerial Systems (C-UAS) capabilities <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Integrate Multi-Source Correlator Tracker (MSCT) software with CEC/IFCN and Air Force and Marine Corps systems - integrate fire control networks with tactical level Command and Control nodes for battle management - Incorporate ballistic and hypersonic missile tracking into the JTMC Bridge for cross-Service integrated fire control - Incorporate / demonstrate contracting across the JTMC Bridge for integrated fire control sensor to weapon support across Services - Use Army IAMD Battle Command System (IBCS), Navy CEC, USAF F-15 and other POR integration efforts to evaluate optimal solutions for distributed Joint Multi-Platform Advanced Combat Identification (JMAC) Architecture 			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Demonstrate distributed JMAC capabilities in an integrated JTIFC scenario in Live, Virtual, Constructive (LVC) environment - Continue engineering investigations and evaluation of delivered multi-sensor Advanced Track Filters and Advanced Association Algorithms to improve overall Joint IAMD Tracking Capabilities - Develop demonstrations and live tracking events to show performance in more realistic IAMD environments; start transition planning - With the National Security Innovation Network, develop approaches to improve the algorithm evaluation process through the use of Artificial Intelligence and Machine Learning techniques - Conduct analysis into existing and emerging IAMD capabilities to ensure they are appropriately represented during wargames/ exercises - Continue to expand use of representative wargames and exercises in order to further enhance the capabilities being developed - Continue working with the Army and USCENTCOM in support of the analysis, assessment and development of C-UAS capabilities - Support integration of IAMD Technical Authority efforts into JADC2 and end-to end-capability development - Provide impact assessments for the JADC2 Reference Architecture and subsequent architecture and capability development efforts - Enable Right Sensor, Right Shooter capability with current service systems which will provide the capability to perform engagements utilizing remote sensors (engage on remote capabilities) which otherwise would not be available. This will also enable JTIFC to pass fire control quality information across all of the joint service systems. - Operate, maintain and update JTIFC Node, which is they key software utilized to connect the Army and Navy's composite tracking networks which allow the two services to pass fire control quality data from all connected sensors - Mature Hypersonic Defense Command and Control software and support JTIFC LVC/Flag Exercises. The LVC environment and exercises provide low cost opportunities with live systems/equipment and joint assets to continue to mature the JTIFC capabilities, which would otherwise be unaffordable for the IAMD TA efforts - Enable maturation and fielding of ABMAs for participation with JTIFC. This is a new effort which will enable the use of automated battle management aides to support the operators with cross service engagements. <p>FY 2022 to FY 2023 Increase/Decrease Statement: Increase in funding from FY 2022 to FY 2023 provides for the JADC2 integration and synchronization and the Joint IAMD Engagement Coordination of ABMA concepts into an IAMD/LVC environment.</p>			
<p>Title: System-Level Verification and Assessment</p> <p align="right">Articles:</p> <p>Description: This activity funds Missile Defense System Assessment and Verification, Validation, and Accreditation (VV&A) activities to support Operational Capability Baseline (OCB) delivery decisions, and anchor System modeling and simulation.</p> <ul style="list-style-type: none"> - Develop and manage assessment plans and requirements for MDS capability increments: 	21.953	25.703	26.591
	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs		Project (Number/Name) MD24 / System Engineering & Integration
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023
<p>-- Map assessment requirements to data collection venues (i.e., ground tests, flight tests, and exercises)</p> <p>-- Evaluate current Modeling & Simulation (M&S) capability to address assessment requirements, and provide recommendations for new or improved M&S</p> <ul style="list-style-type: none"> - Maintain assessment documentation per the R-4 summary - Conduct extensive analysis of data collected in MDS ground and flight test events to characterize MDS interoperability and performance, and anchor models and simulations - Identify mitigation approaches for system performance issues uncovered during the course of analysis and assessment - Monitor development and recommend improvements to the simulation enterprise based on an evaluation of the validity of Component, Element and System-level models (and frameworks) and participation in assessment activities and Modeling and Simulation events - Continue VV&A activities to meet and maintain Hardware-in-the-Loop (HWIL) model accreditation in accordance with the HWIL Accreditation plan - Conduct assessments of Missile Defense System capabilities and limitations prior to capability delivery decisions - Produce independent assessments of each incremental MDS Capability Delivery to support fielding readiness determinations - Verify MDS performance against specified requirements, and produce MDS verification reports - Maintain M&S VV&A database and toolkit - Maintain verification data for System Specification Change Notices - Recommend solutions to improve assessment confidence, including M&S and testing issue resolutions <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - Conduct VV&A of MDS Core Truth Models, to include debris and plume modeling. <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p> <p>N/A</p>				
Title: Knowledge Centers		15.551	12.679	12.055
		Articles:	-	-
<p>Description: Knowledge Centers serve as independent technical advisors to MDA program offices in the C2BMC, Interceptor, Space, and Sensor areas to support development of technical approaches and improve reliability.</p> <ul style="list-style-type: none"> - Provide Federally Funded Research and Development Centers (FFRDC) and University Affiliated Research Centers (UARC) subject matter expertise, to include reach-back capability as needed, for Element program managers: 				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> -- Provide Subject Matter Expertise and analytical support for Independent Review Teams, mission assurance assessments, Failure Review Boards and Failure Investigation Teams -- Identify and provide recommendations to mitigate technical risks, including innovative and unconventional approaches -- Promote knowledge sharing between external technical sources and MDA - Perform independent technical assessments of critical System and Element program issues: -- Define element knowledge points (KPs), establish closure criteria, and provide closure recommendations -- Continue to provide System and Element performance assessments - Conduct assessments of emerging technologies as required <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: - SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>				
Title: Future Concepts and Planning		26.587	13.451	13.853
		Articles: -	-	-
<p>Description: This activity funds MDS architecture and future concept development, and efforts and studies to address the emergent threat, including DoD Analyses of Alternatives (AoA).</p> <ul style="list-style-type: none"> - Participate in designated Office of the Secretary of Defense (OSD) activities or analyses, as directed by Congress - Perform MDS capability gap analysis, and analyze and document architecture alternatives and/or new technologies to address gaps - Develop architecture overviews, capability evolution plans, integrated system schedules, and top-level requirements - Develop Initial Requirements Documents (IRDs) to establish functional, performance and integration planning requirements for next generation weapons and sensors to counter future threats - Identify architecture alternatives that improve MDS performance and are complementary to and interoperable with North Atlantic Treaty Organization (NATO) systems and theaters around the world - Conduct technology development reviews for future/follow-on MDS Element development efforts - Update concept capability documentation based on architectural options, trade studies, and technology development experiments - Develop Preliminary Specification Change Notices for selected future MDS capabilities and technologies 				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
---	----------------	----------------	----------------

<p>- Maintain a dialog with the Warfighter community for all MDS engineering and technical issues: -- Inform Warfighter development of the Prioritized Capabilities List (PCL) by providing relevant System data -- Develop updates to the Achievable Capabilities List (ACL) as required - Lead collaborative effort to improve foreign partners' understanding of existing system capabilities, architectural performance and operational concepts of the MDS Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: - SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>			
--	--	--	--

Title: System Engineering, Engineering Analysis and Quick Response Team	9.399	11.061	10.712
Articles:	-	-	-

<p>Description: This task provides rapid response, high quality systems engineering analysis products and supporting technical data to address external and internal Agency inquiries and decisions: - Conduct system level analyses to support ongoing MDS Architecture and Systems Engineering efforts - Analyze expected performance of MDS Architecture options: -- Analyze and predict the performance of future MDS capabilities -- Provide technical assessments, and collaborate with MDS Elements to define and track technical performance measures - Respond to Warfighter, Combatant Command (CCMD) and congressional requests for information and analysis - Provide analytical support for real-world events - Maintain analysis parameters database and standards per the R4 summary to ensure consistency - Develop analytical data to respond to information requests from MDA and DoD leadership</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: - SEE ABOVE.</p> <p>FY 2023 Plans:</p>			
--	--	--	--

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
---	----------------	----------------	----------------

SEE ABOVE.

FY 2022 to FY 2023 Increase/Decrease Statement:

N/A

Title: Discrimination

Articles:

22.883	20.462	16.658
-	-	-

Description: MDA designs, develops, tests, and delivers MDS discrimination improvements and countermeasures mitigation capabilities to address emerging adversary countermeasures. MDA is focused on providing the Warfighter with capability improvements to identify Reentry Vehicles (RVs) within a threat missile complex in the presence of decoys and with advanced capabilities to address other countermeasures.

SE&I will lead and integrate the Threat Discrimination program across the entire MDS, establish performance goals for the product development phase, and develop functional, performance, and interface requirements to address the threat. SE&I will establish threat discrimination and countermeasures mitigation ground and flight test requirements, and develop updated high fidelity threat models to support analysis and testing activities. Other activities include:

- Perform systems engineering support for threat discrimination and counter-countermeasures analysis and assessments
- Conduct Threat Discrimination Program integration across the entire MDS
- Perform threat discrimination systems engineering support for counter-countermeasures analysis and assessments
- Conduct analysis on predicted performance of advanced capability development for definition of initial requirements for MDS
- Develop Electronic Attack and Electronic Protection models to support MDS requirements definition for Electronic Protection techniques
- Define operational concepts for improved counter-countermeasure techniques and technologies
- Support Ground/Flight test data collection planning efforts
- Develop models and simulations for Electronic Attack, Electronic Protection, Objective Debris Mitigation, electro-optical/infrared improvements, advanced/dynamic threat, and high fidelity scene generation to support test planning and execution
- Develop updated high fidelity threat models
- Provide technical support for fielding improved threat discrimination capabilities

Specific and/or unique accomplishments to each FY are as follows:

FY 2022 Plans:

- Conduct Threat Discrimination Program integration across the entire MDS
- Perform threat discrimination systems engineering support for counter-countermeasures analysis and assessments
- Provide technical support for fielding improved discrimination capability
- Conduct analysis on predicted performance of advanced capability development for definition of initial requirements for MDS

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs		Project (Number/Name) MD24 / System Engineering & Integration
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Develop Electronic Attack and Electronic Protection models to support MDS requirements definition for Electronic Protection techniques - Define operational concepts for improved counter-countermeasure techniques and technologies - Support Ground/Flight test data collection planning efforts to enable MDS Increment 6C assessment - Develop models and simulations for Electronic Attack, Electronic Protection, Objective Debris Mitigation, electro-optical/infrared improvements, advanced/dynamic threat, and high fidelity scene generation to support test planning and execution - Develop updated high fidelity threat models - Develop Preliminary Change Notice, Functional Specification Change Notice, Performance Specification Change Notice, and Document Change Notice for threat discrimination improvements, Electronic Protection, and Objective Debris Mitigation <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Develop Enhanced Electronic Protection Techniques - Produce Specification Change Notice, Trace Activities for flowdown to Element Specifications, and Document Change Notice <p>FY 2022 to FY 2023 Increase/Decrease Statement: Decrease from FY 2022 to FY 2023 reflects completion of the bulk of Increment 6C/7 discrimination efforts per the approved plan.</p>				
<p>Title: Risk Management</p> <p align="right">Articles:</p> <p>Description: The Risk Management task identifies MDS element and component technical risks, and tracks status and risk mitigation progress.</p> <ul style="list-style-type: none"> - Convene and chair Risk Management Working Group - Execute the risk management and mission readiness working group process - Maintain a risk database using the Failure Reporting and Corrective Action System - Review and approve program element risks, on quarterly basis <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: - SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>		7.420	7.901	7.755
		-	-	-
Title: Anti-Tamper & Engineering Manufacturing Readiness Level Development		5.152	5.367	5.282

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023
<p align="right">Articles:</p> <p>Description: This task develops anti-tamper approaches to inhibit reverse engineering of critical technologies, and oversees the use of Engineering and Manufacturing Readiness Levels (EMRLs) to assess Element, Component, or System maturity.</p> <ul style="list-style-type: none"> - Develop anti-tamper approaches to enable international fielding, support coalition warfare, and extend the effective operational life of the System - Engage and support the Services in understanding and transitioning MDS Element Anti-Tamper activities - Participate in Element reviews to assess proposed Anti-Tamper solutions and assist programs in developing and implementing Anti-Tamper detection and response technologies to mitigate risk - Monitor application of EMRLs to evaluate engineering and manufacturing maturity of MDS elements, systems, and components - Assess and report readiness of MDA development efforts for transition to production <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: - SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>		-	-	-
<p>Title: Manufacturing and Producibility</p> <p align="right">Articles:</p> <p>Description: This activity supports a system-level manufacturing and producibility team to address materials, key component, and subsystem design and development to reduce cycle time, part count, and risk. This activity also supports a system-level reliability team to reduce risk of test failures and performance shortcomings and drive reliability into system and component designs.</p> <ul style="list-style-type: none"> - Assess Missile Defense industrial base and determine critical manufacturing technologies: <ul style="list-style-type: none"> -- Conduct assessments of critical component supply base and update critical technologies database -- Collaborate with national security space components on investment strategies for critical technologies -- Develop engineering management tool to characterize industrial base risks - Utilize supply chain risk identification and mitigation tracking system to mitigate manufacturing supply issues for critical components - Assess the effectiveness of reliability programs for each MDA Product (Radar, Launcher, Missile/Interceptor, etc.) to achieve/sustain required reliability - Perform reliability, composite risk, and probability of mission success assessments for flight tests 		4.697 -	4.880 -	5.345 -

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
---	----------------	----------------	----------------

<ul style="list-style-type: none"> - Identify failure trends/modes and evaluate impact on the Probability of Mission Success; evaluate potential corrective actions - Provide element/program scorecard data to support reliability evaluations/assessments - With Logistics Support, develop MDA Reliability and Logistic Policies/Plans to promote integrated sustainability efforts - Ensure that Missile Defense products have achieved the required maturity in Reliability, Availability, and Maintainability (RAM) to support the transition from MDA to the appropriate service organization; provide RAM expertise as needed to Element Program Offices - Provide updates to MDA RAM policy and guidance <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: - SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>			
---	--	--	--

<p>Title: JEON Capability</p> <p align="right">Articles:</p> <p>Description: In conjunction with the Lower Tier Project Office (LTPO) for a Joint Emergent Operational Need (JEON), provide system-level engineering activities to develop, test and deploy an integrated solution for upper tier/lower tier integration by achieving enhanced interoperability between the Terminal High Altitude Area Defense (THAAD) and PATRIOT capabilities, including:</p> <ul style="list-style-type: none"> - Develop threat updates to inform requirements - Develop functional, performance, and interface requirements - Develop test requirements - Update Modeling and Simulation (M&S) frameworks and core truth models - Provide M&S integration for testing, and provide Wargame and training support - Develop requirements for capability assessments - Provide test and performance analysis - Perform Element integration <p>Specific and/or unique accomplishments to each FY are as follows:</p>	9.672	0.000	0.000
	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs		Project (Number/Name) MD24 / System Engineering & Integration
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023
<p>FY 2022 Plans: No funding is requested for this activity in FY 2022.</p> <p>FY 2023 Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>				
<p>Title: Guam Defense Integrated Air and Missile Defense (IAMD)</p> <p align="right">Articles:</p> <p>Description: The Guam Defense IAMD provides the integration of the Joint Track Management Capability (JTMC) Bridge to establish an independent integrated fire control architecture in support of the Defense of Guam. This activity pulls from ongoing IAMD Technical Authority (TA) efforts that developed a bridge capability demonstration. This requirement would allow composite tracking networks to operate as a single joint composite tracking network in support of Guam Defense.</p> <p>FY 2022 Plans: N/A</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Mature the JTMC Bridge with respect to Defense of Guam requirements - Initiate accreditation of JTMC Bridge to connect to tactical Cooperative Engagement Capability (CEC) networks for Live testing - Provide cyber security and accreditation packages - Mature the JTMC Bridge for Ballistic and Hypersonic Missile tracking and Combat Identification - Provide integration activities for existing JTMC Bridge into Integrated Air Defense System (IADS) architecture - Conduct integration of sensors and weapons into IBCS and interface of IBCS to Battle Control System - Fixed / command and control (BCS-F/C2) Pathfinder <p>FY 2022 to FY 2023 Increase/Decrease Statement: Increase in funding from FY 2022 to FY 2023 provides for the initiation of the Department of Defense architecture solution for Defense of Guam.</p>		0.000 -	0.000 -	18.000 -
Accomplishments/Planned Programs Subtotals		172.650	155.478	176.122

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency **Date:** April 2022

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

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

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 0603881C: <i>Ballistic Missile</i>	305.081	213.382	190.216	-	190.216	196.279	213.945	224.146	238.269	Continuing	Continuing
<i>Defense Terminal Defense Segment</i>											
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,195.853	724.028	667.524	-	667.524	870.817	802.617	781.973	765.733	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	259.605	254.962	231.134	-	231.134	250.028	274.705	276.254	257.575	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	861.809	639.549	600.072	-	600.072	658.798	574.014	570.018	580.496	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	639.027	564.946	589.374	-	589.374	575.883	588.824	612.853	605.801	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	364.994	389.156	367.824	-	367.824	363.963	421.261	476.991	490.176	Continuing	Continuing
• 0604181C: <i>Hypersonic Defense</i>	267.589	287.796	225.477	-	225.477	108.540	110.220	287.535	449.590	Continuing	Continuing

Remarks

D. Acquisition Strategy

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

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-	-	-	-	-	-	-	-	-	-	-	N/A

Remarks
N/A

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Requirements and Design - Reqts & Design - Lethality Spt - FFRDC/UARC	MIPR	Various : CA	4.869	0.522	Nov 2020	0.995	Nov 2021	0.795	Nov 2022	-		0.795	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Lethality Spt - CSS	C/CPFF	TEAMS : NC	2.932	1.091	Nov 2020	0.686	Nov 2021	1.560	Nov 2022	-		1.560	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - NGI Lethality Analysis	Various	Various : TBD	0.000	0.000		0.000		5.697	Dec 2022	-		5.697	Continuing	Continuing	Continuing
Requirements and Design - Previous Year Reqts & Design Content No Longer in FYDP	Various	Various : Various	47.805	0.000		0.000		0.000		-		0.000	0.000	47.805	0.000
Requirements and Design - Reqts & Design	C/CPFF	TEAMS : AL, VA	52.392	6.602	Nov 2020	6.753	Nov 2021	7.369	Nov 2022	-		7.369	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - FFRDC/UARC 1	MIPR	ORNL : TN	2.234	0.394	Nov 2020	0.423	Nov 2021	0.432	Nov 2022	-		0.432	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - FFRDC/UARC 2	MIPR	MITRE : VA	6.595	0.618	Nov 2020	0.423	Nov 2021	0.432	Nov 2022	-		0.432	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - HAENS Spt	MIPR	NSWC Crane : IN	4.233	0.782	Nov 2020	0.518	Nov 2021	0.528	Nov 2022	-		0.528	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Requirements and Design - Reqts & Design - Industry	C/CPFF	Boeing : AL	129.733	7.340	Nov 2020	5.440	Nov 2021	10.082	Nov 2022	-		10.082	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - MDA	Allot	MDA : AL, VA	71.160	7.602	Nov 2020	7.946	Oct 2021	9.100	Oct 2022	-		9.100	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - NGI CSS support	Various	Various : AL	0.000	0.000		2.247	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - NGI Lab support	Various	Various : NM, CA, TX	0.000	0.000		5.091	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - NGI OGA support	MIPR	Various : AL, TN	0.000	0.000		2.700	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - OGA	MIPR	CCDC : AL	13.362	2.223	Nov 2020	0.461	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Post Intercept Assessment	Various	Various : Various	19.141	6.373	Nov 2020	2.300	Nov 2021	2.300	Nov 2022	-		2.300	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - Engagement Coordination	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	0.000	0.000		0.000		2.110	Dec 2022	-		2.110	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - JADC2 Integration	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	0.000	0.000		0.000		1.210	Dec 2022	-		1.210	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - MDA	Allot	MDA : AL, VA, CO	0.000	0.739	Oct 2020	0.774	Oct 2021	0.805	Oct 2022	-		0.805	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency												Date: April 2022			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
0400 / 4						PE 0603890C / BMD Enabling Programs				MD24 / System Engineering & Integration					
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Integrated Air and Missile Defense (IAMD) - IAMD - OGA	MIPR	CCDC : AL	19.306	5.084	Nov 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - Support	C/CPFF	TEAMS : AL, VA, CO	7.186	0.715	Nov 2020	1.301	Nov 2021	1.090	Nov 2022	-		1.090	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - Various	MIPR	DoD Activities : Various	61.917	9.251	Nov 2020	15.916	Nov 2021	16.361	Nov 2022	-		16.361	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - Previous Year IAMD Content No Longer in FYDP	Various	Various : AL, VA, MD	6.520	0.000		0.000		0.000		-		0.000	0.000	6.520	0.000
System-Level Verification and Assessment - Previous Year Sys V&A content no longer in the FYDP	Various	Various : Various	12.236	0.000		0.000		0.000		-		0.000	0.000	12.236	0.000
System-Level Verification and Assessment - Sys V&A - CSS	C/CPFF	TEAMS : AL	15.823	2.642	Nov 2020	3.642	Nov 2021	2.604	Nov 2022	-		2.604	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC 1	MIPR	Aerospace : CA	23.374	1.579	Nov 2020	1.251	Nov 2021	1.825	Nov 2022	-		1.825	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC 2	MIPR	JHU/APL : MD, VA	12.058	0.830	Nov 2020	1.270	Nov 2021	1.282	Nov 2022	-		1.282	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC 3	MIPR	GTRI : AL	2.611	1.116	Nov 2020	1.175	Nov 2021	1.175	Nov 2022	-		1.175	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC 6	MIPR	MIT/LL : MA	22.748	0.000		0.829	Nov 2021	0.872	Nov 2022	-		0.872	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency												Date: April 2022			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD24 / System Engineering & Integration					
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC 7	MIPR	MITRE : VA	22.933	1.778	Nov 2020	1.645	Nov 2021	1.645	Nov 2022	-		1.645	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - M&S Accreditation	Various	CCDC : AL	21.117	2.365	Nov 2020	5.518	Nov 2021	5.622	Nov 2022	-		5.622	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - MDA	Allot	MDA : VA, AL	17.057	6.353	Oct 2020	5.809	Oct 2021	6.652	Oct 2022	-		6.652	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - OGA	MIPR	CCDC : AL	16.745	2.364	Nov 2020	4.090	Nov 2021	4.413	Nov 2022	-		4.413	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - Various	Various	Various : Various	0.000	1.051	Dec 2020	0.000		0.000		-		0.000	0.000	1.051	0.000
System-Level Verification and Assessment - V&A Industry Support	C/CPFF	Boeing : AL	21.184	1.875	Nov 2020	0.474	Nov 2021	0.501	Nov 2022	-		0.501	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 5	MIPR	Draper : VA	1.231	0.300	Nov 2020	0.665	Nov 2021	0.665	Nov 2022	-		0.665	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 1	MIPR	Aerospace : CA	17.127	0.541	Nov 2020	1.732	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 2	MIPR	MIT/LL : MA	11.080	1.050	Nov 2020	1.090	Nov 2021	0.648	Nov 2022	-		0.648	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 3	FFRDC	MITRE : VA	11.524	1.600	Nov 2020	1.106	Nov 2021	0.864	Nov 2022	-		0.864	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 4	FFRDC	JHU/APL : VA	9.628	2.271	Nov 2020	0.728	Nov 2021	0.864	Nov 2022	-		0.864	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 7	MIPR	GTRI : GA	5.509	1.220	Nov 2020	0.386	Nov 2021	0.864	Nov 2022	-		0.864	Continuing	Continuing	Continuing
Knowledge Centers - KC - Industry	C/CPFF	BOEING : AL	0.000	0.974	Nov 2020	0.000		0.000		-		0.000	0.000	0.974	0.974
Knowledge Centers - KC - MDA	Allot	MDA : AL, VA	43.176	2.255	Oct 2020	2.359	Oct 2021	2.828	Oct 2022	-		2.828	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Knowledge Centers - KC - TEAMS	C/CPFF	TEAMS : AL	8.322	2.445	Nov 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Knowledge Centers - KC - Various	MIPR	Various : Various	11.241	2.895	Dec 2020	4.613	Dec 2021	5.322	Nov 2022	-		5.322	Continuing	Continuing	Continuing
Knowledge Centers - Previous Year KC Content No Longer In FYDP	Various	Various : AL, AK, CA, CO, HI, NM, VA	3.032	0.000		0.000		0.000		-		0.000	0.000	3.032	0.000
Future Concepts and Planning - Future Concepts - Architecture CSS	C/CPFF	TEAMS : AL, VA	23.181	5.931	Nov 2020	6.313	Nov 2021	1.363	Nov 2022	-		1.363	Continuing	Continuing	Continuing
Future Concepts and Planning - Architecture target simulation development	MIPR	USA CCDC AVIATION AND MISSILE CENTE : AL	0.000	10.000	May 2021	0.000		0.000		-		0.000	0.000	10.000	0.000
Future Concepts and Planning - Future Concepts - Architecture Support	Various	Various : VA, AL	13.392	3.212	Nov 2020	0.000		0.000		-		0.000	0.000	16.604	0.000
Future Concepts and Planning - Future Concepts - FFRDC / UARC 1	MIPR	SNL : CA	3.892	0.205	Nov 2020	0.212	Nov 2021	0.216	Nov 2022	-		0.216	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 2	C/CPFF	GTRI (Georgia Tech Research Institute) : GA	0.000	0.000		0.000		1.279	Dec 2022	-		1.279	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 3	MIPR	MIT/LL : MA	5.105	0.025	Nov 2020	0.000		0.000		-		0.000	0.000	5.130	0.000
Future Concepts and Planning - Future Concepts - FFRDC / UARC 4	MIPR	LLNL (Lawrence Livermore National Laboratory) : Various	0.000	0.000		0.000		0.317	Dec 2022	-		0.317	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Future Concepts and Planning - Future Concepts - FFRDC / UARC 5	MIPR	MITRE : VA	4.589	0.841	Nov 2020	0.423	Nov 2021	2.888	Nov 2022	-		2.888	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 6	MIPR	Aerospace : CA	5.438	0.558	Nov 2020	0.423	Nov 2021	0.455	Nov 2022	-		0.455	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - Support	Allot	MDA : VA / AL	26.301	5.815	Oct 2020	6.080	Oct 2021	6.324	Oct 2022	-		6.324	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - WHS	MIPR	RAND CORPORATION : Various	0.000	0.000		0.000		1.011	Dec 2022	-		1.011	Continuing	Continuing	Continuing
Future Concepts and Planning - Previous Year Future Concepts - No Longer in FYDP	Various	Various : Various	82.988	0.000		0.000		0.000		-		0.000	0.000	82.988	0.000
System Engineering, Engineering Analysis and Quick Response Team - Previous Year Sys Engrg, QRT - No Longer In FYDP	Various	Various : Various	6.253	0.000		0.000		0.000		-		0.000	0.000	6.253	0.000
System Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - CSS	C/CPFF	TEAMS : AL	42.423	2.492	Nov 2020	2.485	Nov 2021	2.052	Nov 2022	-		2.052	Continuing	Continuing	Continuing
System Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - CSS 2	C/CPFF	SAIC : VA, AL	39.044	6.276	Nov 2020	8.115	Nov 2021	8.177	Nov 2022	-		8.177	Continuing	Continuing	Continuing
System Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - Industry Spt	C/CPFF	Boeing : VA, AL	1.084	0.631	Nov 2020	0.461	Nov 2021	0.483	Nov 2022	-		0.483	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Discrimination - Discrimination - CSS	C/CPFF	TEAMS : AL	29.448	8.689	Nov 2020	5.635	Nov 2021	5.999	Nov 2022	-		5.999	Continuing	Continuing	Continuing
Discrimination - Discrimination - Industry	C/CPAF	Boeing : AL, VA	62.079	2.777	Nov 2020	12.971	Nov 2021	8.729	Nov 2022	-		8.729	Continuing	Continuing	Continuing
Discrimination - Discrimination - Support	Allot	MDA : AL, VA	34.571	5.789	Oct 2020	1.856	Oct 2021	1.930	Oct 2022	-		1.930	Continuing	Continuing	Continuing
Discrimination - Discrimination - Various	Various	Various : Various	0.000	5.628	Apr 2021	0.000		0.000		-		0.000	0.000	5.628	0.000
Discrimination - Prior Year Discrimination Improvements no longer funded in FYDP	Various	Various : Various	61.423	0.000		0.000		0.000		-		0.000	0.000	61.423	0.000
Risk Management - Risk Mgt - Analysis	Allot	MDA : VA, AL	39.196	6.676	Oct 2020	7.042	Oct 2021	5.975	Oct 2022	-		5.975	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - Analysis Spt	C/CPAF	TEAMS : AL	4.274	0.222	Nov 2020	0.273	Nov 2021	0.273	Nov 2022	-		0.273	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - FFRDC/UARC	MIPR	MITRE : VA	7.022	0.522	Nov 2020	0.586	Nov 2021	0.569	Nov 2022	-		0.569	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - ICT	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	2.125	0.000		0.000		0.000		-		0.000	0.000	2.125	0.000
Risk Management - Risk Mgt - Various	Various	Various : AL	0.000	0.000		0.000		0.938	Dec 2022	-		0.938	Continuing	Continuing	Continuing
Anti-Tamper & Engineering Manufacturing Readiness Level Development - AT & EMRL - Anti-Tamper	Various	Various : AL, VA, CO	1.929	0.465	Dec 2020	0.190	Dec 2021	0.557	Dec 2022	-		0.557	Continuing	Continuing	Continuing
Anti-Tamper & Engineering Manufacturing Readiness Level Development - AT & EMRL - Anti-Tamper OGA Support	MIPR	CCDC : AL	0.261	0.000		0.269	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Anti-Tamper & Engineering Manufacturing Readiness Level Development - AT	MIPR	NSWC Crane : IN	7.467	0.251	Nov 2020	0.269	Nov 2021	0.274	Nov 2022	-		0.274	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
& EMRL - Anti-Tamper Support															
Anti-Tamper & Engineering Manufacturing Readiness Level Development - AT & EMRL - MDA	Allot	MDA : AL, VA	33.939	4.436	Oct 2020	4.639	Oct 2021	4.451	Oct 2022	-		4.451	Continuing	Continuing	Continuing
Anti-Tamper & Engineering Manufacturing Readiness Level Development - Prior Year AT & EMRL no longer funded in FYDP	Various	Various : Various	2.983	0.000		0.000		0.000		-		0.000	0.000	2.983	0.000
Manufacturing and Producibility - Core Standards	C/CPFF	Boeing : AL	7.677	0.000		0.000		0.000		-		0.000	0.000	7.677	0.000
Manufacturing and Producibility - Mfg and Producibility	Allot	MDA : AL	6.438	3.236	Oct 2020	3.247	Oct 2021	3.002	Oct 2022	-		3.002	Continuing	Continuing	Continuing
Manufacturing and Producibility - Mfg and Producibility - CSS	C/CPFF	TEAMS : AL, VA	2.447	0.765	Nov 2020	1.095	Nov 2021	2.343	Nov 2022	-		2.343	Continuing	Continuing	Continuing
Manufacturing and Producibility - Mfg and Producibility - OGA Support	MIPR	CCDC : AL	12.878	0.585	Nov 2020	0.538	Nov 2021	0.000		-		0.000	0.000	14.001	0.000
Manufacturing and Producibility - Mfg and Producibility - Various	Various	Various : AL	1.889	0.111	Nov 2020	0.000		0.000		-		0.000	0.000	2.000	0.000
Manufacturing and Producibility - Previous Year Mfg and Producibility - No Longer In FYDP	Various	Various : Various	1.450	0.000		0.000		0.000		-		0.000	0.000	1.450	0.000
JEON Capability - CSS	C/CPFF	TEAMS : VA, AL	4.485	1.511	Nov 2020	0.000		0.000		-		0.000	0.000	5.996	0.000
JEON Capability - FFRDC/UARC	MIPR	MITRE : VA	1.341	0.000		0.000		0.000		-		0.000	0.000	1.341	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency												Date: April 2022			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD24 / System Engineering & Integration					
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
JEON Capability - Framework, Truth Models	Various	Various : CO, AL	3.758	0.285	Nov 2020	0.000		0.000		-		0.000	0.000	4.043	0.000
JEON Capability - Industry Support	C/CPFF	Boeing : AL, VA	2.106	0.000		0.000		0.000		-		0.000	0.000	2.106	0.000
JEON Capability - Industry Support - IRES	C/CPAF	Northrop Grumman : AL, VA	7.143	1.990	Nov 2020	0.000		0.000		-		0.000	0.000	9.133	0.000
JEON Capability - OGA	MIPR	CCDC : AL	4.268	1.776	Nov 2020	0.000		0.000		-		0.000	0.000	6.044	0.000
JEON Capability - Systems Engineering	Various	MDA Various : VA, AL, CO	5.429	1.110	Nov 2020	0.000		0.000		-		0.000	0.000	6.539	0.000
JEON Capability - Test & Performance Analysis	Various	Various : VA, AL	8.268	3.000	Nov 2020	0.000		0.000		-		0.000	0.000	11.268	0.000
JEON Capability - UARC	MIPR	JHU / APL : MD, VA	4.649	0.000		0.000		0.000		-		0.000	0.000	4.649	0.000
Guam Defense Integrated Air and Missile Defense (IAMD) - Guam Defense IAMD - AvMC	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	0.000	0.000		0.000		0.996	Dec 2022	-		0.996	Continuing	Continuing	Continuing
Guam Defense Integrated Air and Missile Defense (IAMD) - Guam Defense IAMD - JHU/APL	FFRDC	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	0.000	0.000		0.000		2.675	Dec 2022	-		2.675	Continuing	Continuing	Continuing
Guam Defense Integrated Air and Missile Defense (IAMD) - Guam Defense IAMD - Lockheed Martin	C/CPFF	LOCKHEED MARTIN CORPORATION : Various	0.000	0.000		0.000		0.835	Dec 2022	-		0.835	Continuing	Continuing	Continuing
Guam Defense Integrated Air and Missile Defense (IAMD) - Guam Defense IAMD - MDA	Allot	DOD - MISSILE DEFENSE AGENCY (MDA) : Various	0.000	0.000		0.000		0.817	Oct 2022	-		0.817	Continuing	Continuing	Continuing
Guam Defense Integrated Air and Missile Defense	MIPR	DOD - USN - NAVAL SURFACE	0.000	0.000		0.000		0.484	Dec 2022	-		0.484	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
(IAMD) - Guam Defense IAMD - NSWC Corona		WARFARE CENTER (NSWC) CORONA DIVISION : CA													
Guam Defense Integrated Air and Missile Defense (IAMD) - Guam Defense IAMD - NSWC Dahlgren	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) DAHLGREN DIVISION (NSWCDD) : VA	0.000	0.000		0.000		0.392	Dec 2022	-		0.392	Continuing	Continuing	Continuing
Guam Defense Integrated Air and Missile Defense (IAMD) - Guam Defense IAMD - Northrop Grumman	C/CPFF	NORTHROP GRUMMAN : Various	0.000	0.000		0.000		6.727	Dec 2022	-		6.727	Continuing	Continuing	Continuing
Guam Defense Integrated Air and Missile Defense (IAMD) - Guam Defense IAMD - Numerica	C/CPFF	NUMERICA CORPORATION : CO	0.000	0.000		0.000		0.974	Dec 2022	-		0.974	Continuing	Continuing	Continuing
Guam Defense Integrated Air and Missile Defense (IAMD) - Guam Defense IAMD 0 Raytheon	C/CPFF	RAYTHEON : Various	0.000	0.000		0.000		4.100	Dec 2022	-		4.100	Continuing	Continuing	Continuing
Subtotal			1,373.774	172.650		155.478		176.122		-		176.122	Continuing	Continuing	N/A

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,373.774	172.650	155.478	176.122	-	176.122	Continuing	Continuing	N/A

Remarks
Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.
Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Missile Defense Agency **Date:** April 2022

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

	Significant Event Complete ▲ Significant Event Planned △		Milestone Decision Complete ★ Milestone Decision Planned ☆		Element Test Complete ◆ Element Test Planned ◇		System Level Test Complete ● System Level Test Planned ○		Complete Activity ◆ Planned Activity ◇	
	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027			
SS - FY 2021	▲									
MDS Engineering Review - FY 2021	▲									
Update MIP - FY 2021	▲									
Update to SDD - FY 2021		▲								
Update to IMAP - FY 2021		▲								
E/CCA - 4Q FY 2021		▲								
Update MIP - FY 2022			▲							
Update to SDD - FY 2022				△						
Updates to IMAP -FY 2022				△						
SEP Update FY 2022				△						
Update Achievable Capabilities List - FY 2022				△						
SS - FY 2022				△						
MDS Engineering Review - FY 2022					△					
E/CCA - 4Q FY 2022						△				
Update MIP - FY 2023							△			
Update to SDD - FY 2023							△			
SS - FY 2023								△		
Update to IMAP - FY 2023								△		
E/CCA - 4Q - FY 2023									△	
Update MIP - FY 2024									△	
Update to SDD - FY 2024									△	
SS - 2024									△	
Update to IMAP - FY 2024									△	
Update Achievable Capabilities List - FY 2024									△	

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency **Date:** April 2022

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

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SS - FY 2021	3	2021	3	2021
MDS Engineering Review - FY 2021	3	2021	3	2021
Update MIP - FY 2021	3	2021	3	2021
Update to SDD - FY 2021	4	2021	4	2021
Update to IMAP - FY 2021	4	2021	4	2021
E/CCA - 4Q FY 2021	4	2021	4	2021
Update MIP - FY 2022	1	2022	1	2022
Update to SDD - FY 2022	2	2022	2	2022
Updates to IMAP -FY 2022	2	2022	2	2022
SEP Update FY 2022	2	2022	2	2022
Update Achievable Capabilities List - FY 2022	2	2022	2	2022
SS - FY 2022	2	2022	2	2022
MDS Engineering Review - FY 2022	3	2022	3	2022
E/CCA - 4Q FY 2022	4	2022	4	2022
Update MIP - FY 2023	1	2023	1	2023
Update to SDD - FY 2023	1	2023	1	2023
SS - FY 2023	2	2023	2	2023
Update to IMAP - FY 2023	2	2023	2	2023
E/CCA - 4Q - FY 2023	4	2023	4	2023
Update MIP - FY 2024	1	2024	1	2024
Update to SDD - FY 2024	1	2024	1	2024
SS - 2024	1	2024	1	2024
Update to IMAP - FY 2024	2	2024	2	2024

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency **Date:** April 2022

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

Events	Start		End	
	Quarter	Year	Quarter	Year
Update Achievable Capabilities List - FY 2024	2	2024	2	2024
E/CCA - 4Q - FY 2024	4	2024	4	2024
Update MIP - FY 2025	1	2025	1	2025
Update to SDD - FY 2025	1	2025	1	2025
SS - 2025	1	2025	1	2025
Update to IMAP - FY 2025	2	2025	2	2025
E/CCA - 4Q - FY 2025	4	2025	4	2025
Update MIP - FY 2026	1	2026	1	2026
Update to SDD - FY 2026	1	2026	1	2026
SS - 2026	1	2026	1	2026
Update to IMAP - FY 2026	2	2026	2	2026
Update Achievable Capabilities List - FY 2026	2	2026	2	2026
E/CCA - 4Q - FY 2026	4	2026	4	2026
Update to SDD - FY 2027	1	2027	1	2027
SS - 2027	1	2027	1	2027
Update MIP - FY 2027	1	2027	1	2027
Update to IMAP - FY 2027	2	2027	2	2027
E/CCA - 4Q - FY 2027	4	2027	4	2027

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency										Date: April 2022		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD21 / Homeland Cruise Missile Defense Architecture			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MD21: <i>Homeland Cruise Missile Defense Architecture</i>	-	3.050	13.921	10.852	-	10.852	7.067	4.246	4.342	4.429	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2022 to FY 2023 reflects the completion of hardware purchase to support the Joint Tactical Integrated Fire Control (JTIFC) demonstration.

A. Mission Description and Budget Item Justification

In response to USNORTHCOM's requirements for Cruise Missile Defense of the Homeland (CMD-H), the Missile Defense Agency (MDA) will develop systems architecture and conduct a Joint Tactical Integrated Fire Control (JTIFC) demonstration. The effort includes developing systems engineering requirements, software modifications, models and simulations, and integration of joint sensors and shooters into a fire control network for the demonstration of cruise missile defense capability.

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

	FY 2021	FY 2022	FY 2023
Title: Homeland Cruise Missile Defense Architecture	3.050	13.921	10.852
Articles:	-	-	-
Description: Perform architecture and systems engineering activities required to evolve Cruise Missile Defense of the Homeland, to include architecture analysis, capability roadmap development, and initial requirements analysis. An initial Joint Tactical Integrated Fire Control (JTIFC) demonstration is planned.			
FY 2022 Plans:			
- Conduct architecture definition and systems engineering, including system requirements analysis and modeling and simulation			
-- Conduct the engineering and design of a JTIFC demonstration to integrate Joint sensors and weapons into an integrated fire control network			
-- Obtain hardware critical to capability demonstration, including Integrated Air and Missile Defense (IAMD) Battle Command System (IBCS) radios and dismounted Engagement Operations Center (EOC), and Cooperative Engagement Capability (CEC) hardware			
-- Build software adaptive layers for sensors and weapons to integrate into composite tracking / integrated fire control networks			
FY 2023 Plans:			
- Continue to conduct architecture definition and systems engineering, including systems requirements analysis and modeling and simulation			
- Continue the engineering and design of a JTIFC demonstration to integrate Joint sensors and weapons into an integrated fire control network			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD21 / Homeland Cruise Missile Defense Architecture		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Continue to build software adaptive layers for sensors and weapons to integrate into composite tracking / integrated fire control networks - Integrate software adaptive layers into Integrated Air and Missile Defense (IAMD) Battle Command System (IBCS) dismounted Engagement Operations Center (EOC) - Perform integration testing on the IBCS EOC and adaptive layers with the sensors and weapons with the integrated fire control network - Conduct the JTIFC demonstration <p>FY 2022 to FY 2023 Increase/Decrease Statement: Decrease from FY 2022 to FY 2023 reflects the completion of hardware purchase to support the JTIFC demonstration.</p>				
Accomplishments/Planned Programs Subtotals		3.050	13.921	10.852
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
MDA leverages the nation's engineering Centers of Excellence at government agencies and Military Services, FFRDCs, UARCs, and industry. The executing agents utilize various contracting strategies in a flexible manner to maximize their contribution. Products and Services will be acquired by competitive means to the extent that is possible and practical.				

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD21 / Homeland Cruise Missile Defense Architecture
--	---	---

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Homeland Cruise Missile Defense Architecture - CMD-H Architecture Design	Various	Various : VA, MD, MA, CO	0.000	3.050	Jan 2021	3.521	Dec 2021	3.808	Nov 2022	-		3.808	Continuing	Continuing	Continuing
Homeland Cruise Missile Defense Architecture - CMD-H Demonstration (Prime-1)	C/CPFF	Raytheon : MD, FL, CA, MA	0.000	0.000		7.800	Dec 2021	1.139	Nov 2022	-		1.139	Continuing	Continuing	Continuing
Homeland Cruise Missile Defense Architecture - CMD-H Demonstration (Prime-2)	C/CPFF	Numerica : CO	0.000	0.000		1.000	Dec 2021	1.238	Nov 2022	-		1.238	Continuing	Continuing	Continuing
Homeland Cruise Missile Defense Architecture - CMD-H Demonstration (Prime-3)	C/CPFF	Northrop Grumman : AL	0.000	0.000		0.400	Dec 2021	4.014	Nov 2022	-		4.014	Continuing	Continuing	Continuing
Homeland Cruise Missile Defense Architecture - CMD-H Demonstration (Prime-4)	C/CPFF	Leidos : VA	0.000	0.000		1.200	Dec 2021	0.653	Nov 2022	-		0.653	Continuing	Continuing	Continuing
Subtotal			0.000	3.050		13.921		10.852		-		10.852	Continuing	Continuing	N/A

Remarks
Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	3.050	13.921	10.852	-	10.852	Continuing	Continuing	N/A

Remarks
N/A

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD21 / Homeland Cruise Missile Defense Architecture
--	---	---

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 2021			FY 2022			FY 2023			FY 2024			FY 2025			FY 2026			FY 2027		
IFC CMD-H Demonstration					◇	◇	◇	◇	◇	◇	◇	◇	◇												
CMD-H Increment 1 System Architecture								◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD21 / Homeland Cruise Missile Defense Architecture

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
IFC CMD-H Demonstration	2	2021	4	2023
CMD-H Increment 1 System Architecture	1	2022	4	2027

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency										Date: April 2022		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MT23 / Enabling - Test			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MT23: <i>Enabling - Test</i>	171.055	48.554	41.520	44.245	-	44.245	44.122	47.282	48.477	49.627	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

The Enabling Test project includes the System Engineering & Integration (SE&I) that drives Missile Defense System (MDS) test planning, execution, and post-test analysis and assessment, and the Modeling & Simulation (M&S) tools and framework required to prepare for and execute ground and flight tests.

SE&I allocates test requirements to individual test events, designs test architectures, defines target requirements, and generates ground and flight test scenarios to collect data essential for model validation and system verification. SE&I works with the Service Operational Test Agencies (OTA) to incorporate operational test requirements into MDS events to ensure the incremental capability being transferred to the Warfighter will be operationally effective, suitable, and survivable. The resulting data ensures MDS requirements are being met by the system under test and confirms proper System operation. It also helps to anchor system and element M&S for use in simulations to characterize System performance across the battle space, including areas where no live-fire-testing is performed.

Ground test (GT) responsibilities include System performance sensitivity analysis; scenario design and optimization; analysis to mitigate test data collection risks; test architecture certification analysis; and test result analysis. Flight test (FT) responsibilities include pre-mission scenario analysis to identify and mitigate test execution risk in advance; range safety analysis; mission analysis during test execution; extensive post-mission analysis; and event analysis reporting products. These efforts inform senior leaders' decisions on MDS development and evolution and underpin the capability declarations that deliver new capabilities to the Warfighter.

Pre-mission predictions use the test framework and Hardware in the Loop (HWIL) and digital models of the test configuration to exercise system interfaces, calculate expected System performance, and gauge readiness for test execution. Post-mission, MDA uses test results to anchor System and element M&S and provide confidence in their ability to correctly predict System behavior and performance.

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

MDA's M&S systems and products provide the Agency, the Warfighter, and the OTA with the capability to evaluate individual System components and the overall system-of-systems. MDA validates and accredits System-level models and simulations to support accurate and comprehensive assessments. M&S System and product testing follows the test program outlined in MDA's IMTP and serves as a necessary precursor to conducting System-level testing. Resources for the planning, design, execution and management of this testing are provided in accordance with the most current version of the IMTP.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
---	----------------	----------------	----------------

Title: Engineering and Analysis	31.245	24.513	26.978
Articles:	-	-	-

Description: The Engineering and Analysis effort provides essential System ground and flight test event planning, execution, and evaluation activities for each test event:

- 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 System performance and anchor Models and Simulations (M&S)
- Produce threat data for System ground and flight tests
- Coordinate with MDS Operational Test Agency (OTA) to address test issues, disposition them, coordinate them, and recommend action plans to achieve closure
- Deliver M&S integration test cases
- Conduct M&S Integration Benchmarking and integrate the MDS M&S framework with MDA and non-MDA Elements into the event architectures that support assessment activities
- Integrate, test, and deliver end-to-end System-level simulations supporting ground test missions
- Deploy and maintain M&S Simulation Interface Units (SIUs) for testing, including cybersecurity compliance, configuration management authority, and sustainment of the SIU fleet
- Analyze System-level interoperability
- Conduct modeling and technical analysis for Combatant Command wargames and exercises
- Utilize M&S for pre-test assessment, post-test review, and M&S updates
- Provide test configuration management; risk assessments; and anomaly/deficiency review, assessment and closure
- Analyze test results to identify verification and validation data collection shortfalls and reassign objectives to future test events as required
- Perform event architecture certification
- Provide Federation reporting for VV&A of M&S architectures
- Document test observations for System-level test anomalies and coordinate the resulting Discrepancy Reports within the Failure Reporting, Analysis, and Corrective Action System (FRACAS)
- Upgrade test analysis tools in concert with the MDS evolution (e.g., Modular Analysis and Reporting Suite (MARS)) to enhance analysis capability and efficiency

Specific and/or unique accomplishments to each FY are as follows:

FY 2022 Plans:

- SEE ABOVE.

FY 2023 Plans:

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs		Project (Number/Name) MT23 / Enabling - Test
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023
- SEE ABOVE.				
FY 2022 to FY 2023 Increase/Decrease Statement: Increase from FY 2022 to FY 2023 is in accordance with current Integrated Master Test Plan (IMTP).				
Title: Continuous Integration and Agile Test (CI/CAT)		11.227	11.323	11.499
Articles:		-	-	-
Description: Provide test planning, analysis, M&S integration, M&S execution, threat development, and post-event analysis for integrated ground testing, M&S Continuous Developmental Integration, and M&S engineering activities. Execute agency ground test plan in accordance with approved IMTP and maintain integration across concurrent ground test and flight test activities				
Specific and/or unique accomplishments to each FY are as follows:				
FY 2022 Plans: - SEE ABOVE.				
FY 2023 Plans: - SEE ABOVE.				
FY 2022 to FY 2023 Increase/Decrease Statement: N/A				
Title: Continuous Development & Integration (CDI) Environment		6.082	5.684	5.768
Articles:		-	-	-
Description: Provide M&S integration technical expertise and risk reduction process for MDS Element integration activities and event planning within a Continuous Development and Integration (CDI) environment, to include support to IMTP testing and M&S engineering activities; a venue for integrating new Elements, interfaces, connectivity and functionality to support MDS capability increment upgrades; and cybersecurity monitoring and automation to the CDI environment. It also supports Element modeling capabilities for advance concept analysis in CDI architectures. This is a critical enabler to achieve the Ground Test Concept of Operations. Conduct Early Integration activities such as scenario refinement and early checkout of Element software for Ground Test sprints.				
FY 2022 Plans: - SEE ABOVE.				
FY 2023 Plans:				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency **Date:** April 2022

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
- SEE ABOVE.			
FY 2022 to FY 2023 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals	48.554	41.520	44.245

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

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 0603914C: <i>Ballistic Missile Defense Test</i>	364.994	389.156	367.824	-	367.824	363.963	421.261	476.991	490.176	Continuing	Continuing
• 0604878C: <i>Aegis BMD Test</i>	71.481	111.206	182.776	-	182.776	173.492	159.125	203.851	187.494	Continuing	Continuing

Remarks

D. Acquisition Strategy

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

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering and Analysis - Engineering & Analysis - CSS Support	C/CPFF	TEAMS : AL	11.876	4.248	Nov 2020	3.717	Nov 2021	5.132	Nov 2022	-		5.132	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - FFRDC	MIPR	Aerospace : AL	1.832	0.395	Nov 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - Industry	C/CPAF	Boeing : VA, AL	26.209	5.948	Nov 2020	3.926	Nov 2021	2.978	Nov 2022	-		2.978	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - Integration Support CSS	C/CPAF	COLSA : AL, CO	21.744	0.000		0.000		0.000		-		0.000	0.000	21.744	0.000
Engineering and Analysis - Engineering & Analysis - Non-MDA Element Support for IMTP Events	Various	Various : AL, CO	8.949	2.282	Nov 2020	2.137	Nov 2021	0.700	Nov 2022	-		0.700	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - OGA Support	MIPR	CCDC : AL	59.974	17.776	Nov 2020	13.753	Nov 2021	17.532	Nov 2022	-		17.532	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - OGA Support - NME	MIPR	LTPO : AL	4.287	0.000		0.000		0.000		-		0.000	0.000	4.287	0.000
Engineering and Analysis - Engineering & Analysis - Technical Support	C/CPAF	Northrop Grumman : VA, AL	5.554	0.000		0.000		0.000		-		0.000	0.000	5.554	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering and Analysis - Engineering & Analysis - Test Engineering Support	Various	Various : AL, CO, VA	4.079	0.596	Nov 2020	0.980	Nov 2021	0.636	Nov 2022	-		0.636	Continuing	Continuing	Continuing
Continuous Integration and Agile Test (CI/CAT) - CI/ CAT Analysis (OGA)	MIPR	CCDC : AL	0.000	0.000		2.990	Dec 2021	1.956	Dec 2022	-		1.956	Continuing	Continuing	Continuing
Continuous Integration and Agile Test (CI/CAT) - CI/ CAT M&S Integration	Various	Various : AL, CO	7.979	7.506	Dec 2020	5.708	Dec 2021	5.797	Dec 2022	-		5.797	Continuing	Continuing	Continuing
Continuous Integration and Agile Test (CI/CAT) - CI/ CAT Test & Performance Analysis	Various	Various : AL, CO	4.567	2.364	Dec 2020	0.000		0.778	Dec 2022	-		0.778	0.000	7.709	0.000
Continuous Integration and Agile Test (CI/CAT) - CI/ CAT Test Requirements Engineering	C/CPFF	TEAMS : AL, CO	1.053	1.357	Nov 2020	2.625	Nov 2021	2.968	Nov 2022	-		2.968	Continuing	Continuing	Continuing
Continuous Integration and Agile Test (CI/CAT) - CSS	Various	Various : Various	1.962	0.000		0.000		0.000		-		0.000	0.000	1.962	0.000
Continuous Integration and Agile Test (CI/CAT) - Hardware	C/CPFF	TBE : AL	1.689	0.000		0.000		0.000		-		0.000	0.000	1.689	0.000
Continuous Development & Integration (CDI) Environment - Continuous Development & Integration (CDI) Environment - CSS	Various	Various : Various	0.000	1.284	May 2021	0.000		0.000		-		0.000	0.000	1.284	0.000
Continuous Development & Integration (CDI) Environment - Continuous Development and Integration Environment	MIPR	CCDC : AL, CO	9.301	4.798	Dec 2020	5.684	Dec 2021	5.768	Dec 2022	-		5.768	Continuing	Continuing	Continuing
Subtotal			171.055	48.554		41.520		44.245		-		44.245	Continuing	Continuing	N/A

Remarks
N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	171.055	48.554	41.520	44.245	-	44.245	Continuing	Continuing	N/A

Remarks
Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Missile Defense Agency **Date:** April 2022

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

	FY 2021			FY 2022			FY 2023			FY 2024			FY 2025			FY 2026			FY 2027		
IMTP Engineering Inputs - 1Q - FY 2021	▲																				
IMTP Engineering Inputs - 3Q - FY 2021		▲																			
IMTP Engineering Inputs - 1Q - FY 2022			▲																		
IMTP Engineering Inputs - 3Q - FY 2022				△																	
IMTP Engineering Inputs - 1Q - FY 2023					△																
IMTP Engineering Inputs - 3Q - FY 2023						△															
IMTP Engineering Inputs - 1Q - FY 2024							△														
IMTP Engineering Inputs - 3Q - FY 2024								△													
IMTP Engineering Inputs - 1Q - FY 2025									△												
IMTP Engineering Inputs - 3Q - FY 2025										△											
IMTP Engineering Inputs - 1Q - FY 2026											△										
IMTP Engineering Inputs - 3Q - FY 2026												△									
IMTP Engineering Inputs - 1Q - FY 2027																			△		
IMTP Engineering Inputs - 3Q - FY 2027																				△	

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency **Date:** April 2022

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

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
IMTP Engineering Inputs - 1Q - FY 2021	1	2021	1	2021
IMTP Engineering Inputs - 3Q - FY 2021	3	2021	3	2021
IMTP Engineering Inputs - 1Q - FY 2022	1	2022	1	2022
IMTP Engineering Inputs - 3Q - FY 2022	3	2022	3	2022
IMTP Engineering Inputs - 1Q - FY 2023	1	2023	1	2023
IMTP Engineering Inputs - 3Q - FY 2023	3	2023	3	2023
IMTP Engineering Inputs - 1Q - FY 2024	1	2024	1	2024
IMTP Engineering Inputs - 3Q - FY 2024	3	2024	3	2024
IMTP Engineering Inputs - 1Q - FY 2025	1	2025	1	2025
IMTP Engineering Inputs - 3Q - FY 2025	3	2025	3	2025
IMTP Engineering Inputs - 1Q - FY 2026	1	2026	1	2026
IMTP Engineering Inputs - 3Q - FY 2026	3	2026	3	2026
IMTP Engineering Inputs - 1Q - FY 2027	1	2027	1	2027
IMTP Engineering Inputs - 3Q - FY 2027	3	2027	3	2027

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency										Date: April 2022		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD28 / Intelligence & Security			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MD28: <i>Intelligence & Security</i>	322.365	42.890	39.550	42.036	-	42.036	45.880	56.409	54.428	53.161	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

The Intelligence and Security program provides multi-disciplinary intelligence and security for the Missile Defense System (MDS) acquisition, development, test and deployment. The Intelligence and Security Major Program Goals are:

- Ensure the Intelligence Community (IC) understands and fulfills MDA's current and future prioritized intelligence requirements; advocate Missile Defense test intelligence requirements; and work closely with the IC.
- Leverage available National and DoD Counterintelligence resources. Ensure counterintelligence products and services are fully integrated into all RDT&E programs and activities to protect classified information and critical technologies and to protect Missile Defense Agency (MDA) and MDS personnel, facilities, information and activities.
- Define cybersecurity systems engineering requirements for MDS assets. Identify cybersecurity systems engineering and infrastructure intelligence requirements to focus IC collection, analysis and production to target MDA/MDS cyber vulnerabilities. Incorporate cybersecurity engineering requirements into the MDS systems engineering process.
- Provide cross-Agency acquisition security oversight and support for the identification and protection of Critical Program Information (CPI). Provide physical security for MDS weapons/sensor system deployments, including Foreign Military Sales (FMS). Implement MDA's information security and declassification programs. Strengthen Test and Operations Security (OPSEC) across the Agency.

The Security and Intelligence Project captures five specific areas: 1) Intelligence 2) Counterintelligence 3) Cybersecurity Engineering 4) Program Protection, and 5) Threat Systems Engineering. Collectively, these efforts provide critical information regarding threat ballistic missile system capabilities; protection of personnel, activities, and technology from espionage and terrorism; and identification and mitigation of MDS system vulnerabilities.

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

	FY 2021	FY 2022	FY 2023
Title: Intelligence	11.477	7.983	8.030
Articles:	-	-	-
Description: The Intelligence program provides expertise to develop intelligence products on threat system capabilities, and leverages unique intelligence-community developed, owned, and operated capabilities for the benefit and advocacy of the missile defense community. Program goals include:			
- Serve as designated intelligence liaison between MDA and the Intelligence Community:			
-- Maintain and communicate prioritized, specific Missile Defense intelligence requirements to the Intelligence Community			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022			
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD28 / Intelligence & Security		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023	
<p>-- Maintain a focused dialogue with members of the Intelligence Community to ensure understanding, urgency and context of MDA intelligence requirements</p> <ul style="list-style-type: none"> - Provide Current, Technical, Acquisition, Collection and Cyber intelligence to the MDS throughout the acquisition life cycle - Maintain and update MDA's knowledge base of foreign ballistic missile threats, including development, enhancement, and population of the Missile Threat Portals with Intelligence Community produced documents at the appropriate security classification levels - Characterize all missile threat systems from adversaries for use by the MDA Systems Engineer, Program Managers, and Director for Test to perform modeling, simulation, and testing of the MDS - Maintain Missile Intelligence Secure Link (MISL) classified portal (full operational capability) <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: - SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>					
Title: Counterintelligence		8.136	6.936	7.216	
		Articles: -	-	-	
<p>Description: The Counterintelligence Program detects, mitigates or neutralizes espionage, foreign intelligence collection activities and terrorist activities conducted for or on behalf of foreign powers, organizations, persons, or their agents directed against U.S. national security interests, or DoD/MDA and its personnel, information, material, facilities, and activities. Program goals include:</p> <ul style="list-style-type: none"> - Serve as MDA Liaison with Federal, State and Local Law Enforcement and Counterintelligence (CI) Organizations to report and resolve incidents involving MDA personnel, information and technologies -- Engage National, Combatant Command and DoD CI resources to share and obtain threat information impacting MDA personnel, facilities, information, technologies, programs and activities, worldwide -- Provide CI, technical and cyber threat support to MDA flight tests, conferences, and deployment activities worldwide, including FMS Programs, to detect, deter, or neutralize criminal, terrorist and foreign intelligence collection threats targeting MDA and Missile Defense technologies, personnel, facilities and activities - Execute life cycle replacement of outdated technical surveillance countermeasures and cyber forensics gear to employ the latest technologies during conferences, flight tests and other classified activities to detect, deter and prevent the loss or compromise of classified or sensitive information to foreign adversary collection activities 					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MD28 / <i>Intelligence & Security</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Conduct CI in Cyberspace activities to detect malicious and insider threat activities targeting MDA administrative and fire control networks - Provide required CI Awareness and Reporting training to MDA workforce - Provide CI research and assistance for cyber forensics and analysis to identify insider and foreign entity cyber threats to MDA computer networks and Missile Defense fire control systems - Conduct CI research and analysis to produce CI threat products that address foreign intelligence, cyber and international terrorist threats to MDA personnel, facilities, information, systems and activities worldwide - Maintain technical surveillance countermeasures and cyber forensic gear to detect, identify and neutralize adversary collection platforms and capabilities used to gain unauthorized access to MDA classified and controlled unclassified information <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: - SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>				
Title: Cybersecurity Engineering Program		3.505	4.255	4.541
		Articles:	-	-
<p>Description: Cybersecurity Engineering is focused on developing designs and solutions to protect the MDS from existing and emerging cyber threats through coherent cybersecurity systems engineering. Program goals include:</p> <ul style="list-style-type: none"> - Ensure Cybersecurity is integrated into the Acquisition Process - Assess the Cybersecurity Architecture to address gaps/disconnects, enhance interoperability, and realize efficiencies across all mission systems; define the "As Built" and "To Be" Cybersecurity Systems Engineering concepts to strengthen technical assessments and cybersecurity design solutions and implementation recommendations impacted by the change in requirements: <ul style="list-style-type: none"> -- Develop and coordinate near-term and long-term engineering changes to the MDS -- Develop requirements for building cybersecurity into incremental MDS hardware and software builds -- Monitor allocation of these requirements to the Elements -- Recommend updates to MDA's Technical Core Standards, including Cyber-related requirements specified by the Agency, the Combatant Commanders (CCMDs), the DoD, and the Federal Government -- Perform cybersecurity systems engineering assessments for proposed System Specification and interface changes and additions 				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs		Project (Number/Name) MD28 / Intelligence & Security
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Provide and recommend updates to cybersecurity systems engineering policy and guidance for MDS design and acquisition to enhance resiliency against cyber threats - Implement cybersecurity engineering resiliency techniques - Provide objectives and requirements for Cybersecurity testing - Provide independent cybersecurity reviews at critical engineering milestones - Provide information system security engineering by assessing cybersecurity requirements, design, and implementations and provide recommendations to address architecture gaps or shortfalls - Implement cyber threat mitigation strategies within MDS architecture, design, system requirements, and specifications documentation to ensure traceability to necessary components and interfaces that make up the Missile Defense System - Coordinate evaluation of cybersecurity capability during System tests - Develop verification and assessment strategies for System cybersecurity requirements <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: - SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>				
<p>Title: Program Protection</p> <p>Articles:</p> <p>Description: Protects Missile Defense information, Critical Program Information, technologies, and deploying systems; develops and coordinates Security Classification Guides; and performs declassification reviews to identify equities that warrant continued protection in order to preserve the technological advantage of the MDS. Program Protection also coordinates MDA intelligence, counterintelligence and security for MDS test activities. Program goals include:</p> <ul style="list-style-type: none"> - Perform reviews required for all Agency public release, security classification, and Freedom of Information Act (FOIA) and Mandatory Declassification Reviews to ensure sensitive Missile Defense information is not inadvertently released into the public domain - Perform Information Security program management and oversee implementation by MDA programs: <ul style="list-style-type: none"> -- Perform internal program reviews, policy oversight and implementation, and training to identify and fix deficiencies and protect critical information -- Collect information required for annual reports and communicate security posture to leadership 		10.161 -	10.112 -	11.766 -

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022		FY 2023
---	----------------	----------------	--	----------------

<ul style="list-style-type: none"> - Provide security oversight for the Agency's classified contracts by drafting and coordinating DD254 "Contract Security Classification Specification" documents - Provide dedicated on-site security and protection of Missile Defense resources and personnel at operational sites in Alaska, California and Colorado to ensure security protection coverage of MDS mission operations and test assets based in those regions - Perform systematic Declassification reviews on historical Agency information to prevent unauthorized disclosures due to automatic declassification requirements - Identify and integrate Security requirements for overseas sites with existing or planned missile defense weapons or sensor systems to ensure protection of deployed sites - Provide effective physical protection to low density/high demand emerging Warfighter capability - Expand security activities - Conduct program protection planning for the continuing assessment of candidate critical program information for Advanced Technology programs and reassessment of other MDA programs affected by technical baseline changes; ensure critical technologies embedded in missile defense systems are not vulnerable to compromise - Keep pace with mission growth in program protection, system security engineering, and acquisition security <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Implement and conduct continuous monitoring to determine continued security clearance eligibility <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p> <p>Increase from FY 2022 to FY 2023 provides for the transfer of the Special Security Office (SSO) function to MD28 from MC31.</p>				
---	--	--	--	--

<p>Title: Threat Systems Engineering</p> <p align="right">Articles:</p> <p>Description: Threat Engineering provides representations of adversary missile capabilities based on available intelligence information, and develops, coordinates, and baselines MDS-level targets and countermeasures requirements to define target capabilities required to meet System flight test objectives. Program goals include:</p> <ul style="list-style-type: none"> - Develop threat definitions for system specifications -- Produce threat / scenario data for MDS development events -- Perform Threat Verification and Validation analysis to verify missile models meet specifications and are consistent with intelligence assessments - Produce Adversary Data Package (ADP) updates 	9.611	10.264		10.483
	-	-		-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD28 / Intelligence & Security

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Develop target requirements to ensure flight test targets meet operationally realistic conditions - Produce Target Assessment and Certification Reports - Assess threat representation of flight test targets - Develop target system specifications and guide targets requirements development, planning, and certification for MDS flight tests - Analyze flight test target performance relative to threat intelligence assessments to support target system verification and certification - Provide Technical Data for major reviews (System Requirements Reviews, Critical Design Reviews, etc.) - Complete Target Specification builds - Update MDA INS 5000.06, Target Class Capabilities and Requirements documents, as necessary <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: - SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>			
Accomplishments/Planned Programs Subtotals	42.890	39.550	42.036

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

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u> <u>Base</u>	<u>FY 2023</u> <u>OCO</u>	<u>FY 2023</u> <u>Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0305103C: Cyber Security Initiative	1.122	1.142	1.165	-	1.165	1.207	1.236	1.262	1.287	Continuing	Continuing

Remarks

D. Acquisition Strategy

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

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-	-	-	-	-	-	-	-	-	-	-	N/A

Remarks
N/A

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Intelligence - Intelligence Analysis & Support	Allot	MDA : VA, AL, CO	33.745	5.070	Oct 2020	3.555	Oct 2021	3.697	Oct 2022	-		3.697	Continuing	Continuing	Continuing
Intelligence - Intelligence Analysis & Support - Special Prog	Various	Various : Various	0.000	1.948	Dec 2020	0.000		0.000		-		0.000	0.000	1.948	0.000
Intelligence - Intelligence Support	C/CPFF	TEAMS : AL, VA, CO	36.589	4.104	Nov 2020	4.428	Nov 2021	4.333	Nov 2022	-		4.333	Continuing	Continuing	Continuing
Intelligence - Intelligence Support - IT Maintenance	C/CPFF	Northrop Grumman : AL, CO	2.927	0.355	Nov 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Intelligence - Prior year Intelligence Support no longer funded in FYDP	Various	Various : Various	7.770	0.000		0.000		0.000		-		0.000	0.000	7.770	0.000
Counterintelligence - CI Analysis & Support	Allot	MDA : AL, CO, VA	17.642	3.932	Oct 2020	2.598	Oct 2021	2.702	Oct 2022	-		2.702	Continuing	Continuing	Continuing
Counterintelligence - CI Analysis and Support	C/CPFF	TEAMS : AL, CO, VA	28.272	3.855	Nov 2020	3.897	Nov 2021	4.064	Nov 2022	-		4.064	Continuing	Continuing	Continuing
Counterintelligence - CI Surveillance Gear	Various	Various : Various	1.484	0.349	Dec 2020	0.441	Dec 2021	0.450	Nov 2022	-		0.450	Continuing	Continuing	Continuing
Counterintelligence - Prior Year Counterintelligence Support no longer funded in FYDP	C/CPFF	MIDAESS : VA	1.069	0.000		0.000		0.000		-		0.000	0.000	1.069	0.000
Cybersecurity Engineering Program - Cybersecurity - FFRDC	FFRDC	Aerospace : CA, VA	3.663	0.000		0.000		0.000		-		0.000	0.000	3.663	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Cybersecurity Engineering Program - Cybersecurity - FFRDC (2)	FFRDC	MITRE : VA, AL	3.858	0.000		0.000		0.000		-		0.000	0.000	3.858	0.000
Cybersecurity Engineering Program - Cybersecurity Engineering	Allot	MDA : VA, AL	17.792	1.352	Oct 2020	1.429	Oct 2021	2.606	Oct 2022	-		2.606	Continuing	Continuing	Continuing
Cybersecurity Engineering Program - Cybersecurity Engineering - Hardware	Various	Various : AL, CO, VA	1.107	0.498	Nov 2020	0.588	Nov 2021	0.598	Nov 2022	-		0.598	Continuing	Continuing	Continuing
Cybersecurity Engineering Program - Cybersecurity Engineering CSS	C/CPFF	TEAMS : VA, AL	5.303	1.655	Nov 2020	2.238	Nov 2021	1.337	Nov 2022	-		1.337	Continuing	Continuing	Continuing
Program Protection - Declassification Analysis	C/CPFF	TEAMS : VA, AL	11.869	1.225	Nov 2020	2.202	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Program Protection - Program Protection Analysis	Allot	MDA : VA, AL	33.285	4.566	Oct 2020	4.514	Oct 2021	4.694	Oct 2022	-		4.694	Continuing	Continuing	Continuing
Program Protection - Program Protection Analysis & Support	C/CPFF	TEAMS : AL, AK, CA, CO, VA	32.522	3.365	Nov 2020	2.526	Nov 2021	5.930	Nov 2022	-		5.930	Continuing	Continuing	Continuing
Program Protection - Program Protection Support	Various	Various : AL, VA, CO	4.353	1.005	Nov 2020	0.870	Nov 2021	1.142	Nov 2022	-		1.142	Continuing	Continuing	Continuing
Threat Systems Engineering - Prior Year Threat Systems Engineering Support no longer funded in FYDP	Various	Various : AL, MD, VA	19.225	0.000		0.000		0.000		-		0.000	0.000	19.225	0.000
Threat Systems Engineering - Threat Systems Engineering	Allot	MDA : VA, AL, CO	26.316	1.509	Oct 2020	3.282	Oct 2021	3.491	Oct 2022	-		3.491	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - CSS	C/CPFF	TEAMS, Various : VA, AL	13.516	1.775	Nov 2020	3.787	Nov 2021	4.079	Nov 2022	-		4.079	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Threat Systems Engineering - Threat Systems Engineering - CSS 2	C/CPFF	Various : VA, AL	0.000	0.000		3.195	Nov 2021	2.913	Nov 2022	-		2.913	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - FFRDC	FFRDC	MIT/LL : MA	5.425	0.506	Nov 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - OGA	MIPR	Various : CA, VA, AL	7.669	4.361	Dec 2020	0.000		0.000		-		0.000	0.000	12.030	0.000
Threat Systems Engineering - Threat Systems Engineering - UARC	FFRDC	JHU/APL : MD	6.964	1.460	Nov 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			322.365	42.890		39.550		42.036		-		42.036	Continuing	Continuing	N/A

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	322.365	42.890	39.550	42.036	-	42.036	Continuing	Continuing	N/A

Remarks
Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.
Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Missile Defense Agency **Date:** April 2022

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

	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 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
MD28 Intelligence & Security	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
Annual Declassification Review - 2021		◇	◇	◇																								
Adversary Data Package (ADP) - 2021																												
ADP - 2022																												
MDA OPSEC Report to USD(I) - 2022																												
Annual Declassification Review - 2022																												
Annual Report to Congress for SAPs (FY 2022)																												
Annual Declassification Review - 2023													◇	◇	◇	◇												
Adversary Data Package (ADP) - 2023																												
MDA OPSEC Report to USD(I) - 2024																												
Annual Declassification Review - 2024																	◇	◇	◇	◇								
Adversary Data Package (ADP) - 2024																												
Annual Declassification Review - 2025																					◇	◇	◇	◇				
Adversary Data Package (ADP) - 2025																												
MDA OPSEC Report to USD(I) - 2026																												
Annual Declassification Review - 2026																									◇	◇	◇	◇
Adversary Data Package (ADP) - 2026																												
Annual Declassification Review - 2027																												
Adversary Data Package (ADP) - 2027																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD28 / Intelligence & Security

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD28 Intelligence & Security	1	2021	4	2027
Annual Declassification Review - 2021	2	2021	4	2021
Adversary Data Package (ADP) - 2021	4	2021	4	2021
ADP - 2022	4	2022	4	2022
MDA OPSEC Report to USD(I) - 2022	4	2022	4	2022
Annual Declassification Review - 2022	4	2022	4	2022
Annual Report to Congress for SAPs (FY 2022)	4	2022	4	2022
Annual Declassification Review - 2023	2	2023	1	2024
Adversary Data Package (ADP) - 2023	4	2023	4	2023
MDA OPSEC Report to USD(I) - 2024	1	2024	1	2024
Annual Declassification Review - 2024	2	2024	1	2025
Adversary Data Package (ADP) - 2024	4	2024	4	2024
Annual Declassification Review - 2025	2	2025	1	2026
Adversary Data Package (ADP) - 2025	4	2025	4	2025
MDA OPSEC Report to USD(I) - 2026	1	2026	1	2026
Annual Declassification Review - 2026	2	2026	1	2027
Adversary Data Package (ADP) - 2026	4	2026	4	2026
Annual Declassification Review - 2027	2	2027	1	2028
Adversary Data Package (ADP) - 2027	4	2027	4	2027

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency										Date: April 2022		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD30 / BMD Information Management Systems			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MD30: BMD Information Management Systems	651.993	83.053	92.729	87.822	-	87.822	92.382	92.318	96.775	95.478	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note
Decrease from FY 2022 to FY 2023, reflects Network Optimization and contract support efficiencies.

A. Mission Description and Budget Item Justification

The MDS Information Management Systems budget project funds information technology mission critical functions necessary for the efficient operations and safeguarding of MDS information in compliance with DoD policies and in keeping with the President's declaration on 29 May 2009, "cyber threat is one of the most serious economic and national security challenges we face as a nation". Information Technology (IT) is critical to the day-to-day functions of MDA personnel to communicate (classified and unclassified) with each other, Congress, senior DoD and other U.S. Government agency personnel, Combatant Commander's, NATO partners, and other industry partners. Communication among these organizations facilitates the MDA mission of developing and fielding an integrated MDS to defend the United States, our deployed forces, allies, and friends against all ranges of enemy ballistic missiles in all phases of flight.

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

Project MD30 is aligned into the following inter-agency mission critical IT services and the associated plans in accordance with the Federal Information Technology Shared Services Strategy.

1. End User Support
2. Special Purpose Processing Nodes (SPPNs)
3. IT Planning and Solutions
4. Unified Communications
5. Portal and Data Services
6. Business Automation Services

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
<p>Title: End User Support</p> <p>Articles:</p> <p>Description: Provides Information Technology (IT) operations, support and maintenance (24 hours a day, 7 days a week, 365 days a year) to over 10,500 MDA worldwide users (classified and unclassified) executing the MDS Research, Development, Test and Engineering (RDT&E) mission. Services include Integrated Service Desk support (Help Desk and Client Support Services); management of hardware and software maintenance and licensing; and monitoring network activity to ensure users comply with DoD policies for the proper use of information systems. Services also include printing and copying; email and file; directory and authentication services. Includes investments in equipment at end-of-life to comply with Federal and DoD mandated cybersecurity policies. Plans, engineers and implements sustainment projects for common-use IT services and business systems consistent with the IT architecture road map. Provides life-cycle management of over 190,000 IT assets including IT procurement, receiving, shipping/transportation, warehousing, transfers and disposal using the Defense Property Accountability System (DPAS). Increase Joint Worldwide Intelligence Communications System (JWICS) capability to provide connectivity and interoperability with intelligence community via Common Operating Environment (COE).</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: -SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Decrease from FY 2022 to FY 2023, reflects Network Optimization and reduction of contract support.</p>	26.159	24.149	12.605
<p>Title: Special Purpose Processing Nodes (SPPN)</p> <p>Articles:</p> <p>Description: Provides for the developmental/specialty engineering and operational strategies and concepts; and planning, design, implementation and maintenance for MDA Research, Development, Test and Evaluation (RDT&E) Special Purpose Processing Nodes (SPPNs) in Huntsville, AL and Colorado Springs, CO. The SPPN infrastructure consists of routers, switches, firewalls, compute, storage and intrusion detection systems that provide Information Technology (IT) support to over 10,500 MDA classified/unclassified users worldwide. The SPPNs support dynamic and rapid modifications and reconfigurations of network infrastructure in support of RDT&E mission and event unique configurations. Funds provide for network operations and performance monitoring; development of detailed solutions, designs, and plans; Disaster Recovery and Continuity of Operations (DR and COOP) rehearsals; Internet access management; and web filtering. Sustains core communications distribution services</p>	6.771	4.809	6.779

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023
<p>across the MDA Enterprise. Includes investments in equipment at end-of-life to comply with Federal and DoD mandated cybersecurity policies.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: -SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: The increase from FY 2022 to FY 2023 provides additional government support for Cloud-first policy (DoD Mandate).</p>				
<p>Title: Information Technology (IT) Planning and Solutions</p> <p align="right">Articles:</p> <p>Description: Provides Information Technology (IT) engineering support for new requirements analysis, design, planning and implementation of IT solutions for real-world issues. Addresses the increasing demand for more complex IT products and highly specialized IT services. Manages the prioritization and integration of investments in the MDA IT Portfolio to ensure compliance with Federal and DoD polices. Supports the MDA Chief Information Officer Enterprise Architecture Board, Project Steering Committee and the Change Control Board. Ensures compliance with Federal Laws, DoD policies, directives and regulations including: Clinger-Cohen Act, the Federal Information Security Management Act (FISMA), and the Office of Management and Budget (OMB) IT budget reporting policies.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: -SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Increase from FY 2022 to FY 2023 provides additional Contract Support Services (CSS) to meet increased demand for IT services.</p>		10.998 -	13.796 -	16.444 -
Title: Unified Communications		21.108	23.481	23.333

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
<p align="right">Articles:</p> <p>Description: Provides for the management, operations and sustainment of classified and unclassified globally deployed video teleconferencing capabilities and equipment. Also includes unclassified desktop instant messaging, wireless services, and collaboration capabilities. Provides and implements engineering solutions for all unified communications services. Supports MDA global Research, Development, Test and Engineering (RDT&E) mission for classified and unclassified voice services and interfaces with the Defense Information System Network (DISN) Video Services Global (DVSG), the Defense Research and Engineering Network (DREN), Joint Service Provider (JSP) and commercial vendors. Maintenance agreements and licenses for MDA Enterprise telecommunications equipment classified and unclassified mobile and desktop telephony devices.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: -SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>	-	-	-
<p>Title: Portal and Data Services</p> <p align="right">Articles:</p> <p>Description: Provides for the management, operation and maintenance support for the classified and unclassified MDA Portal application and the Information Technology (IT) portal infrastructure. The support includes web-based developmental engineering and operations, planning, design, application implementation, content management and training. Also provides MDA Privacy Office and Civil Liberties compliance and reporting, and provides data management services to accommodate MDA users.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: -SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p>	9.879 -	14.384 -	12.763 -

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
Decrease FY 2022 to FY 2023 reflects realignment of requirements in support of program reorganization.			
Title: Business Automation Services	8.138	12.110	15.898
Articles:	-	-	-
Description: Provides for the management, operation and maintenance of enterprise business applications for the MDA community to access and share various sources of available data, information and knowledge and enable improved organization, retrieval, manipulation, and storage. Develop and implement an unclassified and classified Qlik Sense business intelligence capability. Operate and maintain nine Defense Business Systems that meet the reporting requirements of Title 10 United States Code section 2222; these include Electronic Learning Management System (Cloud LMS), Program Resource Internet Database Environment (PRIDE), Information Management Program Activity control Tool (IMPACT), Standard Procurement System (SPS), Human Resource Tracking System/Personnel Tracking System (HRTS/PTS), TEAMMATE, TASK MANAGEMENT TOOL (TMT), Electronic Content and Records Tool (Cloud ECART), and MDA's enterprise data visualization tool (QLIK Sense) for business intelligence and data integration.			
Specific and/or unique accomplishments to each FY are as follows:			
FY 2022 Plans: -SEE ABOVE.			
FY 2023 Plans: - SEE ABOVE.			
FY 2022 to FY 2023 Increase/Decrease Statement: The increase from FY2022 to FY2023 provides funding for the QLIK Sense application.			
Accomplishments/Planned Programs Subtotals	83.053	92.729	87.822

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u> <u>Base</u>	<u>FY 2023</u> <u>OCO</u>	<u>FY 2023</u> <u>Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603176C: <i>Advanced Concepts and Performance Assessment</i>	49.069	40.000	16.737	-	16.737	17.265	17.693	18.109	18.477	Continuing	Continuing
• 0603180C: <i>Advanced Research</i>	29.621	47.966	22.023	-	22.023	22.758	23.296	23.851	24.335	Continuing	Continuing
• 0603881C: <i>Ballistic Missile</i>	305.081	213.382	190.216	-	190.216	196.279	213.945	224.146	238.269	Continuing	Continuing
<i>Defense Terminal Defense Segment</i>											

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency **Date:** April 2022

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

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

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,195.853	724.028	667.524	-	667.524	870.817	802.617	781.973	765.733	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	259.605	254.962	231.134	-	231.134	250.028	274.705	276.254	257.575	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	861.809	639.549	600.072	-	600.072	658.798	574.014	570.018	580.496	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	639.027	564.946	589.374	-	589.374	575.883	588.824	612.853	605.801	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	49.261	50.594	50.269	-	50.269	51.849	55.960	56.488	54.980	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	54.026	52.403	49.367	-	49.367	51.744	56.502	57.833	59.006	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	120.063	147.241	164.668	-	164.668	174.934	215.367	198.956	179.622	Continuing	Continuing
• 0603913C: <i>Israeli Cooperative Programs</i>	300.000	300.000	300.000	-	300.000	300.000	300.000	300.000	300.000	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	364.994	389.156	367.824	-	367.824	363.963	421.261	476.991	490.176	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	534.348	560.478	559.513	-	559.513	555.341	623.995	628.146	632.072	Continuing	Continuing
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	52.804	43.158	27.678	-	27.678	26.896	26.021	26.842	27.385	Continuing	Continuing
• 0901598C: <i>Management HQ - MDA</i>	26.902	24.102	25.259	-	25.259	25.836	26.438	26.984	27.524	Continuing	Continuing

Remarks

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MD30 / <i>BMD Information Management Systems</i>

D. Acquisition Strategy

This acquisition strategy to provide IT services for MDA consists of three MDA issued contracts. The Integrated Research and Development for Enterprise Solutions (IRES) provides IT design, engineering, implementation and sustainment services. The Research and Development Enterprise Collaboration Services (RECS) provides Video Teleconferencing, Portal, Data and Business Automation Services. MDA issues multiple Military Interdepartmental Purchase Requests (MIPRs) for leased communications including the Defense Information Systems Agency (DISA), DREN and the US Army.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks

N/A

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
End User Support - End User Consolidated Support Logistics/Asset Mgmt	C/CPFF	Venturi : AL, CO	0.897	0.457	Nov 2020	0.358	Nov 2021	0.365	Nov 2022	-		0.365	Continuing	Continuing	Continuing
End User Support - End User Civilian Pay	Allot	MDA : AL, CO, NM, VA	23.044	3.157	Oct 2020	4.120	Oct 2021	2.324	Oct 2022	-		2.324	Continuing	Continuing	Continuing
End User Support - End User IT Hardware Support	C/CPAF	Jacobs Engineering : AL, AK, CA, CO, HI, NM, VA	41.954	4.779	Nov 2020	7.334	Nov 2021	2.102	Nov 2022	-		2.102	Continuing	Continuing	Continuing
End User Support - End User IT Software / Licenses	C/CPAF	Jacobs Engineering : AL, AK, CA, CO, HI, NM, VA	22.909	12.128	Nov 2020	5.994	Nov 2021	4.042	Nov 2022	-		4.042	Continuing	Continuing	Continuing
End User Support - End User Operational Support	C/CPAF	Jacobs Engineering : AL, AK, CA, CO, HI, NM, VA	56.696	5.638	Oct 2020	6.343	Oct 2021	3.772	Oct 2022	-		3.772	Continuing	Continuing	Continuing
Special Purpose Processing Nodes (SPPN) - SPPN Civilian Pay	Allot	MDA : AL, CO, VA	9.087	1.041	Oct 2020	1.512	Oct 2021	3.501	Oct 2022	-		3.501	Continuing	Continuing	Continuing
Special Purpose Processing Nodes (SPPN) - SPPN Licenses	C/CPAF	Jacobs Engineering : AL, CO, VA	89.362	1.983	Nov 2020	2.087	Nov 2021	2.023	Nov 2022	-		2.023	Continuing	Continuing	Continuing
Special Purpose Processing Nodes (SPPN) - SPPN Operational Support	C/CPAF	Various : AL, CO, VA	100.735	3.747	Jan 2021	1.210	Jan 2022	1.255	Jan 2023	-		1.255	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Travel / PCS	Allot	MDA Civilian Travel : AL, CO, VA	0.000	0.068	Oct 2020	0.333	Oct 2021	0.237	Oct 2022	-		0.237	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Civilian Pay	Allot	MDA : AL, CO, VA	9.983	1.539	Oct 2020	2.236	Oct 2021	3.569	Oct 2022	-		3.569	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Consolidated Support	C/CPFF	Five Stones, Yorktown, Peopletec : AL, CO, VA	31.251	6.610	Aug 2021	6.402	Aug 2022	7.221	Aug 2023	-		7.221	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Operational Support	C/CPAF	Jacobs Engineering : AL, CO, VA	41.223	2.781	Mar 2021	2.377	Mar 2022	5.417	Mar 2023	-		5.417	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions SWDC PNT	C/CPFF	Northrup Grumman : AL, CO, VA	6.896	0.000		2.448	Mar 2022	0.000		-		0.000	0.000	9.344	6.896
Unified Communications - Unified Communications Civilian Pay	Allot	MDA : AI, CO, VA	9.438	0.996	Oct 2020	1.450	Oct 2021	1.076	Oct 2022	-		1.076	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Hardware Licenses	C/CPFI	Jacobs Engineering : AL, CO, VA	4.386	1.391	Nov 2020	1.405	Nov 2021	1.419	Nov 2022	-		1.419	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Leased Communications/ Licenses	MIPR	DISA/DREN/IT2S : AL, AK, CA, CO, HI, NM, VA	30.789	8.067	Oct 2020	9.107	Oct 2021	8.859	Oct 2022	-		8.859	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Operational Support	C/CPAF	Jacobs Engineering : AL, CO, VA	14.133	0.558	Dec 2020	3.118	Nov 2021	1.828	Nov 2022	-		1.828	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency												Date: April 2022			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603890C / BMD Enabling Programs				MD30 / BMD Information Management Systems							
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Unified Communications - Unified Communications VTC Operations Support	C/CPIF	NETWORK MANAGEMENT RESOURCES, INC. : AL, AK, CO, NM, VA	40.308	8.767	Apr 2021	7.006	Apr 2022	8.742	Apr 2023	-		8.742	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Wireless Services	C/FFP	AT&T MOBILITY LLC : AL, CO, VA	9.584	1.329	Oct 2020	1.395	Oct 2021	1.409	Oct 2022	-		1.409	Continuing	Continuing	Continuing
Unified Communications - VTC HW/Break-Fix	C/CPIF	NETWORK MANAGEMENT RESOURCES, INC. : AL, CO, VA	3.185	0.000		0.000		0.000		-		0.000	0.000	3.185	0.000
Portal and Data Services - Portal and Data Services Civilian Pay	Allot	MDA : AL, CO, VA	7.743	0.831	Oct 2020	1.208	Oct 2021	0.497	Oct 2022	-		0.497	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Operational	C/CPAF	Online Subscriptions Services : AL, CO, VA	3.129	0.539	Oct 2020	0.354	Oct 2021	0.357	Oct 2022	-		0.357	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Operational Support	C/FFP	Network Management Resources : AL, CO, VA	30.802	5.984	Apr 2021	6.086	Apr 2022	6.191	Apr 2023	-		6.191	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Operations and Support	C/CPAF	Jacobs Engineering : AL, CO, VA	15.699	2.525	Jan 2021	6.736	Jan 2022	5.718	Jan 2023	-		5.718	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Cloud E Cart	MIPR	TBD : AL, CO, VA	0.000	0.000		0.613	Sep 2022	0.622	Sep 2023	-		0.622	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Civilian Pay	Allot	MDA : AL, CO, VA	4.350	0.331	Oct 2020	0.485	Oct 2021	0.665	Oct 2022	-		0.665	Continuing	Continuing	Continuing
Business Automation Services - Business Automation E-Tasker/ Accenture Task Mgt Tool	Various	TBD : AL, CO, VA	0.000	0.000		0.234	Oct 2021	0.237	Oct 2022	-		0.237	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency												Date: April 2022			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
0400 / 4						PE 0603890C / BMD Enabling Programs				MD30 / BMD Information Management Systems					
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Business Automation Services - Business Automation ELMS/ USA Learning	MIPR	TBD : AL, CO, VA	0.000	0.000		0.291	Oct 2021	0.294	Oct 2022	-		0.294	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Human Resources Tracking System	Various	TBD : AL, CO, VA	0.000	0.000		0.557	Oct 2021	0.568	Oct 2022	-		0.568	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Licenses	C/CPAF	Jacobs Engineering : AL, CO, VA	7.412	0.000		0.000		0.000		-		0.000	0.000	7.412	0.000
Business Automation Services - Business Automation Operational Support	C/CPAF	Jacobs Engineering : AL, CO, VA	32.199	7.807	Jan 2021	6.208	Jan 2022	8.343	Jan 2023	-		8.343	Continuing	Continuing	Continuing
Business Automation Services - Business Automation QLIK	C/CPAF	NETWORK MANAGEMENT RESOURCES, INC. : AL, CO, VA	0.000	0.000		3.132	Jun 2022	3.782	Apr 2023	-		3.782	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Service Support	C/FFP	NETWORK MANAGEMENT RESOURCES, INC. : AL, CO, VA	0.000	0.000		0.590	Mar 2022	0.601	Apr 2023	-		0.601	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Services Support	MIPR	CACI : AL, CO, VA	0.124	0.000		0.000		0.786	Oct 2022	-		0.786	0.000	0.910	0.000
CARES Act Funding (COVID 19) - CARES IT Hardware Support	C/CPAF	Jacobs Engineering : AL, AK, CA, CO, HI, NM, VA	4.675	0.000		0.000		0.000		-		0.000	0.000	4.675	0.000
Subtotal			651.993	83.053		92.729		87.822		-		87.822	Continuing	Continuing	N/A
Remarks															
N/A															

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	651.993	83.053	92.729	87.822	-	87.822	Continuing	Continuing	N/A

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

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications Follow-On	1	2021	4	2027
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - Follow-On	1	2021	4	2027
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - Follow-On	1	2021	4	2027
Revise and Test Contingency Plans for Information Technology Systems - Follow-On	1	2021	4	2027
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - Follow-On	1	2021	4	2027
Procure, Implement, and Asset Control for Information Technology Operational Systems -Follow-On	1	2021	4	2027
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - Follow-On	1	2021	4	2027
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - Follow-On	1	2021	4	2027
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - Follow-On	1	2021	4	2027
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - Follow-On	1	2021	4	2027
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - Follow-On	1	2021	4	2027
Sustain the Information Technology Infrastructure Across the MDA Enterprise - Follow-On	1	2021	4	2027

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency										Date: April 2022		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MC30 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MC30: <i>Cyber Operations</i>	274.974	62.539	103.565	81.519	-	81.519	89.048	91.568	95.843	97.761	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Accomplishments map to the Office of Management and Budget (OMB) and Office of the Secretary of Defense (OSD) approved Cybersecurity Taxonomy including 1) Preventing Malicious Activity, 2) Detect, Analyze and Mitigate Intrusions, 3) Planning, Policy Development and Workforce Management, 4) Continuous Monitoring and 5) Outside Federal Outreach, Defense Industrial Base.

The decrease from FY2022 to FY2023 reflects FY2022 Congressional Plus-up providing improvements to cybersecurity of BMDS critical infrastructure and compliance with DOD Cybersecurity Discipline Implementation Plan.

A. Mission Description and Budget Item Justification

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

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

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

This project provides funds to sustain the Risk Management Framework (RMF) and Controls Validation Testing (CVT) activities, analysis of validation results, risk assessments and reviews of proposed Program Manager/Information Systems Security Manager (PM/ISSM) Plan of Action and Milestones (POA&M) for the MDA mission, test and common-use IT systems. Maintains the Authorization and Assessment (A&A) data repository, capturing the RMF documentation (artifacts, validation results, and Cybersecurity Risk Assessment results, and Authorizing Official (AO) decisions) and POA&M on all MDA information systems. Supports the monitoring and tracking of Cybersecurity mitigations detailed in IT cybersecurity POA&Ms. Activities include preparation of A&A documentation and authorization recommendations to the MDA PM/ISSM and AO. Independent Verification and Validation (IV&V) team actions ensure the availability, integrity, confidentiality and non-repudiation of the MDA mission, test and common-use IT systems. Activities in the Project are necessary to comply with Federal Information Security Management Act (FISMA).

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

This project funds the MDA Global Network Operations and Security Center(GNOSC) responsible for monitoring, managing, patching, and maintaining MDA network and core IT services; issuing and tracking Technical Compliance Orders; and coordinating overarching Enterprise NetOps. The GNOSC provides the network security operations centers and supporting processes to protect and defend the MDA Enterprise information and information systems.

The MDA Computer Emergency Response Team (CERT), MDA's Tier 2 Cybersecurity Service Provider (CSSP) monitors the MDA classified and unclassified information technology RDT&E and common-use IT networks and reports vulnerabilities. The MDA CERT coordinates with U.S. Cyber Command to identify and implement network vulnerability updates and patches to comply with U.S. Cyber Command vulnerabilities identified for DoD networks. During FY 2020 began the development of the MDS (Weapons Systems) Cybersecurity Service provider (CSSP) as a fully accredited Tier II in accordance with CJCSI 6510.01F, DoD O-8530.1, and the DoD Cybersecurity Discipline Implementation Plan.

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

Facility-related control systems (FRCS) include building management systems (BMS), electronic security systems (ESS), industrial control systems (ICS) and supervisory control and data acquisition (SCADA) systems in support of facility operations.

This project provides for the management of MDA's FRCS cybersecurity program, cybersecurity engineering for FRCS incorporated in MDA facility plans for construction and upgrades, as well as the implementation of RMF and Computer Network Defense (CND) on FRCS in MDA facilities.

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

	FY 2021	FY 2022	FY 2023
<p>Title: Preventing Malicious Cybersecurity Activity</p> <p align="right">Articles:</p> <p>Description: Provide: Federal Information Security Management Activity Act (FISMA)-related activities; Intrusion Prevention Systems; Trusted Internet Connections; Identity Management and Authentication; Supply Chain Management; Network & Data Protection and Insider Threat Mitigation Activities.</p> <p>This effort includes integration and test capabilities for element interface verification and provide operations and sustainment of the deployed Position, Navigation, and Timing (PNT) Last Mile integration capabilities at MDS locations.</p> <p>Recurring Activities for Preventing Malicious Cyber Attacks:</p> <ul style="list-style-type: none"> -Maintain a current Cybersecurity risk and residual risk assessment of the MDS. -Coordinate Cybersecurity compliance for all IT projects and remote sites. -Implement measures to prevent unauthorized access to MDA Information Systems (IS) based on analysis of threat vectors. <p>Evaluate known threats against vulnerabilities to determine mitigation strategies.</p> <ul style="list-style-type: none"> -Track ports, protocols, and services. -Coordinate with private partnerships to ensure the Defense Industrial Base protects MDA data. 	<p>15.421</p> <p>-</p>	<p>43.660</p> <p>-</p>	<p>17.646</p> <p>-</p>

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC30 / Cyber Operations

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
<p>FY 2022 Plans: Implement a Defensive Cyber Operations Capability through providing improvements to cybersecurity of BMDS critical infrastructure and compliance with DOD Cybersecurity Discipline Implementation Plan.</p> <ul style="list-style-type: none"> -Plan and execute Cyber VISUM events and implement MDS Cybersecurity Resilience Strategy. -Expand User Activity Monitoring and implement technology protection to improve cybersecurity, insider threat, and software assurance posture of the MDS; and provide increased ability to detect insider threats. -Recapitalization of Data Center/IT, addition of server/storage capability to support TS level processing. -Implement Mission and RDT&E Software Assurance tools and processes. -Provide Unclassified Virtual Desktop Infrastructure, to include telework remote access and standardized desktop. -Conduct Cyber Assistance Team Threat Hunting for classified DIB environments. * Optimization of MDA Integration and Operations Center (MDIOC) Infrastructure Special Use Space <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: The decrease from FY2022 to FY2023 reflects FY2022 Congressional Plus-up providing improvements to cybersecurity of BMDS critical infrastructure and compliance with DOD Cybersecurity Discipline Implementation Plan.</p>			
<p>Title: Planning, Policy Development, Workforce Training & Force Management</p> <p align="right">Articles:</p> <p>Description: Provide National Initiative for Cybersecurity Education (NICE); Workforce Development; Security Training for Employees with Significant Security Responsibilities; and Cybersecurity Strategic Planning, Policy, Oversight and Management.</p> <p>Recurring Activities for the Planning, Policy Development, Workforce Training and Force Management Accomplishment:</p> <ul style="list-style-type: none"> -Document and maintain Standard Operating Instructions/Procedures for consistent interface with the MDA MDS Network Operations Support Center (BNOSC) and the MDS elements. -Publish MDA policies to incorporate new requirements stated in DoDI 8510.01 Risk Management Framework (RMF) to comply with 237 new controls and 817 control enhancements into controls validation testing of MDS elements and networks. -Manage the Information Assurance Workforce Improvement Program to certify Cybersecurity professionals and report compliance in accordance with Federal Information Security Management Act (FISMA) and Information Assurance Workforce Improvement Program (DoD Manual 8570.1), achieving the DoD certification goal; reports IA Risk Assessments, Primary RMF artifacts. -Interface with other combatant commands to provide MDS Mission RMF package. 	3.171 -	4.794 -	4.873 -

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
---	----------------	----------------	----------------

<p>-Conduct an annual IA Security review of the MDS in accordance with DoDI 8510.01 and provide an analysis of changes in IA posture.</p> <p>-Collect, analyze, and report vulnerability and cyber warfare attack metrics to the MDA CIO, MDA leadership, and U.S. Cyber Command.</p> <p>-Provide Cybersecurity engineering and planning guidance and vulnerability assessment for all MDA Information Technology acquisition programs.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: -SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>			
---	--	--	--

<p>Title: Continuous Monitoring</p> <p>Description: Provide Information Technology (IT) Security Tools and Other Continuous Monitoring.</p> <p>Recurring Activities for the Continuous Monitoring Accomplishment:</p> <p>-Manage data-at-rest encryption to ensure compliance with DoD mandated policies.</p> <p>-Procure/renew cybersecurity software licensing agreements for IT Security Tools.</p> <p>-Procure/renew cybersecurity hardware maintenance for hardware.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: -SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p>	<p>Articles:</p>	8.230	8.228	8.282
	-	-	-	

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
---	----------------	----------------	----------------

N/A			
-----	--	--	--

Title: Detect, Analyze and Mitigate Intrusions	Articles:	35.546	45.786	48.921
		-	-	-

Description: Provide cybersecurity activities including: Federal Incident Response Centers; National Institute of Standards for Technology (NIST) SP 800.53 Implementation; Cyber Threat Analysis; Cyber Continuity of Operations (COOP); Incident Response and Remediation; Forensics and Damage Assessment; and Computer Emergency Response Teams.

Recurring Activities for the Detect, Analyze and Mitigate Intrusions Accomplishment:

- Test Risk Management Framework (RMF) controls on all IT supporting research, development, test and evaluation and DoD-controlled Information Technology (IT) operated by a contractor or other entity on behalf of DoD and reported.
- Conduct RMF analysis and reporting for the MDS such as evaluation of residual risk by incorporating current and proposed MDS monitoring and mitigations.
- Maintain MDA Computer Emergency Response Team (MDA CERT) as a fully accredited Tier II Cybersecurity Service provider (CSSP) in accordance with CJCSI 6510.01F and DoD O-8530.1.
- Perform CSSP services (protect, detect, respond and sustain) for all MDA Common-use IT Services, MDA Mission and test networks and enclaves 24 hours a day, 7 days a week, 365 days a year.
- Conduct application testing that looks for vulnerabilities and issues using a number of tactics, technical and procedures.
- Conduct vulnerability scanning of MDA network to assess risks to MDA data from inside and outside sources.
- Conduct monthly cybersecurity vulnerability audits.
- Issue and track implementation of Information Assurance Vulnerability Alerts (IAVA), Bulletins and Technical Advisories.
- Implement Information Assurance Vulnerability Alerts (IAVA) and Communication Tasking Orders remediation and patches.
- Perform network security monitoring of all MDA subscriber networks and enclaves.
- Conduct system forensic analysis, review content of compromised system, document files and data, and identify tactics, techniques and procedures used by an attacker to gain access.
- Develop and maintain the RMF package for the MDS Mission System to support a full Authorization to Operation (ATO).
- Compile and validate MDS Mission Element-level authorization and assessment documents to include MDS Element-level System Security Plans (SSPs), Security Controls Traceability Matrix (SCTM), Plan of Action and Milestone (POA&M) artifacts and support conduct of Control Validation Testing (CVT). Execute controls validation integration testing as part of developmental testing efforts for the MDS.
- Ensure MDA mission, test, and common-use IT systems are operated securely in accordance with DoD Risk Management Framework policies.
- Prepare and maintain current RMF documentation for MDA networks and systems reported to DoD and Office of Management and Budget (OMB).

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
---	---------	---------	---------

<p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: -Develop and maintain the MDS (Weapons Systems) Cybersecurity Service provider (CSSP) as a fully accredited Tier II in accordance with CJCSI 6510.01F, DoD O-8530.1, and the DoD Cybersecurity Discipline Implementation Plan.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>			
--	--	--	--

<p>Title: Outside Federal Outreach - Defense Industrial Base</p> <p align="right">Articles:</p> <p>Description: Review current Cybersecurity Policies and coordinating with MDA Missile Defense System (MDS) Programs to ensure all applicable Cybersecurity clauses are included into MDA contracts with MDA Industry partners in the Defense Industrial Base (DIB) to ensure protection of MDS Controlled Unclassified Information (CUI).</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: -SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Increase from FY 2022 to FY 2023, provides additional government cybersecurity outreach support to MDA Defense Industrial Base (DIB) based on MDA mission requirements (NIST 800-171).</p>	0.171 -	0.159 -	0.832 -
---	------------	------------	------------

<p>Title: Facility Related Control Systems (FRCS)</p> <p align="right">Articles:</p> <p>Description: Provide Facility-Related Control Systems (FRCS) program oversight to include policies, procedures, plans, reports and budgets to support agency FRCS. - Systems development, inventory, assessment, mitigation and sustainment IAW DoDI 8500.01 Cybersecurity and DoDI 8510.01 Risk Management Framework (RMF) throughout the life cycle of each FRCS.</p>	0.000 -	0.938 -	0.965 -
--	------------	------------	------------

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Manage the cybersecurity activities to protect the FRCS, including vulnerability assessment and management, malware protection, information system continuous monitoring (ISCM), cyber incident handling, and auditing to detect, deter, and mitigate insider threats, IAW DoDI 8530.01 Cybersecurity Activities Support to DoD Information Network Operations. - Oversee the development of FRCS in facilities to ensure cybersecurity is designed and built into the system IAW Unified Facilities Criteria (UFC) 4-010-06 Cybersecurity Of Facility-Related Control Systems to reduce cybersecurity risk and ensure compliance with applicable National Institute of Standards and Technology (NIST) Special Publication (SP) 800-53 security controls. - Manage the training and development of the FRCS cybersecurity workforce to ensure all personnel are qualified to perform assigned cybersecurity duties IAW DoDD 8140.01 Cyberspace Workforce Management. <p>FY 2022 Plans: -SEE ABOVE</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>			
Accomplishments/Planned Programs Subtotals	62.539	103.565	81.519

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

N/A

Remarks

D. Acquisition Strategy

The Integrated Research and Development for Enterprise Solutions (IRES) provides IT design, engineering, implementation and sustainment services.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-	-	-	-	-	-	-	-	-	-	-	N/A

Remarks
N/A

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Preventing Malicious Cybersecurity Activity - COMSEC	MIPR	National Security Agency : AL, CO, VA	0.200	0.221	Apr 2021	0.223	Apr 2022	0.225	Apr 2023	-		0.225	Continuing	Continuing	Continuing
Preventing Malicious Cybersecurity Activity - Civilian Pay	Allot	MDA : AL, CO, VA, NM	4.888	1.361	Oct 2020	2.602	Oct 2021	1.502	Oct 2022	-		1.502	Continuing	Continuing	Continuing
Preventing Malicious Cybersecurity Activity - Consolidated Support CSM	C/CPFF	BOOZ ALLEN HAMILTON INC. : AL, CO, VA	2.175	0.000		0.689	Mar 2022	0.702	Nov 2022	-		0.702	Continuing	Continuing	Continuing
Preventing Malicious Cybersecurity Activity - Cyber CSS	C/CPAF	Jacobs Engineering : AL, COL, VA	49.521	13.839	Nov 2020	40.146	Nov 2021	15.217	Nov 2022	-		15.217	Continuing	Continuing	Continuing
Planning, Policy Development, Workforce Training & Force Management - A&AS Cyber BMDS CSM/CND	C/CPFF	BOOZ ALLEN HAMILTON INC. : AL, CO, VA	5.413	2.465	Nov 2020	1.914	Nov 2021	2.842	Nov 2022	-		2.842	Continuing	Continuing	Continuing
Planning, Policy Development, Workforce Training & Force Management - Civilian Pay	Allot	MDA : AL, CO, NM, VA	3.878	0.706	Oct 2020	1.763	Oct 2021	1.573	Oct 2022	-		1.573	Continuing	Continuing	Continuing
Planning, Policy Development, Workforce Training & Force Management - FFRDC	MIPR	MITRE : VA	0.000	0.000		0.449	Nov 2021	0.458	Nov 2022	-		0.458	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency												Date: April 2022			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MC30 / Cyber Operations					
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Planning, Policy Development, Workforce Training & Force Management - JWIC	MIPR	DIA : VA	0.000	0.000		0.668	Jan 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Continuous Monitoring - Continuous Monitoring - IT Security Tools	C/CPAF	Jacobs Engineering : AL, CO, VA	29.391	8.230	Jan 2021	8.228	Jan 2022	8.282	Jan 2023	-		8.282	Continuing	Continuing	Continuing
Detect, Analyze and Mitigate Intrusions - A&AS, BMDS CSM/CND	C/CPFF	BOOZ ALLEN HAMILTON INC. : AL, CO, VA	3.982	2.489	Aug 2021	2.538	Aug 2022	2.107	Aug 2023	-		2.107	Continuing	Continuing	Continuing
Detect, Analyze and Mitigate Intrusions - A&AS, Cyber Risk Mgmt	C/CPFF	Decisive Analytics Corporation : AL, CO, VA	10.676	3.985	Mar 2021	4.065	Mar 2022	4.146	Mar 2023	-		4.146	Continuing	Continuing	Continuing
Detect, Analyze and Mitigate Intrusions - Civilian Pay	Allot	MDA : AL, CO, NM,, VA	8.398	2.402	Oct 2020	3.695	Oct 2021	4.640	Oct 2022	-		4.640	Continuing	Continuing	Continuing
Detect, Analyze and Mitigate Intrusions - Civilian Travel / PCS	Allot	Civilian Travel : AL, CO, NM,, VA	0.000	0.200	Oct 2020	0.404	Nov 2021	0.408	Nov 2022	-		0.408	Continuing	Continuing	Continuing
Detect, Analyze and Mitigate Intrusions - Cyber CSS	C/CPAF	Jacobs Engineering : AL, CO, VA	142.894	26.470	Jan 2021	26.611	Jan 2022	27.084	Jan 2023	-		27.084	Continuing	Continuing	Continuing
Detect, Analyze and Mitigate Intrusions - Cyber Customer Support	C/CPAF	Network Management Resources : AL, CO, VA	8.775	0.000		0.000		0.000		-		0.000	0.000	8.775	8.775
Detect, Analyze and Mitigate Intrusions - Cyber Threat Hunting	C/CPAF	TBD : TBD	0.000	0.000		0.200	Aug 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Detect, Analyze and Mitigate Intrusions - Network/System assessment and authorization contract support services	C/FFP	BOOZ ALLEN HAMILTON INC. : VA	4.450	0.000		0.000		0.000		-		0.000	0.000	4.450	4.450

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Detect, Analyze and Mitigate Intrusions - Tier II CSSP	C/FFP	FIVE STONES RESEARCH CORPORATION : CO	0.000	0.000		8.273	Apr 2022	10.536	Apr 2023	-		10.536	Continuing	Continuing	Continuing
Outside Federal Outreach - Defense Industrial Base - Civilian Pay	Allot	MDA : AL, CO, NM, VA	0.333	0.171	Oct 2020	0.159	Oct 2021	0.832	Oct 2022	-		0.832	Continuing	Continuing	Continuing
Facility Related Control Systems (FRCS) - Cyber Security and Cyber Resiliency	MIPR	BOOZ ALLEN HAMILTON INC. : AL, VA	0.000	0.000		0.938	Nov 2021	0.965	Nov 2022	-		0.965	Continuing	Continuing	Continuing
Subtotal			274.974	62.539		103.565		81.519		-		81.519	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	274.974	62.539	103.565	81.519	-	81.519	Continuing	Continuing	N/A

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

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Missile Defense Agency **Date:** April 2022

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

Activity	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 2021			FY 2022			FY 2023			FY 2024			FY 2025			FY 2026			FY 2027			
PNT Operations and Maintenance	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - Follow-On	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - Follow-On	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - Follow-On	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - Follow-On	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
Complete Annual Information Assurance user Training for MDA Workforce - Follow-On	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - Follow-On	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance - Follow-On	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency **Date:** April 2022

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

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
PNT Operations and Maintenance	1	2021	4	2027
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - Follow-On	1	2021	4	2027
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - Follow-On	1	2021	4	2027
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - Follow-On	1	2021	4	2027
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - Follow-On	1	2021	4	2027
Complete Annual Information Assurance user Training for MDA Workforce - Follow-On	1	2021	4	2027
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - Follow-On	1	2021	4	2027
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance - Follow-On	1	2021	4	2027

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency										Date: April 2022		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD31 / Modeling & Simulation			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MD31: <i>Modeling & Simulation</i>	429.428	103.029	82.277	72.045	-	72.045	74.020	71.968	73.626	73.910	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2022 to FY 2023 reflects a shift from development of initial EDISS and GTISS capabilities to their employment and ongoing capability improvements.

A. Mission Description and Budget Item Justification

MDA's Modeling and Simulation (M&S) program develops system-level models, frameworks, truth, simulations, and operational representations as missile defense technologies continually advance and the threat changes, and evaluates performance of the Elements, Components, and overall Missile Defense System for verification, validation and accreditation purposes. MDA's M&S program provides a cost effective means to assess and examine Missile Defense performance space beyond what can be physically tested under current test range conditions and within the Agency's fiscal constraints. M&S future concept simulation activities provide the capability to design and develop technologies to hedge against future missile threats. MDA's M&S systems and products provide analysis, decision-making, and planning capabilities for Real-World Operations to inform the National Command Authority, Joint Staff, Military Services, NATO, Combatant Commanders (CCMDs), Operational Test Authority (OTAs), Director of Operational Test & Evaluation (DOT&E), and Allies.

The strategy of MDA's M&S Program is 1) to execute a single, integrated, and synchronized program to manage M&S development and sustainment, 2) to improve System Flight and Ground Test execution and provide digital assessment venue, 3) to leverage MDA test activities to collect data to anchor M&S, and 4) to perform Warfighter training and tactics validation. The strategy also incorporates key elements to address DOT&E assessments; Ensure that future M&S architectures are composable and flexible, and simplify the integration process to conserve resources and improve capabilities; Ensure that future M&S architectures incorporate and require the use of consistent truth representations (phenomenology, lethality, environmental factors, threat simulations, etc.); Improve cross-organizational system engineering processes to optimize requirements generation and ensure the inclusion of all stakeholders; Develop refined M&S accreditation criteria between MDA and the OTA; Enable top-down systems engineering and management of agency-wide M&S federations.

MDA's M&S Program consists of system and product planning, development, integration, and operation; threat model development, verification, and analysis; and integration and deployment of MDA's distributed real-time Hardware-in-the-Loop (HWIL) and digital M&S simulation capabilities. Models and simulations are tailored to the specific needs of the Agency's test events and to match MDS components in their various stages of development, ranging from low-to-medium fidelity analyses supporting concept definitions studies, to high-fidelity models used to support engineering level activities. MDA validates and accredits System-level models and simulations by anchoring them to ground and flight test events, per the Integrated Master Test Plan (IMTP), to enable accurate and comprehensive assessments.

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

	FY 2021	FY 2022	FY 2023
Title: M&S Requirements, Design Support, Scenario Optimization	11.005	9.795	8.865
Articles:	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
---	----------------	----------------	----------------

Description: This activity provides the integrated program lifecycle planning and requirements definition of all MDS M&S models and capabilities to enable assessment of capability deliveries. M&S capability development executes an integrated, synchronized program to manage M&S development in support of MDS development, testing, and assessment. The following actions are required on a continuing basis to accomplish the M&S lifecycle planning and requirements definition mission:

- Maintain traceability between the M&S Systems Requirements Documents and M&S product development
- Produce capability documents and specifications for M&S product development to enable all Digital assessment, System flight and HWIL tests, training events, exercises, wargames, concept evaluation and development engineering
- Support MDA response to export requests for M&S software and technical data to nations or international organizations
- Participate in Technical Interchange Meetings and provide support for bilateral agreements with allies and partners
- Support system engineering capability trades for all MDS capability deliveries
- Provide integrated program lifecycle planning and scheduling of all System-level M&S models and capabilities to enable assessment of capability deliveries for Homeland and Regional Defense
- Execute M&S planning, development, framework and test integration; threat model development, verification, and analysis; and integration and deployment of MDA's distributed real-time Hardware-in-the-Loop (HWIL) and digital M&S simulation capabilities
- Develop/sustain models and simulations tailored to the specific needs of the Agency's test events; match MDS components in their various stages of development or sustainment as required for the test venue

Specific and/or unique accomplishments to each FY are as follows:

FY 2022 Plans:

- SEE ABOVE.

FY 2023 Plans:

- SEE ABOVE.

FY 2022 to FY 2023 Increase/Decrease Statement:

N/A

Title: BMDS Simulations & Tools

Articles:

12.943	11.109	11.381
-	-	-

Description: This activity funds the development and sustainment of digital products and the architecture framework, and delivery/maintenance of infrastructure for Missile Defense performance assessments, Warfighter events, engineering studies/analyses, and International Simulation events. The following actions are required on a continuing basis:
Event Integration/Support Operations:

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Deliver integrated architecture instantiations of the MDS to support Performance Assessments and integration of new capabilities into the Operational Capability Baseline - Integrate, test, and verify the M&S enterprise supporting System-level testing, assessment, exercises, and wargaming, including testing infrastructure - Integrate, test, functionally qualify, and deliver M&S tools and complex test architectures to provide system test capabilities to support MDA IMTP based test events, wargames, and exercises - Maintain simulations for System and Element M&S development laboratories - Conduct integration, testing and system-level verification per the digital System Requirements Document (SRD); operate the testbed to mature the OSF-based digital system simulation - Provide Event Integration Support for non-MDA Missile Defense component and weapon system models for M&S, threat, and Element developmental integration activities - Provide HWIL/M&S benchmarking/integration, documentation and coordination; sustain, integrate and execute ground tests, and Exercises/Wargames - Provide communications emulation (Multicast Tactical Digital Information Link (TADIL-J) (MTJ), Satellite Tactical Digital Information Link (TADIL-J) (STJ), and Link-16) and network analysis support via the Tactical Communications Environment Segment (TCES) for M&S, threat, and Element developmental integration activities - Perform operational planning for planned MDS assessment events - Conduct M&S system integration and verification and conduct developmental integration testing <p>M&S Operations:</p> <ul style="list-style-type: none"> - Provide digital representations of MDS elements/components using MDA's International Simulation (I-SIM) in support of Combatant Command and International Wargames, conceptual planning, visualizations, training/orientation, M&S demonstrations, and the Warfighter's Modification & Fielding Requirements List (MFRL) for exercises and training - Implement I-SIM architecture requirements and emerging capability requirements to adapt to growing distributed event requirements - Sustain the Missile Defense Space Warning Tool (MDST) and related tools to pace fielded Overhead Persistent Infrared (OPIR) Architectures in support of Warfighter training and exercise events, and Element development engineering - Provide software operations/maintenance support to the Extended Air Defense Simulation (EADSIM) code base for use in Warfighter exercises, training venues, and Combatant Command planning tools - Upgrade models and develop new designs or software as required to support System simulations - Provide threat representations (trajectories, radar cross sections, and signatures data) for use in real-world events, simulations, exercises, wargames, and test and evaluation activities across the DoD - Develop products that meet digital and HWIL requirements and allow M&S participation across multiple intended uses <p>Specific and/or unique accomplishments to each FY are as follows:</p>			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs		Project (Number/Name) MD31 / Modeling & Simulation
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023
<p>FY 2022 Plans: - SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>				
<p>Title: M&S Objective Simulation Framework (OSF)</p> <p align="right">Articles:</p>		11.157	12.882	12.510
<p>Description: The following actions are required on a continuing basis to accomplish the OSF mission:</p> <ul style="list-style-type: none"> - Develop and implement OSF upgrades to incorporate advanced tracking, discrimination, engagement and associated upper tier debris mitigation capabilities, as well as other requirements and capabilities to meet MDA's evolving M&S Enterprise needs - Perform testing and integration of Core Truth Model capabilities into the OSF framework - Sustain and enhance framework and products to maintain capabilities to support stakeholders and to keep pace with the IMTP - Develop plans, procedures and documentation for scheduled events including Wargames and Combatant Command Exercises and the Distributed, Focused and Integrated HWIL Events as presented in the IMTP; provide event architecture integration and checkout of Wargames for these same IMTP scheduled events - Provide the integration expertise to meet the assessment requirements (includes the IMTP); support delivery of integrated architectures across all venues using the System test framework to integrate architectures - Develop, maintain, test, and field model representations for use in IMTP events and other MDA M&S stakeholder application areas; deploy hardware and software updates to distributed sites; perform regular maintenance and critical repairs of hardware and software - Maintain the M&S Integration and Development Laboratories for Element M&S; maintain venue for stakeholders to conduct early M&S integration efforts and identification of issues prior to event architecture integration to support system development - Continue maintenance of SSF in the required venues until the transition to OSF in the venues completes - Develop M&S products to keep pace with evolving requirements in all digital and test venues - Prototype, develop and deliver new OSF capabilities to support agency efforts in the Concept Evaluation and Developmental Engineering Intended Uses <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans:</p>		-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs		Project (Number/Name) MD31 / Modeling & Simulation
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023
- SEE ABOVE.				
FY 2023 Plans: - SEE ABOVE.				
FY 2022 to FY 2023 Increase/Decrease Statement: N/A				
Title: M&S Core Truth Modeling		11.207	12.044	12.182
		Articles: -	-	-
<p>Description: The Core Truth Model (CTM) program provides consistent and common Phenomenology, Lethality, Environment, Communications, and Threat models for M&S venues utilized in all digital and Ground Test events and wargaming exercises. The CTM efforts are critical in the assessment of all Missile Defense capability deliveries. The following actions are required on a continuing basis to accomplish the CTM mission:</p> <ul style="list-style-type: none"> - Implement next generation truth representations for signatures and lethality to address advanced MDS capability needs for tracking, discrimination and engagement - Maintain legacy truth representations (e.g., Parametric Endoatmospheric-Exoatmospheric Lethality Simulation (PEELS), Kinetic Intercept Debris Distribution (KIDD) and Optical Signatures Code/Optical Signature Inline Generator (OSC/OPTISIG)) until fully transitioned - Support integration of all applicable CTM functions into the OSF framework - Provide support for scheduled events including training, exercises, Wargames, and the Distributed, Focused and Integrated HWIL Events as presented in the IMTP - Deliver CTM Toolkit for integrated truth representations across the M&S enterprise - Produce and deliver high quality, credible, and cost-effective Threat Data Products (Integrated Threat Packages (IPTs)) - Deliver updated vehicle characteristics during flight utilizing mature production processes - Deliver infrared (IR) Hardbody and BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA) data production essential to future MDS testing - Provide V&V evidence for radio frequency (RF) and IR Signatures to support accreditation decisions - Maintain an Environments Program that will provide consistent environment models for system and element level simulations - Continue development of Truth Interaction which includes IR and RF propagation; this will provide consistent models and truth to system and element level simulations - Generate CTM Sensitivity analysis to identify the sensitivity within system simulation of Core Truth Models and boundary - Develop and maintain CTM design to support system and element level simulations across the entire M&S portfolio <p>Specific and/or unique accomplishments to each FY are as follows:</p>				
FY 2022 Plans:				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
---	---------	---------	---------

<p>- SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>			
---	--	--	--

<p>Title: M&S Improvements</p>	56.717	36.447	27.107
---	--------	--------	--------

<p>Articles:</p> <p>Description: This effort funds MDS Enterprise-wide M&S improvements that will enhance digital and ground test capabilities. Investigate improvements to the M&S program to support flight testing. Planned improvements include an experimental, developmental M&S prototype capability necessary to achieve a System-level integrated, high-fidelity end-to-end digital simulation. The prototype effort designs and develops a digital simulation capability that will provide assessment data, supplemental to Ground- and Flight tests, in areas that those venues cannot address. The End-to-end Digital Integrated System-level Simulation (EDISS) will eventually replace the current stand-alone approach to digital predictive pre-mission analysis. MDA is also implementing Ground Test Re-architecture to address accreditation and assessment limitations, increased Hardware-in-the-Loop (HWIL) complexity and reduced available integration times. The Ground Test Integrated System-level Simulation (GTISS) will make truth data consistent, implement standard framework interfaces, and provide common data formats to correct ground test simulation inadequacies in threat uncertainty as well as debris modeling. Specific and/or unique accomplishments to each FY are as follows:</p>	-	-	-
---	---	---	---

<p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - Continue Software Development of EDISS v2-4: <li style="padding-left: 20px;">-- Continue systems engineering for EDISS v3 -- Complete software development for EDISS v2, including Spiral In-Progress Reviews <li style="padding-left: 20px;">-- Continue integration and testing for EDISS v2 <li style="padding-left: 20px;">-- Perform M&S data production in support of Long Range Discrimination Radar (LRDR) assessment - Deploy Phase 2 of GTISS (Ground Test Integrated System-level Simulation) improvements to the MDA Ground Test Architecture: <li style="padding-left: 20px;">-- Complete requirements development <li style="padding-left: 20px;">-- Continue software development <li style="padding-left: 20px;">-- Provide Threat Data Production improvements <li style="padding-left: 20px;">-- Conduct M&S Integration, Test, and Verification 			
---	--	--	--

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency **Date:** April 2022

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Continue Engineering and Development of GTISS Phase 3: <ul style="list-style-type: none"> -- Continue software development, including in-progress technical reviews -- Integrate and Test GTISS Phase 2 M&S - Perform post-GTISS Phase 3 sustainment planning <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Complete development and delivery of EDISS v3.0, including engineering, integration, and testing - Continue software development of EDISS v4.0: <ul style="list-style-type: none"> -- Continue systems engineering -- Conduct integration and testing -- Perform M&S data production to support MDS Increment builds - Complete GTISS Phase 2 improvements to the MDA Ground Test Architecture: <ul style="list-style-type: none"> -- Complete software development -- Provide Threat Data Production improvements -- Complete M&S integration, test and verification, and checkout -- Deliver Phase 2 Improvements to the MDA Ground Test architecture - Continue engineering and development of GTISS Phase 3: <ul style="list-style-type: none"> -- Continue software development, including in-progress technical reviews -- Conduct, integrate, test and verify, and checkout GTISS Phase 3 M&S <p>FY 2022 to FY 2023 Increase/Decrease Statement: Decrease from FY 2022 to FY 2023 reflects a shift from development of initial EDISS and GTISS capabilities to their employment, and ongoing capability improvements.</p>			
Accomplishments/Planned Programs Subtotals	103.029	82.277	72.045

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u> <u>Base</u>	<u>FY 2023</u> <u>OCO</u>	<u>FY 2023</u> <u>Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603881C: Ballistic Missile	305.081	213.382	190.216	-	190.216	196.279	213.945	224.146	238.269	Continuing	Continuing
<i>Defense Terminal Defense Segment</i>											

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

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

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u> <u>Base</u>	<u>FY 2023</u> <u>OCO</u>	<u>FY 2023</u> <u>Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,195.853	724.028	667.524	-	667.524	870.817	802.617	781.973	765.733	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	861.809	639.549	600.072	-	600.072	658.798	574.014	570.018	580.496	Continuing	Continuing

Remarks

D. Acquisition Strategy

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

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
M&S Requirements, Design Support, Scenario Optimization - FFRDC & UARC	MIPR	Various : CO, AL	9.792	0.909	Nov 2020	0.618	Nov 2021	0.632	Nov 2022	-		0.632	Continuing	Continuing	Continuing
M&S Requirements, Design Support, Scenario Optimization - Prior Yr Requirements & Scenario Design no longer funded in FYDP	Various	Various : AL	13.032	0.000		0.000		0.000		-		0.000	0.000	13.032	0.000
M&S Requirements, Design Support, Scenario Optimization - Requirements & Design - CSS	C/CPFF	TEAMS : CO, AL	34.403	8.962	Nov 2020	9.177	Nov 2021	8.233	Nov 2022	-		8.233	Continuing	Continuing	Continuing
M&S Requirements, Design Support, Scenario Optimization - Requirements & Design - Industry	Various	Various : Various	0.000	1.134	Jun 2021	0.000		0.000		-		0.000	0.000	1.134	0.000
M&S Requirements, Design Support, Scenario Optimization - Science and Technology Council	Various	Various : VA, AL	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	0.000
M&S Requirements, Design Support, Scenario Optimization - Threat Modeling	Various	Various : CO, AL	3.544	0.000		0.000		0.000		-		0.000	0.000	3.544	0.000
BMD Simulations & Tools - Digital Framework Development	C/CPAF	Northrop Grumman : CO	34.671	0.000		0.000		0.000		-		0.000	0.000	34.671	0.000
BMD Simulations & Tools - Digital Simulation Development / Support	MIPR	SMDC : AL	5.819	1.750	Nov 2020	1.506	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
BMDS Simulations & Tools - M&S / Digital Framework Development	C/CPAF	SWDC : CO	8.144	8.659	Nov 2020	9.302	Nov 2021	10.031	Nov 2022	-		10.031	Continuing	Continuing	Continuing
BMDS Simulations & Tools - M&S / Digital Framework Support	Various	MDA : CO, AL	3.427	0.132	Apr 2021	0.000		0.000		-		0.000	0.000	3.559	0.000
BMDS Simulations & Tools - M&S / Digital Framework Support - CSS	C/CPFF	TEAMS : CO	6.494	0.000		0.301	Nov 2021	1.350	Nov 2022	-		1.350	Continuing	Continuing	Continuing
BMDS Simulations & Tools - M&S / Digital Framework Support - Industry	C/CPFF	TBE : AL	1.850	0.000		0.000		0.000		-		0.000	0.000	1.850	0.000
BMDS Simulations & Tools - M&S / Digital Framework Support - OGA	MIPR	CCDC : AL	16.459	0.000		0.000		0.000		-		0.000	0.000	16.459	0.000
BMDS Simulations & Tools - Science & Technology Council	Various	Various : VA, AL	1.000	2.402	Nov 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
M&S Objective Simulation Framework (OSF) - Continuous Integration Requirements Development	Various	Various : CO, AL	1.744	2.034	Nov 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
M&S Objective Simulation Framework (OSF) - M&S HWIL - CSS	C/CPFF	TEAMS / Jacobs : CO, AL	8.334	0.417	Nov 2020	6.874	Nov 2021	6.656	Nov 2022	-		6.656	Continuing	Continuing	Continuing
M&S Objective Simulation Framework (OSF) - M&S HWIL - Industry	C/CPAF	Northrop Grumman : CO	6.540	0.000		0.000		0.000		-		0.000	0.000	6.540	0.000
M&S Objective Simulation Framework (OSF) - M&S HWIL Framework Development and Support	C/CPFF	LOCKHEED MARTIN CORP. : AL, CO	40.975	5.175	Mar 2021	0.000		0.000		-		0.000	0.000	46.150	0.000
M&S Objective Simulation Framework (OSF) - M&S	Various	Various : CO, AL	2.426	3.531	Dec 2020	1.475	Dec 2021	1.721	Dec 2022	-		1.721	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
HWIL Simulations / Models - Various															
M&S Objective Simulation Framework (OSF) - M&S HWIL Simulations / Models Development	MIPR	CCDC : AL	28.911	0.000		4.533	Nov 2021	4.133	Nov 2022	-		4.133	Continuing	Continuing	Continuing
M&S Objective Simulation Framework (OSF) - M&S HWIL Support / GT re-architecture	Various	MDA : AL, CO	8.855	0.000		0.000		0.000		-		0.000	0.000	8.855	0.000
M&S Objective Simulation Framework (OSF) - Science & Technology Council	Various	Various : VA, AL	1.000	0.000		0.000		0.000		-		0.000	0.000	1.000	0.000
M&S Core Truth Modeling - M&S Core Truth Modeling - OGA	MIPR	AFRL : CO	4.100	0.000		0.000		0.000		-		0.000	0.000	4.100	0.000
M&S Core Truth Modeling - Core Truth Modeling - Engineering	C/CPAF	PEOPLETEC, INC. : AL	4.282	0.000		5.876	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
M&S Core Truth Modeling - Core Truth Models Validation	Various	MDA : CO, AL	9.655	1.010	Nov 2020	0.700	Nov 2021	0.700	Nov 2022	-		0.700	Continuing	Continuing	Continuing
M&S Core Truth Modeling - M&S Core Truth Modeling	C/CPAF	DECIBEL RESEARCH, INC : AL	0.000	4.479	Nov 2020	0.000		5.844	Nov 2022	-		5.844	Continuing	Continuing	Continuing
M&S Core Truth Modeling - M&S Core Truth Modeling - CSS	C/CPFF	Peopletec : AL, CO	4.497	0.000		0.000		0.000		-		0.000	0.000	4.497	0.000
M&S Core Truth Modeling - M&S Core Truth Modeling - CSS 2	C/CPFF	TEAMS : AL, CO	1.683	0.000		0.000		0.000		-		0.000	0.000	1.683	0.000
M&S Core Truth Modeling - M&S Core Truth Modeling - Lethality/ Phenomenology Modeling	MIPR	CCDC : AL	34.822	0.000		0.000		0.000		-		0.000	0.000	34.822	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
M&S Core Truth Modeling - M&S Core Truth Modeling Simulation System	C/CPAF	Northrop Grumman : CO	50.706	0.000		0.000		0.000		-		0.000	0.000	50.706	0.000
M&S Core Truth Modeling - M&S Core Truth Modeling Simulation System 2	C/CPAF	SWDC : CO	5.684	5.718	Nov 2020	5.468	Nov 2021	5.638	Nov 2022	-		5.638	Continuing	Continuing	Continuing
M&S Improvements - Enterprise-wide ground test re-architecture improvements	Various	Various : CO, AL	20.869	19.995	Dec 2020	12.145	Dec 2021	12.284	Dec 2022	-		12.284	Continuing	Continuing	Continuing
M&S Improvements - M&S Improvement - Enterprise-wide digital capability development	Various	Various : CO, AL	55.210	36.722	Nov 2020	24.302	Nov 2021	14.823	Nov 2022	-		14.823	Continuing	Continuing	Continuing
Subtotal			429.428	103.029		82.277		72.045		-		72.045	Continuing	Continuing	N/A

Remarks
N/A

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	429.428	103.029	82.277	72.045	-	72.045	Continuing	Continuing	N/A

Remarks
Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.
Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Missile Defense Agency **Date:** April 2022

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

	Significant Event Complete ▲		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 2021			FY 2022			FY 2023			FY 2024			FY 2025			FY 2026			FY 2027			
International Simulation v8.8 - 1Q FY 2021	▲																					
MDST Update - FY 2021	▲																					
Initial GTISS Delivery		▲																				
Release Update to OSF - FY 2021				▲																		
Release Update to OSF - FY 2022					▲																	
International Simulation v8.9 - 1Q FY 2022					▲																	
MDST Update - FY 2022					▲																	
Early Digital Product						△																
GTISS Update (2022)							△															
International Simulation v8.10 - 1Q FY 2023								△														
Release Update to OSF - FY 2023								△														
MDST Update - FY 2023								△														
Deliver EDISS v3.0									△													
Release Update to OSF - FY 2024										△												
International Simulation v8.11 - 1Q FY 2024										△												
GTISS Update (2024)										△												
MDST Update - FY 2024										△												
Deliver EDISS v4.0											△											
Release Update to OSF - FY 2025												△										
International Simulation v8.12 - 1Q FY 2025													△									
MDST Update - FY 2025													△									
Release Update to OSF - FY 2026																				△		
International Simulation v8.13 - 1Q FY 2026																				△		
MDST Update - FY 2026																				△		

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Missile Defense Agency **Date:** April 2022

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

Significant Event Complete ▲	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 2021	FY 2022
					FY 2023	FY 2024
					FY 2025	FY 2026
					FY 2027	
International Simulation v8.14 - 1Q FY 2027						△
MDST Update - FY 2027						△

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD31 / Modeling & Simulation

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
International Simulation v8.8 - 1Q FY 2021	1	2021	1	2021
MDST Update - FY 2021	1	2021	1	2021
Initial GTISS Delivery	2	2021	2	2021
Release Update to OSF - FY 2021	4	2021	4	2021
Release Update to OSF - FY 2022	1	2022	1	2022
International Simulation v8.9 - 1Q FY 2022	1	2022	1	2022
MDST Update - FY 2022	1	2022	1	2022
Early Digital Product	2	2022	2	2022
GTISS Update (2022)	4	2022	4	2022
International Simulation v8.10 - 1Q FY 2023	1	2023	1	2023
Release Update to OSF - FY 2023	1	2023	1	2023
MDST Update - FY 2023	1	2023	1	2023
Deliver EDISS v3.0	3	2023	3	2023
Release Update to OSF - FY 2024	1	2024	1	2024
International Simulation v8.11 - 1Q FY 2024	1	2024	1	2024
GTISS Update (2024)	1	2024	1	2024
MDST Update - FY 2024	1	2024	1	2024
Deliver EDISS v4.0	4	2024	4	2024
Release Update to OSF - FY 2025	1	2025	1	2025
International Simulation v8.12 - 1Q FY 2025	1	2025	1	2025
MDST Update - FY 2025	1	2025	1	2025
Release Update to OSF - FY 2026	1	2026	1	2026
International Simulation v8.13 - 1Q FY 2026	1	2026	1	2026

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency **Date:** April 2022

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

Events	Start		End	
	Quarter	Year	Quarter	Year
MDST Update - FY 2026	1	2026	1	2026
International Simulation v8.14 - 1Q FY 2027	1	2027	1	2027
MDST Update - FY 2027	1	2027	1	2027

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency										Date: April 2022		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MC31 / Engineering Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MC31: <i>Engineering Cyber Operations</i>	54.144	34.252	41.975	24.978	-	24.978	25.209	26.661	27.193	27.745	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2022 to FY 2023 reflects completion of FY 2022 Congressionally-funded cybersecurity engineering improvements, and the transfer of Special Security Office function from MC31, Information Assurance / Cyber Network Defense Accomplishment to MD28, Program Protection Accomplishment.

A. Mission Description and Budget Item Justification

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

This project implements Risk Management Framework (RMF) system engineering principles as specified within DOD 8510.01 to acquire, design, test, implement and field technical solutions throughout the systems architecture to ensure sufficient protections exist from a threat and risk based approach. MDA's goal is to ensure Cybersecurity engineering principles flow into system requirements and design specifications early to provide the most cost benefit and ensure security controls are aligned with the National Institute of Standards and Technology (NIST) 800-53a security controls as applicable to systems categorized as National Security Systems.

This project includes resources to conduct an MDA Insider threat program to identify, deter, and mitigate potential insider threats. This activity is Presidentially and DoD-mandated.

This project also funds MDA Cyber Assistance Teams to assess the security of MDA information on Defense Industrial Base networks.

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

	FY 2021	FY 2022	FY 2023
Title: Information Assurance / Cyber Network Defense	34.252	41.975	24.978
Articles:	-	-	-
Description: This activity includes network defense and Information System Security Manager (ISSM) activities for MDA Engineering. Specific tasks include:			
- Conduct Cybersecurity/information assurance engineering and architecture planning for Engineering information technology systems			
- Plan and test the information assurance controls for Engineering systems			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC31 / Engineering Cyber Operations
--	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Implement RMF system engineering principles to ensure sufficient protections exist from a threat and risk based approach - Conduct Controls Validation Testing of systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies - Conduct annual information assurance reviews to assess compliance in implementing and maintaining information assurance controls - Perform cybersecurity upgrades as needed to MDA Engineering systems to be in compliance with DoD mandates - Continue MDA Insider Threat Mitigation Team efforts - Perform engagements with MDA Defense Industrial Base (DIB) partners to detect and increase understanding of cyber threats <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - Per FY 2022 Defense Appropriations Act, conduct cyber engineering activities, including: <ul style="list-style-type: none"> -- Plan and execute Cyber tabletop events -- Implement MDS Cybersecurity Resilience Strategy -- Expand User Activity Monitoring -- Implement technology protection improvements to enhance cybersecurity, insider threat, and software assurance posture of the MDS <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Execute an effective System-level Supply Chain and Cyber Risk Management (SC2RM) program to prevent unmitigated risks from degrading the performance of components and systems across the supply chain. <p>FY 2022 to FY 2023 Increase/Decrease Statement: Decrease from FY 2022 to FY 2023 reflects completion of FY 2022 cybersecurity engineering improvements, and the transfer of Special Security Office function from MC31, Information Assurance / Cyber Network Defense Accomplishment to MD28, Program Protection Accomplishment.</p>			
Accomplishments/Planned Programs Subtotals	34.252	41.975	24.978

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u> <u>Base</u>	<u>FY 2023</u> <u>OCO</u>	<u>FY 2023</u> <u>Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0305103C: Cyber Security Initiative	1.122	1.142	1.165	-	1.165	1.207	1.236	1.262	1.287	Continuing	Continuing

Remarks

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MC31 / <i>Engineering Cyber Operations</i>
--	--	--

D. Acquisition Strategy

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

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC31 / Engineering Cyber Operations
--	---	---

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-	-	-	-	-	-	-	-	-	-	-	N/A

Remarks
N/A

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Information Assurance / Cyber Network Defense - Cyber Assistance Team Leads	MIPR	MITRE : VA, AL	3.769	2.456	Nov 2020	1.969	Nov 2021	1.600	Nov 2022	-		1.600	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cyber Assistance Teams - Contractor Support	C/CPFF	TEAMS : VA, AL	12.028	8.110	Nov 2020	9.559	Nov 2021	6.366	Nov 2022	-		6.366	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cyber Assistance Teams - Hardware	Various	Various : VA, AL	2.876	1.323	Nov 2020	1.576	Nov 2021	0.500	Nov 2022	-		0.500	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cyber Assistance Teams - Intelligence Reporting	C/CPAF	Deloitte : AL, VA	3.178	1.783	Nov 2020	0.514	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cyber Assistance Teams - Software/Licenses	C/CPAF	Various : AL, VA	2.401	2.819	Nov 2020	0.000		2.700	Nov 2022	-		2.700	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cyber Engineering	C/CPFF	Deloitte : AL, VA	6.198	0.594	Dec 2020	1.071	Dec 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cyber Engineering - CSS	C/CPFF	TEAMS : VA, AL	2.600	2.002	Nov 2020	6.809	Dec 2021	0.275	Dec 2022	-		0.275	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC31 / Engineering Cyber Operations
--	---	---

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Information Assurance / Cyber Network Defense - Cyber Engineering - FFRDC/UARC	MIPR	Various : Various	0.000	2.303	Apr 2021	1.179	Apr 2022	0.000		-		0.000	0.000	3.482	0.000
Information Assurance / Cyber Network Defense - Cyber Engineering - VISUM	MIPR	Various : AL	2.960	2.331	Dec 2020	0.000		1.080	Dec 2022	-		1.080	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cyber Program Protection	C/CPFF	TEAMS : CO, AL, VA	0.000	0.000		1.285	Nov 2021	0.725	Nov 2022	-		0.725	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cyber SW Engineering & Assessment	MIPR	USA CCDC AVIATION AND MISSILE CENTE : AL	0.000	5.210	Feb 2021	2.173	Jun 2022	0.000		-		0.000	0.000	7.383	0.000
Information Assurance / Cyber Network Defense - Cybersecurity - Anti-Tamper	C/CPFF	TBD : AL	0.000	0.000		0.683	Jun 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cybersecurity - Software Risk Assessments	C/TBD	TBD : Various	0.000	0.000		0.537	Jun 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cybersecurity - Systems Engineering	C/CPFF	TBD : Various	0.000	0.000		2.748	Jun 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cybersecurity - User Activity Monitoring	C/CPAF	JACOBS TECHNOLOGY INC. : Various	0.000	0.000		3.200	Jun 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cybersecurity Resiliency Strategy Implementation	C/CPFF	TBD : Various	0.000	0.000		2.457	Jun 2022	0.000		-		0.000	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC31 / Engineering Cyber Operations
--	---	---

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Information Assurance / Cyber Network Defense - IT / CND Support	C/CPFF	TEAMS : CO, AL, VA	6.676	1.057	Nov 2020	1.667	Nov 2021	2.790	Nov 2022	-		2.790	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Insider Threat - Continuous SSO Support	C/CPFF	TEAMS : CO, AL, VA	0.000	0.825	Dec 2020	1.428	Dec 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Insider Threat Mitigation Cell	C/CPFF	TEAMS : CO, AL, VA	3.371	0.825	Dec 2020	1.428	Dec 2021	1.050	Dec 2022	-		1.050	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Insider Threat Mitigation Cell - IT	C/CPAF	Northrop Grumman : CO	3.430	0.612	Dec 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Software Assurance	C/CPFF	TEAMS : CO, AL	4.657	2.002	Nov 2020	1.692	Dec 2021	1.726	Dec 2022	-		1.726	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Supply Chain and Cyber Risk Management (SC2RM)	MIPR	DOD - UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND SUSTAINMENT (OUSD (A&S)) : VA	0.000	0.000		0.000		0.700	Nov 2022	-		0.700	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Supply Chain and Cyber Risk Management (SC2RM) - Analysis	C/CPFF	TBD : AL	0.000	0.000		0.000		2.250	Dec 2022	-		2.250	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Supply Chain and Cyber Risk Management (SC2RM) - Data Analytics / Mission Assurance	C/CPFF	TBD : AL	0.000	0.000		0.000		2.566	Dec 2022	-		2.566	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC31 / Engineering Cyber Operations
--	---	---

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Information Assurance / Cyber Network Defense - Supply Chain and Cyber Risk Management (SC2RM) - FFRDC	FFRDC	THE MITRE CORPORATION : AL	0.000	0.000		0.000		0.650	Nov 2022	-		0.650	Continuing	Continuing	Continuing
Subtotal			54.144	34.252		41.975		24.978		-		24.978	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	54.144	34.252	41.975	24.978	-	24.978	Continuing	Continuing	N/A

Remarks
Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MC31 / <i>Engineering Cyber Operations</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Engineering Cyber Operations	1	2021	4	2027

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency										Date: April 2022		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MD32: <i>Quality, Safety, and Mission Assurance</i>	324.320	29.926	29.527	30.737	-	30.737	31.767	32.494	33.120	33.782	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

Quality, Safety, and Mission Assurance ensures that the Missile Defense System (MDS) and all of its elements are designed, tested and operated in a reliable, safe, and effective manner.

Quality and Mission Assurance: Responsible for ensuring the reliable and effective design, test and operation of the MDS and all of its elements. Develops and ensures implementation of quality and mission assurance requirements. Mitigates quality and mission assurance risks to the lowest practical level. Provides in-plant MDA Assurance Representatives (MARs) at MDA government and contractor facilities to provide quality and mission assurance oversight of contractor manufacturing and integration. Performs Quality and Mission Assurance Assessments to ensure contractual requirements, internal requirements, and industry best practices are implemented at prime contractor and lower tier suppliers. Reviews and approves all new and modified parts, materials and critical processes for MDS elements.

Safety: Responsible for ensuring the safe design, test and operation of the MDS and all of its elements. Develops and ensures implementation of safety requirements. Mitigates safety risks to the lowest practical level. Ensures a safe workplace for all MDA employees and contractors by implementing a Safety program. MDS Safety Officers provide on-site support at the Missile Defense Integration and Operations Center (MDIOC) 24 hours a day, 7 days a week, 365 days a year to ensure operational safety of the MDS.

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

	FY 2021	FY 2022	FY 2023
Title: Quality, Safety & Mission Assurance	29.926	29.527	30.737
Articles:	-	-	-
Description: Quality, Safety, and Mission Assurance ensures that the Missile Defense System and all of its elements are designed, tested and operated in a reliable, safe, and effective manner. Specific and/or unique accomplishments to each FY are as follows:			
FY 2022 Plans: -SEE ABOVE.			
FY 2023 Plans:			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023
-SEE ABOVE.				
FY 2022 to FY 2023 Increase/Decrease Statement: N/A				
Accomplishments/Planned Programs Subtotals		29.926	29.527	30.737
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy The Quality, Safety and Mission Assurance program is a collaboration between subject matter expertise in the Government, Federally Funded Research and Development Centers (FFRDC), University Affiliated Research Centers (UARC), Contract Support Services (CSS), and Industry.				

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance
--	---	---

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Quality, Safety & Mission Assurance - Audits & Quality On-site Support	MIPR	NSWC Corona : AL, CA	30.726	2.152	Nov 2020	3.084	Nov 2021	3.146	Nov 2022	-		3.146	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - In-Plant Quality Support (MARS)	C/CPFF	Various Multi : AL, AK, AZ, CA, CO, FL, HI, NJ, MA, MO, MD, UT	18.138	0.000		0.000		0.000		-		0.000	0.000	18.138	0.000
Quality, Safety & Mission Assurance - Independent Readiness Review Team	C/CPFF	AI Solutions : AL	5.994	0.000		0.000		0.000		-		0.000	0.000	5.994	0.000
Quality, Safety & Mission Assurance - MDS Quality Support	C/CPFF	AI Solutions : AL	12.137	0.000		0.000		0.000		-		0.000	0.000	12.137	0.000
Quality, Safety & Mission Assurance - MDS Safety	C/CPFF	APT, INC : AL	13.116	0.000		0.000		0.000		-		0.000	0.000	13.116	0.000
Quality, Safety & Mission Assurance - MDS Safety Officers	MIPR	CCDC : AL	4.706	0.000		0.000		0.000		-		0.000	0.000	4.706	0.000
Quality, Safety & Mission Assurance - Management and Operations Support	MIPR	CCDC : AL	3.488	0.549	Nov 2020	0.468	Nov 2021	0.776	Nov 2022	-		0.776	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Mission	C/CPFF	APT, INC. : AL	9.083	0.000		0.000		0.000		-		0.000	0.000	9.083	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency												Date: April 2022			
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)					
0400 / 4					PE 0603890C / BMD Enabling Programs					MD32 / Quality, Safety, and Mission Assurance					
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Assurance Subject Matter Experts															
Quality, Safety & Mission Assurance - Operations Support	MIPR	Various Multi : AL, CA	5.859	0.000		0.000		0.000		-		0.000	0.000	5.859	0.000
Quality, Safety & Mission Assurance - Parts, Materials and Processes (PMP) Program	MIPR	Various Multi : AL, CA, DC, IN	19.744	1.225	Nov 2020	1.626	Nov 2021	2.419	Nov 2022	-		2.419	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Parts, Materials and Processes - PMP - Program	C/CPFF	AI Solutions : AL	10.083	0.000		0.000		0.000		-		0.000	0.000	10.083	0.000
Quality, Safety & Mission Assurance - Pedigree & Design Certification - FFRDC	MIPR	Aerospace : AL, CA	32.058	1.767	Nov 2020	2.986	Nov 2021	3.165	Nov 2022	-		3.165	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Quality and Mission Assurance Support	C/CPFF	AI Solutions : AL, AK, AZ, CA, CO, FL, HI, NJ, MA, MO, MD, UT	11.121	7.990	Nov 2020	6.400	Nov 2021	6.321	Nov 2022	-		6.321	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Safety Support	C/CPFF	ARES CORPORATION : AL, VA	3.234	1.315	Jan 2021	0.922	Jan 2022	0.766	Jan 2023	-		0.766	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Technical Support for Next Generation Interceptor (NGI) Program	MIPR	DOD - DEFENSE MICROELECTRONICS ACTIVITY (DMEA) : CA	0.000	0.000		0.165	Jun 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			179.487	14.998		15.651		16.593		-		16.593	Continuing	Continuing	N/A
Remarks															
N/A															

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance
--	---	---

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Subtotal			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Quality, Safety & Mission Assurance - Quality, Safety & Mission Assurance HQ & Core Management (MDA CIV)	Allot	MDA QS : AL, VA, MD, CA, AZ, HI, AK, MA, NJ, FL, AR, UT	111.684	14.078	Oct 2020	13.083	Oct 2021	13.607	Oct 2022	-		13.607	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Quality, Safety & Mission Assurance Operations Support	C/CPFF	Network Mgmt Resources Yorktown : AL and VA	14.277	0.596	Dec 2020	0.392	Nov 2021	0.132	Nov 2022	-		0.132	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Quality, Safety & Mission Assurance Operations Support (Travel/PCS)	Allot	MDA QS : AL, CO, AK, DC, VA	18.872	0.254	Oct 2020	0.401	Oct 2021	0.405	Oct 2022	-		0.405	Continuing	Continuing	Continuing
Subtotal			144.833	14.928		13.876		14.144		-		14.144	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	324.320	29.926	29.527	30.737	-	30.737	Continuing	Continuing	N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency							Date: April 2022			
Appropriation/Budget Activity 0400 / 4			R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs			Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance				
	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract	

Remarks
 Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.
 Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Missile Defense Agency						Date: April 2022													
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs						Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance							
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 2021		FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027	
MD32 Quality, Safety, and Mission Assurance						◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD32 Quality, Safety, and Mission Assurance	1	2021	4	2027

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency										Date: April 2022		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	207.897	27.224	23.102	21.491	-	21.491	21.593	21.219	23.763	24.183	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

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

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)

	FY 2021	FY 2022	FY 2023
Title: Program Wide Support	27.224	23.102	21.491
Articles:	-	-	-
Description: 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			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
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.			
<i>FY 2022 Plans:</i> - SEE ABOVE.			
<i>FY 2023 Plans:</i> - SEE ABOVE.			
<i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> N/A			
Accomplishments/Planned Programs Subtotals	27.224	23.102	21.491

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

N/A

Remarks

D. Acquisition Strategy

N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Facilities and Maintenance	MIPR	Various Multi : AL, CO, CA, VA	27.831	5.023	Dec 2020	0.000		0.063	Nov 2022	-		0.063	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Various	Various : Multi: AL, CA, CO, VA	6.512	0.000		0.000		0.000		-		0.000	0.000	6.512	0.000
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Various	MDA : AK, AL, CA, CO, VA	48.193	16.550	Oct 2020	17.624	Oct 2021	17.849	Oct 2022	-		17.849	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	Various : Multi: AK, AL, CO, CA, HI, MD, VA, NJ, NY, OCONUS	5.442	3.077	Nov 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/Various	Various : Multi: AK, AL, CO, CA, HI, MD, VA	112.565	2.574	Dec 2020	5.427	Dec 2021	3.579	Nov 2022	-		3.579	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations, Sustainment and GPC	C/CPFF	Various Multi : AK, AL, CA, HI, NY, VA	0.000	0.000		0.018	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Facilities and Maintenance SRM	MIPR	Various : Multi: AL, CA, AL, AK	1.752	0.000		0.033	May 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various : Various	5.602	0.000		0.000		0.000		-		0.000	0.000	5.602	0.000
Subtotal			207.897	27.224		23.102		21.491		-		21.491	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	207.897	27.224	23.102	21.491	-	21.491	Continuing	Continuing	N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency	Date: April 2022
---	-------------------------

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

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
--	-------------	---------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

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

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Missile Defense Agency **Date:** April 2022

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

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 ◇														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 12.5%;">FY 2021</th> <th style="width: 12.5%;">FY 2022</th> <th style="width: 12.5%;">FY 2023</th> <th style="width: 12.5%;">FY 2024</th> <th style="width: 12.5%;">FY 2025</th> <th style="width: 12.5%;">FY 2026</th> <th style="width: 12.5%;">FY 2027</th> </tr> </thead> <tbody> <tr> <td>◇</td><td>◇</td><td>◇</td><td>◇</td><td>◇</td><td>◇</td><td>◇</td> </tr> </tbody> </table>					FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	◇	◇	◇	◇	◇	◇	◇
FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027												
◇	◇	◇	◇	◇	◇	◇												
MD40 Program-Wide Support																		

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency **Date:** April 2022

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

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2021	4	2027