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**Department of Defense
Fiscal Year (FY) 2024 Budget Estimates**

March 2023



Missile Defense Agency

Defense-Wide Justification Book Volume 2a of 5

Research, Development, Test & Evaluation, Defense-Wide

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Missile Defense Agency • Budget Estimates FY 2024 • RDT&E Program

Table of Volumes

Defense Advanced Research Projects Agency.....	Volume 1
Missile Defense Agency.....	Volume 2
Office of the Secretary Of Defense.....	Volume 3
Creating Helpful Incentives To Produce Semi-Conductors (CHIPS) for America.....	Volume 3
Chemical and Biological Defense Program.....	Volume 4
Defense Contract Audit Agency.....	Volume 5
Defense Contract Management Agency.....	Volume 5
Defense Counterintelligence and Security Agency.....	Volume 5
Defense Information Systems Agency.....	Volume 5
Defense Logistics Agency.....	Volume 5
Defense Security Cooperation Agency.....	Volume 5
Defense Technical Information Center.....	Volume 5
Defense Threat Reduction Agency.....	Volume 5
DoD Human Resources Activity.....	Volume 5
Operational Test and Evaluation, Defense.....	Volume 5
Space Development Agency.....	Volume 5

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Missile Defense Agency • Budget Estimates FY 2024 • RDT&E Program

The Joint Staff..... Volume 5

United States Cyber Command..... Volume 5

United States Special Operations Command..... Volume 5

Washington Headquarters Services..... Volume 5

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Missile Defense Agency • Budget Estimates FY 2024 • RDT&E Program

Volume 2a Table of Contents

Introduction and Explanation of Contents.....Volume 2a - v

Comptroller Exhibit R-1..... Volume 2a - vii

Program Element Table of Contents (by Budget Activity then Line Item Number).....Volume 2a - xix

Program Element Table of Contents (Alphabetically by Program Element Title).....Volume 2a - xxiii

MDA Overview.....Volume 2a - xxv

MDA Appropriation Summary..... Volume 2a - xlv

Congressional Reporting Requirements..... Volume 2a - xlix

Acronyms..... Volume 2a - li

Exhibit R-2s.....Volume 2a - 1

UNCLASSIFIED

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UNCLASSIFIED

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Introduction & Explanation of Contents

The Department of Defense Fiscal Year (FY) 2024 Budget Estimate Submission RDT&E (Includes Procurement, O&M, and MILCON), Defense-wide Volume 2, Missile Defense Agency (MDA) justification materials consists of two books titled Volume 2a and 2b. Justification documents are provided in the books as listed below.

Volume 2a

- MDA FY 2024 Budget Estimate Overview
- MDA Appropriation Summary
- Acronyms
- RDT&E Exhibits in BA-03, BA-04, and BA-06

Volume 2b

- MDA Operation and Maintenance Exhibit
- MDA MILCON Exhibits
- MDA Procurement Exhibits

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Department of Defense
FY 2024 President's Budget
Exhibit R-1 FY 2024 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2023

<u>Appropriation</u>	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment*	FY 2023 Total Enactment	FY 2024 Request
Research, Development, Test and Evaluation, Defense-Wide	7,266,295	8,292,828		8,292,828	8,720,984
Total Research, Development, Test, & Evaluation	7,266,295	8,292,828		8,292,828	8,720,984

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Department of Defense
FY 2024 President's Budget
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(Dollars in Thousands)

Mar 2023

	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment*	FY 2023 Total Enactment	FY 2024 Request
<u>Summary Recap of Budget Activities</u>					
Advanced Technology Development	90,948	125,060		125,060	39,286
Advanced Component Development & Prototypes	7,043,604	8,142,509		8,142,509	8,653,335
Management Support	131,743	25,259		25,259	28,363
Total Research, Development, Test, & Evaluation	7,266,295	8,292,828		8,292,828	8,720,984
<u>Summary Recap of FYDP Programs</u>					
General Purpose Forces	2,316	2,417		2,417	2,484
Intelligence and Communications	1,118	1,165		1,165	2,760
Research and Development	6,938,146	8,134,030		8,134,030	8,577,894
Administration and Associated Activities	24,102	25,259		25,259	28,363
Space	300,613	129,957		129,957	109,483
Total Research, Development, Test, & Evaluation	7,266,295	8,292,828		8,292,828	8,720,984

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

UNCLASSIFIED

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UNCLASSIFIED

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Missile Defense Agency	7,266,295	8,292,828		8,292,828	8,720,984
Total Research, Development, Test and Evaluation, Defense-Wide	7,266,295	8,292,828		8,292,828	8,720,984

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Defense-Wide
FY 2024 President's Budget
Exhibit R-1 FY 2024 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2023

Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment*	FY 2023 Total Enactment
35	0603176C	Advanced Concepts and Performance Assessment	03	U	39,678	39,737		39,737
36	0603180C	Advanced Research	03	U	51,270	85,323		85,323
		Advanced Technology Development			90,948	125,060		125,060
77	0603881C	Ballistic Missile Defense Terminal Defense Segment	04	U	209,004	195,216		195,216
78	0603882C	Ballistic Missile Defense Midcourse Defense Segment	04	U	707,632	689,018		689,018
80	0603884C	Ballistic Missile Defense Sensors	04	U	250,123	230,502		230,502
81	0603890C	BMD Enabling Programs	04	U	616,800	588,847		588,847
82	0603891C	Special Programs - MDA	04	U	443,503	316,977		316,977
83	0603892C	AEGIS BMD	04	U	628,014	595,572		595,572
84	0603896C	Ballistic Missile Defense Command and Control, Battle Management and Communicati	04	U	556,914	589,374		589,374
85	0603898C	Ballistic Missile Defense Joint Warfighter Support	04	U	50,261	50,269		50,269
86	0603904C	Missile Defense Integration & Operations Center (MDIOC)	04	U	44,188	49,367		49,367
87	0603906C	Regarding Trench	04	U	11,952	12,146		12,146
88	0603907C	Sea Based X-Band Radar (SBX)	04	U	147,241	164,668		164,668
89	0603913C	Israeli Cooperative Programs	04	U	300,000	300,000		300,000
90	0603914C	Ballistic Missile Defense Test	04	U	388,956	366,824		366,824
91	0603915C	Ballistic Missile Defense Targets	04	U	560,445	579,075		579,075
95	0604102C	Guam Defense Development	04	U	110,611	393,201		393,201
96	0604115C	Technology Maturation Initiatives	04	U	39,200	16,000		16,000

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

UNCLASSIFIED

Defense-Wide
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Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Se c	FY 2024 Request
35	0603176C	Advanced Concepts and Performance Assessment	03	U	17,825
36	0603180C	Advanced Research	03	U	21,461
	Advanced Technology Development				39,286
77	0603881C	Ballistic Missile Defense Terminal Defense Segment	04	U	220,311
78	0603882C	Ballistic Missile Defense Midcourse Defense Segment	04	U	903,633
80	0603884C	Ballistic Missile Defense Sensors	04	U	239,159
81	0603890C	BMD Enabling Programs	04	U	597,720
82	0603891C	Special Programs - MDA	04	U	552,888
83	0603892C	AEGIS BMD	04	U	693,727
84	0603896C	Ballistic Missile Defense Command and Control, Battle Management and Communicati	04	U	554,201
85	0603898C	Ballistic Missile Defense Joint Warfighter Support	04	U	48,248
86	0603904C	Missile Defense Integration & Operations Center (MDIOC)	04	U	50,549
87	0603906C	Regarding Trench	04	U	12,564
88	0603907C	Sea Based X-Band Radar (SBX)	04	U	177,868
89	0603913C	Israeli Cooperative Programs	04	U	300,000
90	0603914C	Ballistic Missile Defense Test	04	U	360,455
91	0603915C	Ballistic Missile Defense Targets	04	U	570,258
95	0604102C	Guam Defense Development	04	U	397,578
96	0604115C	Technology Maturation Initiatives	04	U	

UNCLASSIFIED

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Appropriation: 0400D Research, Development, Test and Evaluation, Defense-Wide

Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment*	FY 2023 Total Enactment
98	0604181C	Hypersonic Defense	04	U	281,886	517,977		517,977
107	0604672C	Homeland Defense Radar - Hawaii (HDR-H)	04	U	75,000			
111	0604873C	Long Range Discrimination Radar (LRDR)	04	U	129,552	75,120		75,120
112	0604874C	Improved Homeland Defense Interceptors	04	U	863,364	1,833,357		1,833,357
113	0604876C	Ballistic Missile Defense Terminal Defense Segment Test	04	U	32,697	69,762		69,762
114	0604878C	Aegis BMD Test	04	U	111,206	175,619		175,619
115	0604879C	Ballistic Missile Defense Sensor Test	04	U	77,428	88,326		88,326
116	0604880C	Land-Based SM-3 (LBSM3)	04	U	42,156	27,678		27,678
117	0604887C	Ballistic Missile Defense Midcourse Segment Test	04	U	61,424	84,075		84,075
118	0202057C	Safety Program Management	04	U	2,316	2,417		2,417
123	0305103C	Cyber Security Initiative	04	U	1,118	1,165		1,165
128	1206893C	Space Tracking & Surveillance System	04	U	14,907			
129	1206895C	Ballistic Missile Defense System Space Programs	04	U	285,706	129,957		129,957
		Advanced Component Development & Prototypes			7,043,604	8,142,509		8,142,509
165	0605502C	Small Business Innovation Research - MDA	06	U	107,641			
201	0901598C	Management HQ - MDA	06	U	24,102	25,259		25,259
		Management Support			131,743	25,259		25,259
Total Research, Development, Test and Evaluation, Defense-Wide					7,266,295	8,292,828		8,292,828

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UNCLASSIFIED

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107	0604672C	Homeland Defense Radar - Hawaii (HDR-H)	04	U	
111	0604873C	Long Range Discrimination Radar (LRDR)	04	U	103,517
112	0604874C	Improved Homeland Defense Interceptors	04	U	2,130,838
113	0604876C	Ballistic Missile Defense Terminal Defense Segment Test	04	U	47,577
114	0604878C	Aegis BMD Test	04	U	193,484
115	0604879C	Ballistic Missile Defense Sensor Test	04	U	111,049
116	0604880C	Land-Based SM-3 (LBSM3)	04	U	22,163
117	0604887C	Ballistic Missile Defense Midcourse Segment Test	04	U	41,824
118	0202057C	Safety Program Management	04	U	2,484
123	0305103C	Cyber Security Initiative	04	U	2,760
128	1206893C	Space Tracking & Surveillance System	04	U	
129	1206895C	Ballistic Missile Defense System Space Programs	04	U	109,483
	Advanced Component Development & Prototypes				8,653,335
165	0605502C	Small Business Innovation Research - MDA	06	U	
201	0901598C	Management HQ - MDA	06	U	28,363
	Management Support				28,363
Total Research, Development, Test and Evaluation, Defense-Wide					8,720,984

UNCLASSIFIED

Missile Defense Agency
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89	0603913C	Israeli Cooperative Programs	04	U	300,000	300,000		300,000
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165	0605502C	Small Business Innovation Research - MDA	06	U	
201	0901598C	Management HQ - MDA	06	U	28,363
		Management Support			28,363
		Total Missile Defense Agency			8,720,984

UNCLASSIFIED

Missile Defense Agency • Budget Estimates FY 2024 • RDT&E Program

Program Element Table of Contents (by Budget Activity then Line Item Number)

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
35	03	0603176C	Advanced Concepts and Performance Assessment.....	Volume 2a - 1
36	03	0603180C	Advanced Research.....	Volume 2a - 9

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
77	04	0603881C	Ballistic Missile Defense Terminal Defense Segment.....	Volume 2a - 17
78	04	0603882C	Ballistic Missile Defense Midcourse Defense Segment.....	Volume 2a - 51
80	04	0603884C	Ballistic Missile Defense Sensors.....	Volume 2a - 105
81	04	0603890C	BMD Enabling Programs.....	Volume 2a - 149
82	04	0603891C	Special Programs - MDA.....	Volume 2a - 265
83	04	0603892C	AEGIS BMD.....	Volume 2a - 267
84	04	0603896C	Ballistic Missile Defense Command and Control, Battle Management & Communication.....	Volume 2a - 327

UNCLASSIFIED

UNCLASSIFIED

Missile Defense Agency • Budget Estimates FY 2024 • RDT&E Program

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
85	04	0603898C	Ballistic Missile Defense Joint Warfighter Support.....	Volume 2a - 385
86	04	0603904C	Missile Defense Integration and Operations Center (MDIOC).....	Volume 2a - 425
87	04	0603906C	Regarding Trench.....	Volume 2a - 455
88	04	0603907C	Sea Based X-Band Radar (SBX).....	Volume 2a - 457
89	04	0603913C	Israeli Cooperative Programs.....	Volume 2a - 475
90	04	0603914C	Ballistic Missile Defense Test.....	Volume 2a - 489
91	04	0603915C	Ballistic Missile Defense Targets.....	Volume 2a - 535
95	04	0604102C	Guam Defense Development.....	Volume 2a - 577
96	04	0604115C	Technology Maturation Initiatives.....	Volume 2a - 603
98	04	0604181C	Hypersonic Defense.....	Volume 2a - 613
107	04	0604672C	Homeland Defense Radar-Hawaii.....	Volume 2a - 645
111	04	0604873C	Long Range Discrimination Radar (LRDR).....	Volume 2a - 653
112	04	0604874C	Improved Homeland Defense Interceptors.....	Volume 2a - 671
113	04	0604876C	Ballistic Missile Defense Terminal Defense Segment Test.....	Volume 2a - 691
114	04	0604878C	Aegis BMD Test.....	Volume 2a - 709
115	04	0604879C	Ballistic Missile Defense Sensor Test.....	Volume 2a - 735
116	04	0604880C	Land Based SM-3 (LBSM3).....	Volume 2a - 753
117	04	0604887C	Ballistic Missile Defense Midcourse Defense Segment Test.....	Volume 2a - 777

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Missile Defense Agency • Budget Estimates FY 2024 • RDT&E Program

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
118	04	0202057C	Safety Program Management.....	Volume 2a - 801
123	04	0305103C	Cyber Security Initiative.....	Volume 2a - 807
128	04	1206893C	Space Tracking and Surveillance System.....	Volume 2a - 813
129	04	1206895C	Ballistic Missile Defense System Space Programs.....	Volume 2a - 833

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line #	Budget Activity	Program Element Number	Program Element Title	Page
165	06	0605502C	Small Business Innovation Research - MDA.....	Volume 2a - 867
201	06	0901598C	Management HQ - MDA.....	Volume 2a - 871

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Missile Defense Agency • Budget Estimates FY 2024 • RDT&E Program

Program Element Table of Contents (Alphabetically by Program Element Title)

Program Element Title	Program Element Number	Line #	BA	Page
AEGIS BMD	0603892C	83	04.....	Volume 2a - 267
Advanced Concepts and Performance Assessment	0603176C	35	03.....	Volume 2a - 1
Advanced Research	0603180C	36	03.....	Volume 2a - 9
Aegis BMD Test	0604878C	114	04.....	Volume 2a - 709
BMD Enabling Programs	0603890C	81	04.....	Volume 2a - 149
Ballistic Missile Defense Command and Control, Battle Management & Communication	0603896C	84	04.....	Volume 2a - 327
Ballistic Missile Defense Joint Warfighter Support	0603898C	85	04.....	Volume 2a - 385
Ballistic Missile Defense Midcourse Defense Segment	0603882C	78	04.....	Volume 2a - 51
Ballistic Missile Defense Midcourse Defense Segment Test	0604887C	117	04.....	Volume 2a - 777
Ballistic Missile Defense Sensor Test	0604879C	115	04.....	Volume 2a - 735
Ballistic Missile Defense Sensors	0603884C	80	04.....	Volume 2a - 105
Ballistic Missile Defense System Space Programs	1206895C	129	04.....	Volume 2a - 833
Ballistic Missile Defense Targets	0603915C	91	04.....	Volume 2a - 535
Ballistic Missile Defense Terminal Defense Segment	0603881C	77	04.....	Volume 2a - 17
Ballistic Missile Defense Terminal Defense Segment Test	0604876C	113	04.....	Volume 2a - 691
Ballistic Missile Defense Test	0603914C	90	04.....	Volume 2a - 489

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Missile Defense Agency • Budget Estimates FY 2024 • RDT&E Program

Program Element Title	Program Element Number	Line #	BA	Page
Cyber Security Initiative	0305103C	123	04.....	Volume 2a - 807
Guam Defense Development	0604102C	95	04.....	Volume 2a - 577
Homeland Defense Radar-Hawaii	0604672C	107	04.....	Volume 2a - 645
Hypersonic Defense	0604181C	98	04.....	Volume 2a - 613
Improved Homeland Defense Interceptors	0604874C	112	04.....	Volume 2a - 671
Israeli Cooperative Programs	0603913C	89	04.....	Volume 2a - 475
Land Based SM-3 (LBSM3)	0604880C	116	04.....	Volume 2a - 753
Long Range Discrimination Radar (LRDR)	0604873C	111	04.....	Volume 2a - 653
Management HQ - MDA	0901598C	201	06.....	Volume 2a - 871
Missile Defense Integration and Operations Center (MDIOC)	0603904C	86	04.....	Volume 2a - 425
Regarding Trench	0603906C	87	04.....	Volume 2a - 455
Safety Program Management	0202057C	118	04.....	Volume 2a - 801
Sea Based X-Band Radar (SBX)	0603907C	88	04.....	Volume 2a - 457
Small Business Innovation Research - MDA	0605502C	165	06.....	Volume 2a - 867
Space Tracking and Surveillance System	1206893C	128	04.....	Volume 2a - 813
Special Programs - MDA	0603891C	82	04.....	Volume 2a - 265
Technology Maturation Initiatives	0604115C	96	04.....	Volume 2a - 603

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**Missile Defense Agency
Fiscal Year 2024
Budget Estimates**

OVERVIEW



Approved for Public Release

MDA Overview 23-C-0339

Volume 2a 23-C-0341

Volume 2b 23-C-0340

Mission

The Missile Defense Agency (MDA) mission is to develop and deploy a layered integrated missile defense system to defend the United States, its deployed forces, allies, and friends from missile attacks in all phases of flight. The MDA designs, develops, delivers capabilities through the Services to meet Combatant Command joint requirements, and sustains advanced missile defense systems as part of the fully integrated and layered missile defense system.

MDA's budget request for Fiscal Year (FY) 2024 is \$10.9 billion. The FY 2024 budget will continue the development, rigorous testing and fielding of reliable, increasingly capable, advanced missile defenses. The Agency's priorities for missile defense are:

- 1) Operations and Readiness,
- 2) Production, Fielding, and Deployment, and
- 3) Technology, Development, and Test

MDA will continue to collaborate closely with Combatant Commanders (CCMDs) and the Services to support current and future needs for missile defense capabilities. MDA and these key stakeholders are leveraging the existing all-domain missile defense system to develop integrated architectures and capabilities to counter the evolving missile threat from ballistic, hypersonic and cruise missiles. This budget request maintains operational missile defense capacity and capabilities for existing homeland and regional defense forces; increases interceptor inventory and maturation of defensive technologies; and improves existing sensors and the Command and Control, Battle Management and Communications (C2BMC) system.

In accordance with the National Defense Strategy, the Missile Defense Review, and the Defense Planning Guidance, MDA's budget includes funding for improving homeland ballistic missile defense architectures to protect against intercontinental ballistic missile (ICBM) threats from North Korea and potentially Iran. This budget also continues investment in regional missile defense capabilities to defend forward deployed forces in partnership with friends and allies.

In the regional context, United States (U.S.) missile defense policy promotes the development and deployment of missile defense capabilities to counter the full range of regional missile threats (e.g., advanced ballistic, hypersonic, and cruise missiles) from any nation of origin, to include advanced regional missile threats from the People’s Republic of China and Russia. In response to increasing threats in the Indo-Pacific region, MDA is supporting efforts to improve the Warfighter's capability to defend Guam against regional ballistic, and cruise missiles. FY 2024 funding will support activities to continue development and deployment of an effective defensive architecture solution.

MDA continues to make significant progress in cybersecurity by incorporating threat-informed requirements for cyber resiliency and survivability into system specifications and then implementing rigorous evaluation-based testing and assessments early in the development to find and fix problems before releasing systems for integrated testing. MDA is building cybersecurity into next-generation software processes by leveraging proven secure software development, security, and operations, and establishing continuous integration. MDA established a Defensive Cyberspace Operations organization, which uses certified cyber teams to evaluate capabilities to enhance our cybersecurity posture.

Missile Threat

Missile threats continue to increase, growing more numerous and complex. Adversary missile systems are becoming more mobile, survivable, reliable, and accurate while also achieving longer ranges. Hypersonic glide vehicles delivered by missile boosters are an emerging threat that pose new challenges to missile defense systems. Adversary missile pre-launch survivability is likely to increase as potential adversaries strengthen their denial and deception measures and increasingly base missiles on mobile platforms. Increasing technical and operational countermeasures continue to challenge defensive systems in missiles. New missile systems feature multiple independently targetable reentry vehicles and maneuverable reentry vehicles, along with decoys and other countermeasures. Ballistic and maneuvering missile threats continue to increase with the advancement and proliferation of missile technology.

As demonstrated recently by Russia in Ukraine and attacks on both the Kingdom of Saudi Arabia and the United Arab Emirates, missiles continue to be a primary tool for adversaries in times of conflict. Russia and China are developing advanced cruise missiles that can be launched from air, maritime, and land-based platforms. Maneuvering missiles, such as hypersonic glide vehicles, provide a challenge to existing defensive systems because they can travel on unpredictable flight paths at low altitudes making them difficult to track using standard terrestrial radar systems. Consequently, the continued investment in development of long range and resilient sensor technologies and capabilities, to include those that could support a space sensor network is essential for tracking and engaging advanced missile threats. North Korea is developing long-range ballistic missile systems that can reach the United States and its allies in the Indo-Pacific region. It has also tested shorter range missiles that maneuver within the atmosphere. Iran continues to develop more sophisticated missiles with improved accuracy, range, and lethality, and it is fielding an array of increasingly accurate short- and medium-range ballistic missile systems capable of threatening deployed U.S. forces, allies, and partners in the Middle East. It has combined ballistic or cruise missiles and unmanned aerial vehicles in complex attacks.

Major Program Element Highlights

The following discussion summarizes the highlights of major Program Elements (PE) in order of the Missile Defense System battle sequence: Detect, Control, and Engage.

First, missile defense system sensors (radars and satellites) detect the launch of threat missiles and track them in flight, maintaining birth to death custody of the threats. Based on these tracks, C2BMC tasks the sensors to collect threat data with fire control accuracy to support the appropriate weapon systems in engagement of the threats. The weapon systems develop fire control solutions enabling their interceptors to engage and negate the threats. MDA's C2BMC is the all-domain backbone that enables missile defense system engagements.

Note: The following discussion does not necessarily examine all funding or activities included within each Program Element (PE).

I. Detect and Control

MDA delivers, maintains, and upgrades C2BMC capability across 19 time zones with hardened networks supporting U.S. Northern Command (USNORTHCOM), U.S. Indo-Pacific Command (USINDOPACOM), U.S. European Command (USEUCOM), U.S. Central Command (USCENTCOM), U.S. Space Command (USSPACECOM) and Missile Defense Radars for missile defense and space domain awareness mission support. The C2BMC System operates in a Joint, multi-domain environment connected to land, air, sea, space sensors and shooters, and provides continuous, real-time Missile Defense Command and Control, and Battle Management operations. The budget request includes:

- **C2BMC (PE 0603896C).** MDA is requesting \$554.2 million in FY 2024 for C2BMC. C2BMC provides the capability for persistent acquisition, tracking, cueing, discrimination, and distribution of fire-control quality data to the Aegis Weapon System, Ground Based Midcourse Defense (GMD), Terminal High Altitude Area Defense (THAAD), Patriot, Space C2 and coalition partners to support homeland and regional defense. MDA's C2BMC capabilities support Warfighter needs across the globe by providing the Combatant Commander with management and user nodes, the Ballistic Missile Defense (BMD) planner, situational awareness tools, and battle management capability. These tools support global missile defense situational awareness, coalition operations, weapons release authority for homeland defense, and control of and tasking to a variety of missile defense system radars. C2BMC operators and maintainers deploy to some of the world's most threatening regions and continue to provide around-the-clock support to local commanders.
 - In FY 2024, MDA will sustain the fielded C2BMC capability (Spiral 8.2-3 initially and transition to Spiral 8.2-5) in USNORTHCOM, USINDOPACOM, USEUCOM, USCENTCOM, USSTRATCOM, and USSPACECOM Areas of Responsibilities, which includes the following capabilities: Mobile Sensor Phase 1 and BMDS Overhead Persistent Infrared Architecture (BOA) 6.1 track data to the missile defense system (BOA 6.1 initially and transition to BOA 7.0); support for Space Domain Awareness (SDA) with Hardened Army Navy/Transportable Radar Surveillance (AN/TPY-2) radars; Aegis Engage-on-Remote, which can provide a seven-fold increase in defended area coverage when compared to individual

weapon system organic capability; and Protected Anti-Scintillation Anti-Jam Net-Centric support for continued communications between sites and CCMDs.

- MDA continues to field Spiral 8.2-5, which integrates the Long Range Discrimination Radar (LRDR) and BOA 7.0 into the missile defense system for support of homeland defense. This spiral provides initial situational awareness and tracking capability for hypersonic threats based primarily on BOA 7.0 data; significantly expands Homeland Defense against North Korea and potentially Iranian ballistic missiles for USNORTHCOM and capabilities for USSPACECOM with LRDR; provides additional SDA coverage via the Aegis SPY-1 radar; integrates the U.S. Army's IAMD Battle Command System into the missile defense system; integrates on-orbit Space-based Kill Assessment sensors providing initial hit assessment capability for homeland defense; and develops initial missile defense system track for homeland defense.
 - MDA continues to improve the missile defense system capability to address advancing threats worldwide by investing in the development, integration, and testing of advanced algorithms to improve track and discrimination capabilities and enhance the use of space-based sensor data, through BOA.
 - MDA will continue to update the missile defense system architecture to increase the cybersecurity posture by assessing the risk of C2BMC architecture against possible attack. C2BMC capabilities will be involved in multi-agency cyber-focused tests and assessments planned in FY 2024 to identify and correct cyber vulnerabilities.
 - Finally, as part of the C2BMC budget request, MDA is requesting \$38.5 million in FY 2024 for the Defense of Guam. Funding provides improved BMDS communication network fiber and satellite communication paths to Guam for improved resilient mission communications and continues the development of improved overhead tracking and reporting of advanced threats
- **Sea-Based X-Band (SBX) Radar (PE 0603907C).** MDA is requesting \$177.9 million in FY 2024 for the SBX. SBX is an advanced sea-mobile radar that provides precision midcourse tracking and discrimination capabilities. The SBX participates in flight tests to demonstrate discrimination and debris mitigation improvements, as well as operations for homeland defense. The

budget request includes funds to continue extended deployments to conduct operations for defense of the homeland. MDA plans an average of 335 days at sea for FY 2024. The budget request also continues fabrication of a replacement radome for the SBX. The new radome will be installed in FY 2025.

- **Long Range Discrimination Radar (LRDR) (PE 0604873C).** MDA is requesting \$103.5 million in FY 2024 for the LRDR, which will provide persistent long-range midcourse discrimination, precision tracking and hit assessment to support the GMD capability against long-range missile threats from the Pacific theater. LRDR's improved discrimination capability in the missile defense system architecture increases the defensive capacity of the homeland defense interceptor inventory by enabling conservation of Ground Based Interceptor. LRDR includes threat discrimination improvements to enhance missile defense system effectiveness against the evolving threat. LRDR also supports other mission areas, including Space Domain Awareness and Space Object Identification. Initial fielding of the LRDR was completed in FY 2022. Further, addition of the LRDR to the Operational Capability Baseline is planned for FY 2024 leading to the completion of the transition and transfer process of LRDR to the U.S.Space Force in the FY 2024 timeframe. MDA's request includes funding for software Independent Verification and Validation, Modeling and Simulation (M&S) efforts, and development of software for tracking and discrimination improvements and refined space intelligence data.
- **Radar Program Maintenance and Sustainment** supports both homeland and regional defense missions. MDA is requesting \$227.8 million in FY 2024 to sustain AN/TPY-2 radars, provide related support to the U.S. Space Force's Cobra Dane, and Upgraded Early Warning Radars (UEWRs). The Services and CCMDs, with logistical support from MDA, operate AN/TPY-2 (Forward Based Mode) radars in Japan (two radars), Israel, Turkey, and USCENTCOM. MDA continues to support the AN/TPY-2 radar (Terminal Mode) as part of seven THAAD batteries both home-based and in the USINDOPACOM area of responsibility.

- **Radar Procurement.** MDA is requesting \$29.1 million to procure initial Digital Receiver/Exciter kits to upgrade from the current analog Receiver/Exciter technology to a modern digital capability, increasing reliability and AN/TPY-2 secure servers. Additionally, MDA will procure spares availability for the AN/TPY-2 radar fleet.
- **Sensors (*PE 0603884C*).** MDA is requesting \$239.1 million in FY 2024 to provide software updates for the AN/TPY-2, COBRA DANE, SBX, and UEWR radars to counter evolving threats, develop M&S, and to develop future radar capabilities through system engineering, software development, and testing. MDA's investment in a robust and highly capable sensor architecture will support missile defense system weapon systems by providing highly accurate midcourse tracking, discrimination and battle damage assessment for homeland missile defense. This request includes funding for the development of advanced discrimination algorithms for the AN/TPY-2 and SBX radars to improve the missile defense system ability to identify lethal and non-lethal objects for advancing threats.
- **Sensors Test (*PE 0604879C*).** MDA is requesting \$111.0 million in FY 2024 for Sensors testing. This includes planning, analysis and execution of missile defense system flight test events, including pre- and post-test efforts such as Digital and Hardware-in-the-Loop (HWIL) System Pre-Mission Tests and System Post-Flight Reconstruction. Sensor tests also provide planning, analysis and execution in accordance with the ground test Concept of Operations for missile defense system-level ground tests identified in the Integrated Master Test Plan (IMTP), as well as support to HWIL infrastructure. As part of the overall Sensors Test budget request, MDA is requesting \$17.5 million in FY 2024 for the Defense of Guam.
- **Space Program (*PE 1206895C*).** MDA is requesting \$109.5 million in FY 2024 for Missile Defense Space Programs. This request funds the Hypersonic and Ballistic Tracking Space Sensor (HBTSS) development. HBTSS was initiated in 2018 to address the requirement to detect and track hypersonic threats and ballistic missiles. Following launch in late FY23, HBTSS on-orbit demonstration and testing will occur in FY24 to characterize and validate the HBTSS performance. HBTSS will then transition to execute daily satellite operations, participate in MDA and Other Government Agency flight testing, and develop and implement ground system and space vehicle software updates. MDA is collaborating with the U.S. Space Force to deploy

HBTSS as an element within the larger Overhead Persistent Infrared Enterprise Architecture. This request also funds the Spacebased Kill Assessment (SKA) project, which uses a network of fast-rate infrared sensors hosted on commercial satellites to deliver a hit and kill assessment capability for homeland defense. SKA sensors on orbit today have participated successfully in a variety of MDA flight tests and engineering activities. FY 2024 will continue SKA on-orbit operations by experimenting and participating in missile defense system ground and flight tests and providing situational awareness hit assessment to USNORTHCOM during declared periods of heightened activity. Space Applications for Missile Defense will continue efforts previously funded through the Space Tracking and Surveillance System program to provide strategic planning, program integration, contracting, acquisition, engineering, financial management, internal reviews and audits, and program assessments for development and acquisition of missile defense space applications.

II. Engage

MDA remains committed to developing, delivering, sustaining, and improving the nation's missile defenses. The FY 2024 budget request continues to resource and improve U.S. homeland missile defenses designed to counter ballistic missile threats from North Korea and potentially Iran. In addition, the FY 2024 budget request continues to fund and build integrated missile defenses that are interoperable with systems deployed by international partners to protect our deployed forces, allies and international partners against regional ballistic, cruise, and hypersonic missile threats.

The **GMD system** currently defends the U.S. against long-range ballistic missile threats from North Korea and potentially Iran. Initially fielded in the early 2000s, the GMD system is undergoing a service life extension and will be improved with the addition of the Next Generation Interceptor starting no later than 2028. The budget request includes:

- **GMD (PE 0603882C).** MDA is requesting \$903.6 million in FY 2024 for GMD. The GMD element of the missile defense system provides USNORTHCOM with a continuously available (24 hours a day, 7 days a week, 365 days a year) capability to defend the homeland against limited ICBM attacks during the midcourse phase of flight. The GMD capability consists of the

Ground Based Interceptor, GMD Fire Control system (GFC), GMD Communication Network (GCN), In-Flight Interceptor Communications System Data Terminals (IDTs) and ground Launch Support Systems (LSS). MDA continues to upgrade and replace ground system infrastructure and fire control/kill vehicle software to improve the reliability, capability, and cybersecurity resiliency of the GMD weapon system. MDA will complete developing, testing and fielding the Ground System 8 software build that provides a selectable 2/3 stage employment capability for Ground Based Interceptors, improves discrimination, integrates LRDR with GFC, improves the system cybersecurity posture, and supports GCN and IDT modernization. In addition to Ground System 8 software, MDA will develop Ground Weapon Systems (GWS) 10A and 10B. GWS 10A will integrate into the weapon system the missile defense system track and the ability to plan and coordinate engagements with the Next Generation Interceptor. GWS 10B will include software re-architecture to support accelerated processing and expanded capacity and Phased Array (PA) IDTs to support increased two-way data transmissions with interceptors while in flight. GWS 10B will also provide cyber resiliency by creating a single common platform to improve cyber detection and response capabilities addressing the additional emerging threats, and provide discrimination improvements. MDA will complete the Service Life Extension Program on four Ground Based Interceptors integrated with new Configuration 2 boosters which will ensure a more reliable system is provided back to the USNORTHCOM Warfighter. MDA will continue integration of a new LSS into the Fort Greely, Alaska Missile Fields and GMD Ground Systems with modernized Silo Interface Vault equipment in the existing silos to increase silo capacity, compatibility and reliability. The budget request continues funding for PA IDT Software Development, PA IDT Antenna Development, and a Test PA IDT Asset. With the addition of the Next Generation Interceptor, the existing interceptor fleet service life will be extended beyond 2030. MDA will continue the Service Life Extension Program to support the existing Ground Based Interceptor fleet.

- **Improved Homeland Defense Interceptors (PE 0604874C).** MDA is requesting \$2.1 billion in FY 2024 for the Next Generation Interceptor. On March 24, 2021, the Department of Defense awarded two contracts in support of the Next Generation Interceptor program. Retaining a competitive environment throughout the design and production development

activities has already proven to be a key catalyst in support of the Department's ability to field a system capable of addressing the expanding threat no later than 2028 while receiving competitive production pricing. MDA has implemented lessons learned using the valuable technical information developed under previous technology and development programs including the Multi-Object Kill Vehicle and the Redesigned Kill Vehicle programs to positively influence the Next Generation Interceptor designs. The Next Generation Interceptor development will provide a more capable, robust, All-Up-Round solution to meet the emerging threat. The Next Generation Interceptor features a multiple kill vehicle payload, improves system survivability, and provides increased performance against projected threats from North Korea and potentially Iran. The budget request will continue to fund design, development, prototyping, integration and relevant environmental testing to mature the booster, payload, sensor(s), and design-specific critical technologies and technology elements to reduce technical risk.

- **Ground-Based Midcourse Defense Test (PE 0604887C).** MDA is requesting \$41.8 million in FY 2024 for the GMD test program, which supports the IMTP. Flight test mission FTG-12 will demonstrate Missile Defense System Increment 6B Homeland Defense functionality upgrades with a GMD intercept flight test in the expanded battlespace using the 2-/3-Stage Selectable capability in a Ground Based Interceptor to engage a threat representative Intermediate-Range Ballistic Missile (IRBM). Although no flight tests will be executed for the Next Generation Interceptor until the 2027 timeframe, continued ground testing and cyber testing are essential to support this critical missile defense system capability.
- **GMD Maintenance and Sustainment.** MDA is requesting \$174.8 million in FY 2024 for the Operation and Maintenance (O&M) of the GMD weapon system. In addition to operation, maintenance and sustainment of the GMD weapon system and operational and support facilities at Fort Greely, Alaska; Vandenberg Space Force Base (SFB), California; Fort Drum, New York; Schriever SFB, Colorado; and Eareckson Air Station, Alaska, this request includes Warfighter training, wargames, and exercises to maintain readiness. Finally, this request includes funding to repair and maintain the administrative, storage and supply facilities at Fort Greely, Alaska and Vandenberg SFB, California. These buildings were constructed in the mid-1950s

with a planned useful life of 50 years and require significant repairs to avoid an adverse impact on the homeland defense mission.

Aegis Weapon System and Standard Missile. Aegis missile defense program capitalizes on and evolves the existing U.S. Navy Aegis Weapon System and Standard Missile variants. Aegis provides a forward-deployable, mobile capability to detect and track ballistic missiles of all ranges, and has the ability to destroy short-range ballistic missiles (SRBMs) and medium-range ballistic missiles (MRBMs) in both the midcourse and terminal phases of flight and intermediate-range ballistic missiles in the midcourse phase of flight. The FY 2024 budget request supports continued advancement of the Aegis Weapon System to counter growing and more complex threats, including improvements in system and missile reliability as well as increases in Aegis engagement capacity and lethality. MDA continues to support the U.S. voluntary national contribution to the North Atlantic Treaty Organization (NATO) ballistic missile defense. Aegis Ashore in Romania is operational, and we plan to complete construction on Aegis Ashore Poland in 2023. Both sites are designed to launch the SM-3 Block IB and Block IIA missiles.

- **Aegis (PE 0603892C).** MDA requests \$693.7 million in FY 2024 for Aegis Missile Defense. MDA continues to provide additional software capability development to upgrade IAMD performance in Baseline 9.2 (BMD 5.1) and Baseline 10 (BMD 6.0). BMD 5.1 will continue radar sensitivity improvements with AEGIS Combat System Digital Receive Upgrade technology maturation and prototyping that will further improve AN/SPY-1 sensitivity, tracking performance, and resource utilization, which increases capability and performance against longer range and more sophisticated threats. MDA also continues software development for the IAMD Baseline 10 (BMD 6.0). BMD 6.0 will continue development and integration of missile defense capability with the Air and Missile Defense Radar, also known as the AN/SPY-6, for enhanced engagement capability and increased raid capacity. Additionally, MDA continues upgrading the SM-3 Block IB hardware and software to leverage the capability of the SM-3 Block IIA. As part of the overall Aegis budget request, MDA is requesting \$80.4 million in FY 2024 for

the Defense of Guam. This funds the development of the Aegis Guam System Software configuration for land based Defense of Guam capabilities integrated with dispersed AN/TPY-6 Radar and multiple launchers.

- **Land Based SM-3 (PE 0604880C).** MDA is requesting \$22.2 million in FY 2024 to modernize, develop, and test Aegis Ashore capability improvements at the Aegis Ashore Missile Defense Test Complex in Hawaii for implementation at operational sites. The funding also supports operations at the site in Romania and transition activities for the Poland site. In FY 2024 MDA will continue High-Altitude Electromagnetic Pulse Combat System hardening in Romania. Land Based SM-3 provides an Aegis Ashore exo-atmospheric defense against short to intermediate-range ballistic missile threats in the later stages of flight.
- **Aegis Testing (PE 0604878C).** MDA is requesting \$193.5 million in FY 2024 for the Aegis test program, which supports the IMTP. The Aegis Flight Test Program supports comprehensive testing of Aegis components and demonstrates their interoperability with the missile defense system. Using accredited M&S, the ground test program provides the objective evidence required to transition the capability to the Operational Capability Baseline. As part of the overall Aegis Test budget request, MDA is requesting \$42.1 million in FY 2024 for the Defense of Guam.
- **Aegis Procurement.** MDA requests a total of \$837.8 million in FY 2024 for Aegis procurement. This includes \$807.6 million for procuring Aegis SM-3 missiles. MDA will procure 27 Aegis SM-3 Block IB missiles and 12 Aegis SM-3 Block IIA missiles in FY 2024. The procurement budget also requests \$27.8 million for Aegis Weapon Systems consisting of Aegis shipset equipment, software, and installation materials. The budget requests \$2.4 million for completing combat system installation and combat structure adaptation at the Aegis Ashore site in Poland. Appropriately configured Aegis ships and the Aegis Ashore sites in Romania and Poland can launch both missile variants.
- **Aegis Maintenance and Sustainment.** MDA is requesting \$72.2 million in FY 2024 in O&M funding. The Aegis program will perform missile recertification, repair efforts, and Ordnance Assessment/Surveillance. This funding also supports sustainment of BMD Computer Programs, Ship Equipment, and Aegis Ashore, as well as Fleet integration support.

- **Defense of Guam (PE 0604102C).** MDA requests \$397.6 million in FY 2024 to continue the development of an integrated missile defense system for Guam defense against a range of missile threats. This Program supports the Pacific Deterrence Initiative. The final Defense of Guam architecture design includes integration efforts between MDA, U.S. Army, and U.S. Navy systems. The budget request includes critical requirements to support the architecture. These efforts include the development of the AN/TPY-6 radar to provide persistent long-range midcourse discrimination, precision tracking and hit assessment to support the Defense of Guam capability against long-range missile threats in the Pacific theater. AN/TPY-6 provides a 360 degree integrated sensor coverage, enables remote operations, and supports In-Flight Interceptor via the Aegis Guam System. The request also includes the Aegis Guam System development to interface with the dispersed the AN/TPY-6 radar, dispersed MK41 Vertical Launcher System (VLS) and the integration and control for a new U.S. Army missile launcher. The program continues Aegis Guam System architecture development and systems engineering activities necessary to provide an integrated air and missile defense system on Guam against ballistic and air-breathing missile threats.
- **Defense of Guam Procurement.** MDA requests \$169.6 million in FY 2024 to provide Aegis Guam System and vertical launch equipment in order to support the final delivery schedule. Note: MDA is requesting a total of \$801.7 million for the Defense of Guam in FY 2024 (excludes program-wide support funding), to include \$632.1 million in RDT&E (multiple PE's), and \$169.6 million in Procurement.

THAAD weapon system. THAAD is a globally-transportable, ground-based missile defense system that is highly effective against short-, medium-, and limited intermediate-range ballistic missile threats inside and outside the atmosphere in the terminal phase of flight. THAAD provides unique, cost-effective, and rapidly deployable capability to the CCMDs. MDA currently supports forward-deployment of two batteries stationed in the USINDOPACOM area of responsibility. Specific to THAAD, MDA's request includes:

- **Terminal Defense (PE 0603881C).** MDA is requesting \$220.3 million for THAAD development efforts in FY 2024. MDA will continue the development and integration of multiple, independent THAAD system upgrades to improve reliability,

availability, readiness, and defense planning, in order to improve the capability to engage SRBM, MRBM, and limited IRBM threats. These development efforts will enhance THAAD's capability against global operational threats.

- **Terminal Defense Testing (PE 0604876C).** MDA requests \$47.6 million for Terminal Defense Testing in FY 2024, consistent with the IMTP. This includes flight and ground testing, test operations and infrastructure, wargames, and exercises.
- **THAAD Procurement.** MDA is requesting \$216.8 million for THAAD procurement in FY 2024 for 11 THAAD Interceptors, Interceptor obsolescence mitigation efforts, the Stockpile Reliability Program, and THAAD Battery Ground Component obsolescence modifications. Procurement of 11 THAAD Interceptors in FY 2024 supports the minimum quantity required to maintain continuous production at the Prime and supplier level.
- **THAAD Operations and Maintenance.** MDA is requesting \$89.3 million for O&M in FY 2024 to support the maintenance and upkeep of all missile defense system-unique items of the fielded U.S. THAAD batteries and for all THAAD training devices. In FY 2024, MDA will provide support to seven THAAD batteries, including the two forward-based batteries stationed in the USINDOPACOM area of responsibility, and is prepared to support the U.S. Army in any future deployments around the world.

III. Technology

With a mission focused on warfighting outcomes, MDA is investing in innovative and disruptive technologies to provide leap-ahead capabilities to address the emergence of new and more advanced threats. This budget request will continue development of technology improvements for the current missile defense system, along with breakthrough technologies for integration into future missile defense architectures. These efforts include:

- **Hypersonic Defense (PE 0604181C).** MDA requests \$209.0 million for FY 2024 for Hypersonic Defense to competitively develop and deliver a glide phase intercept defensive capability with Industry. The glide phase intercept capability will provide a new layered defense architecture to counter hypersonic threats and will increase the effectiveness of existing terminal defense

systems. This effort will develop a new interceptor as well as modify the existing Aegis Weapon System to defeat hypersonic threats in the glide phase. The program will focus on early risk reduction of critical technology threats.

- **Advanced Research Program (PE 0603180C).** MDA is requesting \$21.5 million in FY 2024, to conduct innovative, state of the art, research and development with small and large businesses, universities, national laboratories, and allied nations to create and enable future missile defense capabilities aligned to the MDA Science and Technology Strategy. Key investments include development, characterization, and risk mitigation testing of advanced materials, seeker windows, power controls and propulsion systems, and maturation of kill vehicle and satellite communication and processing technology for engagement management of the missile defense system. The program assesses and demonstrates the utility of emerging component technologies, then facilitates transition of the technologies into the missile defense system to address identified Agency gaps and Warfighter needs. The program also manages the selection process and administers the Missile Defense Small Business Innovation Research program.
- **Advanced Concepts & Performance Assessment (PE 0603176C).** MDA is requesting \$17.8 million in FY 2024 to centralize advanced technology concept modeling, simulation, and performance analysis. Advanced Concepts & Performance Assessments focus on the exploration of novel and emerging capabilities that may have the potential to enhance missile defense. The request will fund independent government assessments of industry sensor, directed energy, and weapon system technology concepts and mature related tracking, discrimination, and sensor fusion algorithms. Assessment activities include development of Hypersonic Defense, Artificial Intelligence and Machine Learning Initiatives, and Left-through-Right Integration key technology areas. The innovative structured concept definition and assessment methodology enables MDA to validate focus areas, verify contractor technology solutions, and evaluate promising concepts for use in future missile defense architectures. This program element supports the monitoring and tracking of cybersecurity mitigations, as well as the exploration of cyber effects on emerging technology.

IV. Missile Defense Testing

MDA plans and executes a fully integrated test program that synchronizes the system under test with the Warfighters trained to operate the system under varying wartime conditions against current and emerging threats. The IMTP documents our rigorous test program (flight, ground, cyber, wargames, and exercises). MDA structures its test program to improve confidence in the missile defense capabilities under development and to ensure the capabilities transferred to the Warfighter are operationally effective, suitable, and survivable.

- **Missile Defense System Testing (PE 0603914C).** MDA is requesting \$360.5 million in FY 2024. MDA conducts regular intercept flight tests. These tests provide data to anchor models and simulations that can then be used to verify performance and confirm the technological progress of the Missile defense system against missile threats. MDA also conducts regular, rigorous non-intercept tests, including sensor characterization flight tests, ground tests, cybersecurity and resiliency tests, wargames, and exercises. Developed in collaboration with stakeholders, the IMTP identifies and incorporates all testing requirements into a comprehensive, highly integrated, cost-effective series of flight tests, ground tests, cybersecurity tests, exercises, and wargames. IMTP Stakeholders, who are also signatories, include: Director, Operational Test & Evaluation; Director, Developmental Test, Evaluation and Assessments; Commander, Joint Functional Component Command for Integrated Missile Defense representing CCMDs; Commander, Army Test and Evaluation Command; Commander, Air Force Operational Test and Evaluation Center; Commander, Operational Test and Evaluation Force; and Commander, Joint Interoperability Test Command. For flight testing, the Agency incorporates nine operational realism criteria. For system-level ground testing, all tests culminate in operational testing with Warfighters on console and independent operational assessments by the missile defense system Operational Test Agency Team. This ensures that missile defense system capabilities are credibly demonstrated and validated prior to delivery to the Warfighter. The IMTP supports MDA's programming strategy and test priorities. This test program captures:
 - Sea-Based Terminal Increment 3 simulated Aegis BL9.2.4/SM-6 engagement against a hypersonic glide vehicle.

- Sea-Based Weapon System Midcourse performing a target scene data collect of an medium range ballistic missile (MRBM) with countermeasures
- 3-Event Flight Test Campaign for THAAD to assess TH 4.0 Global software capability to detect, track, and discriminate SRBMs with countermeasures (CMs). Each event will feature a target with different CMs; no interceptors will be launched. Also, the event will demonstrate interoperability with Patriot by exchanging Link-16 messages (supports Increment 6C/7).
- Annual interoperability and integration flight testing with Patriot.
- Increased flight test integration and interoperability testing with Allies, including support for Pacific Dragon Live-Fire Exercise
- Refinements on test planning for system-level ground testing.
- Updates on planning for cybersecurity testing.
- As part of the overall MDA Test budget request, MDA is requesting \$15.0 million in FY 2024 for the Defense of Guam. Funding will provide for the initial flight and ground testing of the Defense of Guam architecture to achieve developmental and operational test objectives to deliver data for capability assessments and fielding. Funding directly supports the first flight test for the Aegis Guam Weapon System tracking of a Medium Range Ballistic Missile target.
- **Missile Defense System Targets (PE 0603915C).** MDA is requesting \$570.3 million in FY 2024 to develop, produce, and launch an economical and reliable inventory of targets based on engineering assessments of threat intelligence data. This funding enables the test, verification, and validation of the performance of the missile defense system against threats in support of the IMTP, and includes funding for the continued development of Advanced Targets, and development and production of more reliable and capable MRBM Target motors with enhanced maneuverability and range. As part of the overall MDA Targets budget request, MDA is requesting \$53.0 million in FY 2024 to provide targets required for testing related to the

Defense of Guam. This funding will provide non-recurring engineering and hardware for the development of the Hypersonic Test Vehicle (HTV) flight test re-entry vehicle.

- **Ground Test Facility Infrastructure (GTFI).** MDA is requesting \$148.0 million of Military Construction (Major MILCON) to support the relocation of critical missile defense system assets from off-post lease space to the Von Braun Complex.

V. Israeli Programs

MDA is requesting \$500 million for **Israeli programs** in FY 2024. This funding level remains consistent with the Memorandum of Understanding between the United States and Israel that spans FY 2019 – FY 2028. This budget continues MDA's longstanding support of U.S.-Israeli Cooperative Programs, to include the co-development and co-production of the David's Sling Weapon System and the Arrow Weapon System. The Department continues to support co-production efforts for the Iron Dome Defensive System program to provide critical defense against short-range rockets and missiles, mortars, and artillery shells, as well as new capabilities against Unmanned Aerial Vehicles.

Summary

MDA requests \$10.9 billion in FY 2024 for missile defense development efforts to continue building Warfighter confidence by focusing on readiness and sustainment, increasing capability and capacity of fielded homeland and regional defense systems, and increasing the speed of delivery of advanced technology to counter the advanced missile threat.

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Appropriation Summary Based on OFFLINE PB24 FY24-FY25 R12 - 02/25/2023												
Fiscal Year Amount Based on Business Rule CPS Version:				OFFLINE PB24 FY24	OFFLINE PB24 FY24	OFFLINE PB24 FY24	OFFLINE PB24 FY24	OFFLINE PB24 FY24	OFFLINE PB24 FY24	OFFLINE PB24 FY24	OFFLINE PB24 FY24	
				FY28 R12	FY28 R12	FY28 R12	FY28 R12	FY28 R12	FY28 R12	FY28 R12	FY28 R12	
Line Number	Program Element	Budget Project	Program	Budget Activity	FY22 Actual	FY23	FY24	FY25	FY26	FY27	FY28	FY24-28
O&M												
11A	0208866C		O&M	NA	510,065	541,787	564,078	584,198	610,543	584,379	661,984	3,005,182
		MD08	Ground Base Midcourse	NA	156,623	185,564	174,789	178,467	161,429	132,557	206,311	853,553
		MD07	THAAD	NA	85,557	86,945	89,297	91,789	93,995	96,024	97,945	469,050
		MD09	AEGIS	NA	77,170	69,071	72,224	85,696	99,209	96,412	93,554	447,095
		MD11	BMDs Radars Program	NA	190,715	200,207	227,768	228,246	255,910	259,386	264,174	1,235,484
			Budget Activity 00 Total	NA	510,065	541,787	564,078	584,198	610,543	584,379	661,984	3,005,182
			O&M Total	NA	510,065	541,787	564,078	584,198	610,543	584,379	661,984	3,005,182
Procurement												
XX	0208866C		PROCUREMENT	01	2,531,253	1,636,347	1,283,685	1,639,514	1,947,103	2,196,844	2,816,448	9,883,594
		MD07	THAAD	01	380,722	239,994	216,782	447,080	475,739	643,513	656,384	2,439,498
		MD80	Advanced Procurement NGI	01	0	0	0	0	200,717	260,482	882,013	1,343,212
		MD08	Ground Based Midcourse	01	0	11,300	0	30,971	36,243	34,833	18,978	121,025
		MD09	AEGIS BMD	01	352,114	402,235	374,756	372,639	528,486	537,124	550,011	2,363,016
		MD11	BMDs Sensors	01	2,738	4,606	29,108	35,257	13,382	27,475	10,200	115,422
		MD14	SM-3 Block IIA	01	488,022	669,975	432,824	507,705	464,094	457,932	467,091	2,329,646
		MD26	Arrow 3 Upper Tier System	01	62,000	80,000	80,000	50,000	50,000	50,000	50,000	280,000
		MD34	Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon	01	30,000	40,000	40,000	40,000	40,000	40,000	40,000	200,000
		MD73	Aegis Ashore Phase III	01	27,866	30,056	2,390	976	0	0	0	3,366
		MD83	Iron Dome	01	1,108,000	80,000	80,000	110,000	110,000	110,000	110,000	520,000
		MD90	Aegis BMD Hardware and Software	01	79,791	78,181	27,825	44,886	28,442	35,485	31,771	168,409
39	50000000000000		Guam Defense Acquisition	01	80,000	26,514	169,627	85,693	5,274	0	0	260,594
		MD65	Defense of Guam Procurement	01	80,000	26,514	169,627	85,693	5,274	0	0	260,594
			Budget Activity 01 Total	01	2,611,253	1,662,861	1,453,312	1,725,207	1,952,377	2,196,844	2,816,448	10,144,188
			Procurement Total	01	2,611,253	1,662,861	1,453,312	1,725,207	1,952,377	2,196,844	2,816,448	10,144,188
RDT&E												
35	0603176C		Advanced Concepts and Performance Assessment	03	39,678	39,737	17,825	18,301	18,752	19,134	19,596	93,608
		MD71	Advanced Concepts and Performance Assessments	03	22,001	31,446	13,386	13,732	14,007	14,291	14,579	69,995
		MD40	Program-Wide Support	03	607	608	634	659	758	776	869	3,696
		MC71	Cyber Operations	03	17,070	7,683	3,805	3,910	3,987	4,067	4,148	19,917
36	0603180C		Advanced Research	03	51,270	85,323	21,461	22,024	22,571	23,031	23,591	112,678
		MD25	Advanced Technology Development	03	50,439	84,523	20,698	21,231	21,659	22,097	22,545	108,230
		MD40	Program-Wide Support	03	831	800	763	793	912	934	1,046	4,448
			Budget Activity 03 Total	03	90,948	125,060	39,286	40,325	41,323	42,165	43,187	206,286
118	0202057C		Safety Program Management	04	2,316	2,417	2,484	2,542	2,591	2,642	2,689	12,948
		MDSH	Safety Program Management	04	2,316	2,417	2,484	2,542	2,591	2,642	2,689	12,948
123	0305103C		Cyber Security Initiative	04	1,118	1,165	2,760	2,826	2,893	2,963	3,025	14,467
		MDCS	Cyber Security Initiative	04	1,118	1,165	2,760	2,826	2,893	2,963	3,025	14,467
77	0603881C		Ballistic Missile Defense Terminal Defense Segment	04	209,004	195,216	220,311	239,705	334,977	384,992	292,629	1,472,614
		MD07	THAAD	04	182,790	176,543	199,440	217,374	308,369	355,866	265,247	1,346,296
		MC07	Cyber Operations	04	11,816	10,555	12,140	12,782	12,135	12,553	13,437	63,047
		MD06	Patriot Advanced Capability-3 (PAC-3)	04	844	1,211	900	922	938	952	967	4,679
		MD40	Program-Wide Support	04	13,554	6,907	7,831	8,627	13,535	15,621	12,978	58,592
78	0603882C		Ballistic Missile Defense Midcourse Defense Segment	04	707,632	689,018	903,633	852,567	906,634	930,538	875,198	4,468,570
		MD08	Ground Based Midcourse	04	650,359	637,955	841,566	799,484	847,444	870,177	813,229	4,171,900
		MC08	Cyber Operations	04	24,858	27,795	29,035	21,891	22,374	22,831	22,962	119,093
		MD40	Program-Wide Support	04	32,415	23,268	33,032	31,192	36,816	37,530	39,007	177,577
80	0603884C		Ballistic Missile Defense Sensors	04	250,123	230,502	239,159	212,191	233,877	242,623	251,226	1,179,076
		MD11	BMDs Radars	04	220,888	200,770	209,931	184,133	202,733	212,070	218,960	1,027,827
		MC11	Cyber Operations	04	19,504	21,339	20,727	20,421	21,694	20,709	21,124	104,675
		MD40	Program-Wide Support	04	9,731	8,393	8,501	7,637	9,450	9,844	11,142	46,574
81	0603890C		BMD Enabling Programs	04	616,800	588,847	597,720	620,823	639,398	648,954	650,432	3,157,327

Missile Defense Agency
PB 2024 Missile Defense Agency
FY 2024- FY 2028 Appropriation Summary
R-1 Exhibit
(\$ Thousands)

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				FY28 R12	FY28 R12	FY28 R12	FY28 R12	FY28 R12	FY28 R12	FY28 R12	FY28 R12	
Line Number	Program Element	Budget Project	Program	Budget Activity	FY22 Actual	FY23	FY24	FY25	FY26	FY27	FY28	FY24-28
		MD24	System Engineering & Integration	04	158,835	175,122	171,129	178,396	182,240	185,922	176,333	894,020
		MD21	Homeland Cruise Missile Defense Architecture	04	13,263	10,852	783	0	0	0	0	783
		MT23	Enabling - Test	04	41,520	44,245	44,248	48,151	48,040	48,972	49,952	239,363
		MD28	Intelligence & Security	04	39,102	42,036	56,654	59,093	59,964	60,933	61,932	298,576
		MD30	BMD Information Management Systems	04	88,568	87,822	91,609	92,439	96,898	95,602	97,511	474,059
		MC30	Cyber Operations	04	100,256	80,519	89,111	91,655	95,931	97,852	99,809	474,358
		MD31	Modeling & Simulation	04	78,389	71,045	65,702	67,222	67,717	69,247	70,614	340,502
		MC31	Engineering Cyber Operations	04	40,913	24,978	25,854	29,379	30,010	30,663	31,319	147,225
		MD32	Quality, Safety, and Mission Assurance	04	32,852	30,737	31,383	32,145	32,763	33,432	34,115	163,838
		MD40	Program-Wide Support	04	23,102	21,491	21,247	22,343	25,835	26,331	28,847	124,603
82	0603891C		Special Programs - MDA	04	443,503	316,977	552,888	496,365	451,156	411,698	381,138	2,293,245
		MD27	Special Programs	04	443,503	316,977	552,888	496,365	451,156	411,698	381,138	2,293,245
83	0603892C		AEGIS BMD	04	628,014	595,572	693,727	639,678	706,974	699,611	733,909	3,473,899
		MD09	Aegis BMD	04	336,371	344,810	446,480	354,561	332,425	328,853	368,774	1,831,093
		MM09	Aegis BMD SM-3 Development	04	119,798	85,633	42,323	78,754	151,302	129,335	117,755	519,469
		MC09	Cyber Operations	04	3,661	4,431	5,972	6,236	6,263	6,430	6,602	31,503
		MX09	Aegis BMD Development Support	04	136,589	138,909	173,105	177,638	188,903	207,636	212,658	959,940
		MD40	Program-Wide Support	04	31,595	21,789	25,847	22,489	28,081	27,357	28,120	131,894
84	0603896C		Ballistic Missile Defense Command and Control, Battle Management	04	556,914	589,374	554,201	574,275	585,966	598,896	582,156	2,895,494
		MD01	Command & Control, Battle Management, Communications (C2BMC)	04	335,045	368,950	336,417	349,481	353,905	357,466	334,643	1,731,912
		MC01	Cyber Operations	04	12,068	8,504	8,261	8,512	8,672	8,847	9,025	43,317
		MT01	C2BMC Test	04	65,341	58,616	51,849	57,628	59,930	64,674	65,120	299,201
		MX01	Command & Control, Battle Management, Communications (C2BMC)	04	122,194	131,903	138,665	139,480	142,259	145,342	148,249	713,995
		MD40	Program-Wide Support	04	22,266	21,401	19,009	19,174	21,200	22,567	25,119	107,069
85	0603898C		Ballistic Missile Defense Joint Warfighter Support	04	50,261	50,269	48,248	49,164	50,445	51,542	52,859	252,258
		MD03	Joint Warfighter Support	04	18,042	17,537	19,606	20,067	20,432	20,817	21,209	102,131
		MT03	Joint Warfighter Support Test	04	30,109	30,748	26,763	27,160	27,804	28,460	29,129	139,316
		MC03	Cyber Operations	04	151	159	164	168	171	174	177	854
		MD40	Program-Wide Support	04	1,959	1,825	1,715	1,769	2,038	2,091	2,344	9,957
86	0603904C		Missile Defense Integration and Operations Center (MDIOC)	04	44,188	49,367	50,549	56,624	58,020	59,193	60,615	285,001
		MD22	Missile Defense Integration and Operations Center (MDIOC)	04	41,467	46,926	48,081	53,897	54,973	56,074	57,196	270,221
		MC22	Cyber Operations	04	608	648	671	689	703	717	731	3,511
		MD40	Program-Wide Support	04	2,113	1,793	1,797	2,038	2,344	2,402	2,688	11,269
87	0603906C		Regarding Trench	04	11,952	12,146	12,564	12,902	13,155	13,418	13,686	65,725
		MD35	Regarding Trench	04	11,952	12,146	12,564	12,902	13,155	13,418	13,686	65,725
88	0603907C		Sea Based X-Band Radar (SBX)	04	147,241	164,668	177,868	196,952	176,633	162,632	162,578	876,663
		MX46	Sea Based X-Band Radar Development Support	04	141,567	158,689	171,486	189,655	169,275	155,807	155,204	841,427
		MD40	Program-Wide Support	04	5,674	5,979	6,382	7,297	7,358	6,825	7,374	35,236
89	0603913C		Israeli Cooperative Programs	04	300,000	300,000	300,000	300,000	300,000	300,000	300,000	1,500,000
		MD26	Arrow Weapon System	04	173,000	173,000	173,000	173,000	173,000	173,000	173,000	865,000
		MD34	Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon	04	127,000	127,000	127,000	127,000	127,000	127,000	127,000	635,000
90	0603914C		Ballistic Missile Defense Test	04	388,956	366,824	360,455	430,281	436,921	465,074	375,256	2,067,987
		MT04	BMDs Test Program	04	363,703	345,263	339,182	405,601	410,503	436,642	346,059	1,937,987
		MC04	Cyber Operations	04	8,025	8,205	8,333	8,552	8,719	8,893	9,071	43,568
		MD40	Program Wide Support	04	17,228	13,356	12,940	16,128	17,699	19,539	20,126	86,432
91	0603915C		Ballistic Missile Defense Targets	04	560,445	579,075	570,258	583,747	642,329	664,683	510,063	2,971,080
		MC05	Cyber Operations	04	1,551	1,512	1,752	1,794	1,830	1,867	1,903	9,146
		MT05	BMDs Targets Program	04	539,734	556,930	548,058	560,191	613,279	634,554	483,276	2,839,358
		MD40	Program Wide Support	04	19,160	20,633	20,448	21,762	27,220	28,262	24,884	122,576
95	0604102C		Guam Defense Development	04	110,611	393,201	397,578	291,301	272,227	238,348	232,115	1,431,569
		MD65	Defense of Guam Development	04	110,611	378,751	385,132	279,223	261,590	228,114	221,653	1,375,712
		MD40	Program-Wide Support	04	0	14,450	12,446	12,078	10,637	10,234	10,462	55,857

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FY 2024- FY 2028 Appropriation Summary
R-1 Exhibit
(\$ Thousands)**

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				FY28 R12	FY28 R12	FY28 R12	FY28 R12	FY28 R12	FY28 R12	FY28 R12	FY28 R12	
Line Number	Program Element	Budget Project	Program	Budget Activity	FY22 Actual	FY23	FY24	FY25	FY26	FY27	FY28	FY24-28
96	0604115C		Technology Maturation Initiatives	04	39,200	16,000	0	0	0	0	0	0
		MD98	Directed Energy Demonstrator Development	04	39,200	16,000	0	0	0	0	0	0
98	0604181C		Hypersonic Defense	04	281,886	517,977	208,997	218,939	294,326	366,951	644,996	1,734,209
		MD29	Hypersonic Defense	04	273,106	510,117	190,555	195,627	282,434	352,062	616,390	1,637,068
		MD40	Program Wide Support	04	8,780	7,860	18,442	23,312	11,892	14,889	28,606	97,141
107	0604672C		Homeland Defense Radar-Hawaii	04	75,000	0	0	0	0	0	0	0
		MD41	Homeland Defense Radar-Hawaii (HDR-H)	04	75,000	0	0	0	0	0	0	0
111	0604873C		Long Range Discrimination Radar (LRDR)	04	129,552	75,120	103,517	100,114	68,815	69,219	65,521	407,186
		MD96	Long Range Discrim Radar (LRDR)	04	124,409	72,392	99,837	96,511	66,034	66,410	62,615	391,407
		MD40	Program Wide Support	04	5,143	2,728	3,680	3,603	2,781	2,809	2,906	15,779
112	0604874C		Improved Homeland Defense Interceptors	04	863,364	1,833,357	2,130,838	2,110,409	1,444,842	1,239,966	1,015,682	7,941,737
		MD80	Next Generation Interceptor Development (NGI)	04	833,409	1,766,786	2,056,063	2,034,457	1,386,460	1,189,654	970,633	7,637,267
		MD40	Program Wide Support	04	29,955	66,571	74,775	75,952	58,382	50,312	45,049	304,470
113	0604876C		Ballistic Missile Defense Terminal Defense Segment Test	04	32,697	69,762	47,577	65,379	66,735	94,369	34,228	308,288
		MT07	THAAD Test	04	30,174	67,229	45,886	63,026	64,039	90,540	32,710	296,201
		MD40	Program Wide Support	04	2,523	2,533	1,691	2,353	2,696	3,829	1,518	12,087
114	0604878C		Aegis BMD Test	04	111,206	175,619	193,484	135,473	183,024	203,676	135,080	850,737
		MT09	AEGIS BMD Test	04	106,147	168,982	186,236	130,522	173,947	195,356	129,089	815,150
		MD40	Program Wide Support	04	5,059	6,637	7,248	4,951	9,077	8,320	5,991	35,587
115	0604879C		Ballistic Missile Defense Sensor Test	04	77,428	88,326	111,049	90,697	103,885	154,905	127,807	588,343
		MT11	BMDS Radars Test	04	74,272	85,119	106,820	87,751	99,357	148,438	122,921	565,287
		MD40	Program Wide Support	04	3,156	3,207	4,229	2,946	4,528	6,467	4,886	23,056
116	0604880C		Land Based SM-3 (LBSM3)	04	42,156	27,678	22,163	20,479	21,193	21,620	21,736	107,191
		MD68	AEGIS Ashore	04	38,489	25,448	20,316	18,501	19,072	19,453	19,482	96,824
		MC68	Cyber Operations	04	1,047	1,225	1,233	1,241	1,265	1,290	1,290	6,319
		MD40	Program-Wide Support	04	2,620	1,005	614	737	856	877	964	4,048
117	0604887C		Ballistic Missile Defense Midcourse Defense Segment Test	04	61,424	84,075	41,824	40,284	58,043	123,579	100,278	364,008
		MT08	Midcourse Test	04	59,503	80,114	40,160	38,834	55,698	118,565	95,831	349,088
		MD40	Program Wide Support	04	1,921	3,961	1,664	1,450	2,345	5,014	4,447	14,920
128	1206893C		Space Tracking and Surveillance System	04	14,907	0	0	0	0	0	0	0
		MD12	Space Tracking and Surveillance System (STSS)	04	14,168	0	0	0	0	0	0	0
		MC12	Cyber Operations	04	156	0	0	0	0	0	0	0
		MD40	Program-Wide Support	04	583	0	0	0	0	0	0	0
129	1206895C		Ballistic Missile Defense System Space Programs	04	285,706	129,957	109,483	119,860	43,032	43,900	44,957	361,232
		MD33	MD Space Exp Center (MDSEC)	04	29,327	34,512	35,367	37,962	35,755	36,829	37,567	183,480
		MD42	Hypersonic & Ballistic Tracking Space Sensor (HBTSS) Prototyping	04	249,890	89,220	68,538	75,840	3,755	3,470	3,539	155,142
		MC33	MD Space Exp Center (MDSEC)	04	1,324	1,506	1,690	1,744	1,783	1,820	1,857	8,894
		MD40	Program-Wide Support	04	5,165	4,719	3,888	4,314	1,739	1,781	1,994	13,716
			Budget Activity 04 Total	04	7,043,604	8,142,509	8,653,335	8,463,577	8,098,091	8,195,992	7,669,859	41,080,854
165	0605502C		Small Business Innovation Research - MDA	06	107,641	0	0	0	0	0	0	0
		MD45	Small Business Innovation Research	06	107,641	0	0	0	0	0	0	0
201	0901598C		Management HQ - MDA	06	24,102	25,259	28,363	29,039	29,601	30,174	30,760	147,937
		MD38	Management Headquarters	06	24,102	25,259	28,363	29,039	29,601	30,174	30,760	147,937
			Budget Activity 06 Total	06	131,743	25,259	28,363	29,039	29,601	30,174	30,760	147,937
			RDT&E Total	06	7,266,295	8,292,828	8,720,984	8,532,941	8,169,015	8,268,331	7,743,806	41,435,077
MILCON												
	0603888C		BMD TEST and TARG MILCON	NA	0	0	147,975	0	0	0	0	147,975
		MM44	BMDS Test Infrastructure Building (BTB)	NA	0	0	147,975	0	0	0	0	147,975
	22299902		MINOR MILCON	NA	4,435	0	0	4,879	5,905	5,992	5,912	22,688
		MM14	Minor MILCON	NA	4,435	0	0	4,879	5,905	5,992	5,912	22,688
	31299903		MILCON PLANNING and DESIGN	NA	19,000	47,063	1,035	6,845	0	0	0	7,880
		MM32	MILCON Planning Design	NA	19,000	47,063	1,035	6,845	0	0	0	7,880

Missile Defense Agency PB 2024 Missile Defense Agency FY 2024- FY 2028 Appropriation Summary R-1 Exhibit (\$ Thousands)												
Appropriation Summary Based on OFFLINE PB24 FY24-FY25 R12 - 02/25/2023												
Fiscal Year Amount Based on Business Rule CPS Version:				OFFLINE PB24 FY24 FY28 R12	OFFLINE PB24 FY24 FY28 R12	OFFLINE PB24 FY24 FY28 R12	OFFLINE PB24 FY24 FY28 R12	OFFLINE PB24 FY24 FY28 R12	OFFLINE PB24 FY24 FY28 R12	OFFLINE PB24 FY24 FY28 R12	OFFLINE PB24 FY24 FY28 R12	
Line Number	Program Element	Budget Project	Program	Budget Activity	FY22 Actual	FY23	FY24	FY25	FY26	FY27	FY28	FY24-28
	33399903		MILCON PLANNING AND DESIGN	NA	0	0	0	512,181	0	0	0	512,181
		MM65	Guam Defense Major MILCON	NA	0	0	0	438,000	0	0	0	438,000
		MM80	NGI Major MILCON	NA	0	0	0	74,181	0	0	0	74,181
Budget Activity 00 Total				NA	23,435	47,063	149,010	523,905	5,905	5,992	5,912	690,724
MILCON Total				NA	23,435	47,063	149,010	523,905	5,905	5,992	5,912	690,724
Program Total					10,411,048	10,544,539	10,887,384	11,366,251	10,737,840	11,055,546	11,228,150	55,275,171

Reporting Requirement Reference	Reporting Requirement Language	Budget Documentation Location
<i>FY23 DoD Appropriations Bill 2023, Report of the Committee on Appropriations (to accompany H.R. 8236), Report 117-388, pp. 52-53</i>	<p>JUSTIFICATION DOCUMENTS</p> <p>The Committee is concerned that some of the justification books and documents provided by the Department of Defense and the Services do not provide an adequate accounting for the funding requested. Neither documentation from the Pacific Deterrence Initiative (PDI) nor the European Deterrence Initiative (EDI) books match the information for additional funds included in the Services' justification documents. Nor do the descriptions of activities seem to change. In examining the documents, some of the descriptions are exactly the same year to year. Therefore, the Committee directs that the PDI and EDI justification documents be augmented with the submission of the fiscal year 2024 justification materials to include the following:</p> <p>(1) Each individual activity receiving funds will include the amount of increase in funding (not an overall top line increase);</p> <p>(2) Each individual activity will also include the baseline of funds from the previous fiscal year. Each augmented program or activity will specify which service, account, subactivity group or program element line is increasing.</p>	Submitted in the FY2024 Budget Justification Materials in PE 0604102C (Defense of Guam); 0603892C (BMD Aegis); 0603896C (C2BMC); 0603914C (BMD Test); 0603915C (BMD Targets); 0604878C (Aegis BMD Test); 0604879C (Sensors BMD Test); and 0208902C (Defense of Guam Procurement)
<i>FY22 National Defense Authorization Act (S. 1605), Public Law 117-81, p. 566</i>	<p>NEXT GENERATION INTERCEPTORS FOR MISSILE DEFENSE OF THE UNITED STATES HOMELAND</p> <p>The Director of the Missile Defense Agency shall develop a funding plan that includes funding lines across the future-years defense program under section 221 of title 10, United States Code, for the next generation interceptor that – (1) while applying lessons learned from the redesigned kill vehicle program, incorporating recommendations from the Comptroller General of the United States, and implementing “fly-before-you-buy” principles, produces and begins deployment of the next generation interceptor as early as practicable; (2) includes acquiring at least 20 operational next generation interceptors; and (3) includes transition plans to replace the current inventory of silo-based boosters with follow-on systems prior to the end of the useful lifecycle of the boosters.</p>	Submitted in the FY2024 Budget Justification Materials in PE 0604874C (Improved Homeland Defense Interceptors)
<i>FY19 National Defense Authorization Act (H.R. 5515), Report 115-863, pp. 257-258; FY20 National Defense Authorization Act (S. 1790), Report 116-333, p. 338</i>	<p>CONSOLIDATED BUDGET DISPLAY FOR THE DEPARTMENT OF DEFENSE SMALL BUSINESS INNOVATION RESEARCH PROGRAM AND SMALL BUSINESS TECHNOLOGY TRANSFER PROGRAM</p> <p>The Secretary of Defense, acting through the Under Secretary of Defense for Research and Engineering, shall include in the materials submitted to Congress by the Secretary of Defense in support of the budget of the President for each fiscal year (as submitted to Congress under section 1105 of title 31, United States Code), a budget display for the funds assessed for the Small Business Innovation Research Program or the Small Business Technology Transfer Program (as such terms are defined, respectively, in section 9(e) of the Small Business Act (15 U.S.C. 638(e))) of the Department of Defense during the previous fiscal year.</p> <p>MODIFICATIONS TO BUDGET DISPLAY REQUIREMENTS FOR THE DEPARTMENT OF DEFENSE SMALL BUSINESS INNOVATION RESEARCH PROGRAM AND SMALL BUSINESS TECHNOLOGY TRANSFER PROGRAM</p> <p>Section 857 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115-232; 132 Stat. 1891) is amended - (1) in subsection (a)— (A) by inserting “Under Secretary of Defense (Comptroller) and the” before “Under Secretary of Defense for Research and Engineering”; and (B) by striking “a budget display” and inserting “one or more budget displays”; (2) in subsection (b), by striking “The budget display” and inserting “The budget displays”; and (3) in subsection (d), by striking “The budget display” and inserting “The budget displays”.</p>	Submitted in the FY2024 Budget Justification Materials in PE 0605502C (Small Business Innovation Research – MDA)

<p><i>FY04 National Defense Authorization Act (H.R. 1588) Report 108-354, pp. 30-31</i></p>	<p>BUDGET JUSTIFICATION MATERIALS</p> <p>In the budget justification materials submitted to Congress in support of the Department of Defense budget for any fiscal year (as submitted with the budget of the President under section 1105(a) of title 31), the Secretary of Defense shall specify, for each ballistic missile defense system element for which the Missile Defense Agency is engaged in planning for production and initial fielding, the following information: (1) The production rate capabilities of the production facilities planned to be used for production of that element. (2) The potential date of availability of that element for initial fielding. (3) The estimated date on which the administration of the acquisition of that element is to be transferred from the Director of the Missile Defense Agency to the Secretary of a military department.</p>	<p>MDA to provide Missile Defense Accountability Report (MDAR) to Congressional Defense Committees. The MDAR partially satisfies the requirement through its schedule baseline.</p> <p>Exhibit P-21 – Budget Production Schedule</p>
<p><i>FY04 National Defense Authorization Act (H.R. 1588), Report 108-354, pp. 30-31</i></p>	<p>FUTURE-YEARS DEFENSE PROGRAM</p> <p>The Secretary of Defense shall include in the future-years defense program submitted to Congress each year under section 221 of this title an estimate of the amount necessary for procurement for each ballistic missile defense system element, together with a discussion of the underlying factors and reasoning justifying the estimate.</p>	<p>Exhibit P-21 – Budget Production Schedule</p>

ACRONYMS	DEFINITION
A	
A&A	Assessment and Authorization
A&AS	Advisory and Assistance Services
AA	Adversarial Assessment
AAEA	Aegis Ashore Engineering Agent
AAMDS	Aegis Ashore Missile Defense System
AAMDTCTC	Aegis Ashore Missile Defense Test Complex
AAW	Anti-Air Warfare
ABEWS	Airborne Early Warning System
ABMA	Automated Battle Management Aides
ACAS	Assured Compliance Assessment Solution
ACB	Advanced Capability Build
ACD	Advance Capability Development; Adversarial Cybersecurity Developmental Test and Evaluation
ACD&P	Advanced Component Development & Prototypes
ACL	Achievable Capabilities List
ACPA	Advanced Concepts and Performance Assessment
ACS	Aegis Combat System
ADP	Adversary Data Package
ADPE	Automatic Data Processing Equipment
AEDC	Arnold Engineering Development Center
AEU	Antenna Equipment Unit
AFB	Air Force Base
AGB	Alternate Glide Body
AI/ML	Artificial Intelligence/Machine Learning
AI&T	Assembly, Integration and Test
AIDPMO	Army Intermodal and Distribution Platform Management Office
AIE	Annual Integration Event
ALC	Army Logistics Center
ALO	Aegis Light-Off
AMCOM	Army Aviation and Missile Command
AMDR	Air and Missile Defense Radar
AMRDEC	Aviation and Missile Research, Development and Engineering Center
AN/SPY-1	Joint Army-Navy equipment nomenclature: S -Water (surface ship), P - Radar, Y - Surveillance (target detecting and tracking) and Control (fire control and/or air control), 1 - model number [AN/SPY-1 is an equipment nomenclature, not an Acronym]
AN/TPY-2	Joint Army-Navy equipment nomenclature: T - Transportable (ground), P - Radar, Y - Surveillance (target detecting and tracking) and Control (fire control and/or air control), 2 - model number [AN/TPY-2 is an equipment nomenclature, not an Acronym]
AO	Authorizing Official
AOA	Analysis of Alternatives
AOR	Area of Responsibility
APLITS	Approved Products List Integrated Tracking System
APNT	Assured Position Navigation and Timing
ARAV	Aegis Readiness Assessment Vehicles
ARE	Aegis Remote Engagement
ARSTRST	(US) Army Forces Strategic Command
ASD(R&E)	Assistant Secretary of Defense Research and Engineering
ASP	Advanced Signal Processor
ASUW	Anti-Surface Warfare
AT&L	Acquisition, Technology and Logistics
ATD	Advanced Technology Development; Assistant to the Director; Assistant Test Directors
ATEC	Army Test and Evaluation Command
ATK	Alliant Techsystems, Inc.
ATO	Authorization to Operation; Authority to Operate
AUPP	Average Unit Production Price
AUR	All Up Round
AVMC	Aviation and Missile Center
AWS	Arrow Weapon System; AEGIS Weapon System
B	

ACRONYMS	DEFINITION
BAA	Broad Agency Announcement
BAM	BMDS Asset Management
BBR	BOA Baseline Release
BCM	BMDS C2BMC Model
BCN	BMDS Communications Network
BL	Baseline
BM	Battle Management; Ballistic Missile
BMC	Battle Management Center
BMD	Ballistic Missile Defense
BMDQ	Ballistic Missile Defense Qualification
BMS	Building Management System
BMDS	Ballistic Missile Defense System
BMDCCS CS	BMDS Computing Suite, Computing Suite Upgrade
BNOSC	BMDS Network Operations and Security Center
BOA	BMDS Overhead Persistent Infrared Architecture
BoD	Boards of Director; Beneficial Occupancy Date
BORRS	BMDS Operational Readiness Reporting System
BSC	Battlespace Characterization
BSO	BMDS Safety Officers
BST	BMDS System Track
BTS	BMDS Test Site
BVT	Boost Vehicle Test
BWO	BMDS Watch Officers
C	
C-UAS	Counter-Unmanned Aerial Systems
C&A	Certification and Accreditation
C/FFP	Cost Fixed Firm Price
C2	Command and Control
C2BMC	Command and Control, Battle Management, and Communications
C2P	Command and Control Processor
C4I	Command, Control, Communications, Computers and Intelligence
CA	Certification Authority
CANES	Consolidated Afloat Networks and Enterprise Services
CAPE	Cost Assessment and Program Evaluation
CARD	Cost Analysis and Requirements Document
CBAU	Consolidated Booster Avionics Upgrade
CCA	Circuit Card Assemblies
CCaR	Comprehensive Cost and Requirements
CCC	C2BMC Command Center
CCDC	Capabilities Development Command
CCM	Counter Counter-Measures
CCMD	Combatant Commander; Combatant Commands
CD	Concept Descriptions; Cobra Dane
CDA	Continuous Digital Assessment
CDI	Continuous Development and Integration
CDR	Critical Design Review
CDS	Cross Domain Solution
CEC	Critical Engagement Condition; Cooperative Engagement Capability
CECOM	Communications Electronics Command
CENAU	Corps of Engineers North Atlantic Union
CENTCOM	Central Command
CERT	Computer Emergency Response Team
CEU	Cooling Equipment Unit
CFBLNet	Combined Federated Battle Laboratories Network
CFTE	Combined Flying Training Event
CG	US Navy ship hull classification symbol for - Guided Missile Cruiser [CG is not an Acronym]
CI	Counterintelligence
CI/CAT	Continuous Integration/Continuous Agile Testing
CIC	Counterintelligence in Cyberspace

ACRONYMS	DEFINITION
CID	Critical Item Development; Combat Identification
CIDS	Critical Items Description Specifications
CIL	Computer in the Loop
CIO	Chief Information Officer
CIP	Capability Insertion Packages
CKV	Common Kill Vehicle
CLAN	Classified Local Area Network
CLE	Command and Launch Equipment
Cloud ECART	Electronic Content and Records Tool
Cloud LMS	Electronic Learning Management System
CLS	Contractor Logistics Support
CMD-H	Cruise Missile Defense of the Homeland
CND	Computer Network Defense
CNDSP	Computer Network Defense Service Provider
CNET	Classified Network
COCOM	Combatant Command
COE	Common Operating Environment
COMNET	Communications Network
COMSEC	Communication Security
CONOPS	Concept of Operations
CONPLANS	Contingency Plans
CONUS	Continental United States
COOP	Calibrated Orbiting Objects Program ; Cyber Continuity of Operations
CoS	Colorado Springs
COTS	Commercial Off The Shelf
CP	Capability Packages
CPU	Congressional Plus Up
CPAF	Cost Plus Award Fee
CPCR	Computer Program Change Request
CPFF	Cost Plus Fixed Fee
CPI	Critical Program Information
CPIF	Cost Plus Incentive Fee
CPTS	Computer Program Test Site
CS	Combat System
CSCS	Center for Surface Combat Systems
CSFS	Clear Space Force Station
CSS	Contractor Support Services
CSSC	C2BMC System Support Center
CSSP	Cyber Security Service Provider
CSTB	Combat System Test Bed
CTB	C2BMC Test Bed
CTM	Core Truth Models
CTTO	Concurrent Test, Training and Operations
CTV	Control Test Vehicle
CTV-01	Controlled Test Vehicle-01
CU	Capability Upgrade
CUI	Controlled Unclassified Information
CVI	Cooperative Vulnerability Identification
CVPA	Cyber Vulnerability Penetration Assessment
CVT	Controls Validation Testing
CY	Calendar Year
D	
DA	Defend Area
DAA	Defense Appropriations Act; Designated Approving Authority
DAC	Divert Attitude Control
DACS	Divert and Attitude Control System
DARPA	Defense Advanced Research Projects Agency
DASD(DT&E)	Deputy Assistant Secretary of Defense, Developmental Test and Evaluation
DAU	Defense Acquisition University

ACRONYMS	DEFINITION
DCD	Defense Courier Division
DDG	US Navy ship hull classification symbol for - Guided Missile Destroyer [DDG is not an Acronym]
DDL	Dual-band Data Link; Digital Data Link
DECC	Defense Enterprise Computing Center
DEDD	Directed Energy Demonstrator Development
DESH	MDA/DESH - Missile Defense Agency (MDA)/Modeling & Simulation Huntsville (DESH) [office symbol within MDA Engineering Directorate, not an Acronym]
DETSIM	Detection Simulation
DEVSECOPS	Development, Security and Operations
DFAR	Defense Federal Acquisition Regulation
DHP	Data Handling Plan
DIA	Defense Intelligence Agency
DIACAP	DoD Information Assurance Certification and Accreditation Process; DoD Information Assurance Certification and Accreditation Program
DIB	Defense Industrial Base
DISA	Defense Information Systems Agency
DISN	Defense Information System Network
DL	Data Link
DLA	Defense Logistics Agency
dLNA	Digital Low Noise Amplifier
DMS	Diminishing Manufacturing Sources
DMSMS	Diminishing Manufacturing Sources and Material Shortages
DNOSC	Directorate Network Operations Security Center
DO	Delivery Order
DoD	Department of Defense
DODIC	DoD Identification Code
DODIN	DoD Information Network
DoG	Defense of Guam
DOT&E	Director of Operational Test and Evaluation
DOTMLPF	Doctrine, Organization, Training, Material, Leadership and Education, and Personnel and Facilities
DPALS	Diode Pumped Alkali Laser System
DPAS	Defense Property Accountability System
DREN	Defense Research Engineering Network
DREX	Digital Receiver/Exciter
DRSN	Defense Red Switch Network
DSC	Development and Sustainment Contract
DSCS	Defense Satellite Communication System
DSDD	Discrimination Sensor Demonstrator Development
DSS	Defense Security Service
DSWS	David's Sling Weapon System
DT&E	Developmental Test and Evaluation
DTRA	Defense Threat Reduction Agency
DTS	Distributed Training System
DTSS	Directorate of Test Support System
DVSG	DISN Video Services Global
DW	Defense Wide
DWCF	Defense Working Capital Fund
E	
ET-17	Engineering Topic 17
ET&E	Engineering Test and Evaluation
E/CCA	Element/Component Characteristics for Analysis
EA	Executing Agent; Engineering Assessment
EA/EP	Electronic Attack/Electronic Protection
EADSIM	Extended Air Defense Simulation
EAL	Evaluated Assurance Level
EAS	Eareckson Air Station
ECART	Electronic Content and Records Tool
ECE	Element Cybersecurity Experiments
ECP	Engineering Change Proposal

ACRONYMS	DEFINITION
ECS	Element Capability Specification; Engineering Change Summary
EDISS	End to end Digital Integrated System-level Simulation
EDISS	Enterprise Digital Integrated System Simulation
EDP	Early Digital Product
EE	Engineering Evaluation
EEU	Electronics Equipment Unit
EHF	Extremely High Frequency
EIS	Environmental Impact Statement
EKV	Exoatmospheric Kill Vehicle
eMASS	Enterprise Mission Assurance Support Service
EMD	Engineering Manufacturing Development
EME	Electromagnetic Environment
EMRL	Engineering and Manufacturing Readiness Level
EO/IR	Electro-Optical/Infrared
EOC	Engagement Operations Center
EOQ	Economic Order Quantity
EOQ AP	Economic Order Quantity Advance Procurement
EoR	Engage-on-Remote
EP	Electronic Protection
EPAA	European Phased Adaptive Approach
EPFR	Element Post Flight Reconstructions
EQLB	Executive Quick Look Briefing
ERB	Engineering Review Board
ERT	Element Review Team
ES	Elevated Sensor; Element Specification
ESI	External System Interface; Enterprise Software Initiative
ESL	External Sensors Lab; Enterprise Sensors Laboratory
ESOH	Environmental, Safety and Occupational Health
ESPN	Enterprise Sensor Processing Node
ESS	Electronic Security System; Endpoint Security Services
ET	Embedded Test
ETEDDS	End to End Distributed Development System
EUCOM	European Command
EVMS	Earned Value Management System
EWR	Early Warning Radar
EWS	Enterprise Work Stations
F	
FAR	Federal Acquisition Regulation
FBI	Federal Bureau of Investigation
FBM	Forward Base Mode
FCL	Fiber Combined Laser
FCS	Fire Control Section; Fire Control System (SPY/FCS - AN/SPY radar Fire Control System)
FDE	Force Developers Evaluation
FENSR	Force Engagement and Sensor Coordination - Raid
FFP	Firm Fixed Price
FFPLOE	Firm Fixed Prices Level of Effort
FFRDC	Federally Funded Research and Development Center
FGA	Fort Greely, Alaska
FGACC	Fort Greely, Alaska Communication Center
FILEMAN	File Manager
FISMA	Federal Information Security Management Act
FMA	Foreign Material Acquisition; Foreign Military Asset
FMS	Foreign Military Sales
FOC	Full Operational Capability
FOIA	Freedom of Information Act
FPA	Focal Plane Array
FPAF	Fixed Price Award Fee
FPEPA	Fixed Price with Economic Price Adjustment
FPIF	Fixed Price Incentive Firm

ACRONYMS	DEFINITION
FPIS	Fixed Price Incentive Successive
FQT	Formal Qualification Testing
FRACAS	Failure Reporting, Analysis, and Corrective Action System
FRCS	Facility-related control systems
FSRM	Facilities, Sustainment, Restoration, and Modernization
FT	Flight Test
FTCN	Flight Test Communication Network
FTG	Flight Test GMD
FTM	Flight Test Mission
FTT	Flight Test - THAAD
FY	Fiscal Year
FYDP	Future Years Defense Program; Fiscal Year Defense Plan
G	
GBI	Ground Based Interceptor
GBR-P	Ground Based Radar Prototype
GCC	Geographic Combatant Commands
GCN	Global Command Network; GMD Communications Network
GDIL	GMD Development Integration Lab
GDS	Guam Defense System
GEM	Global Engagement Manager; Guidance Enhancement Missiles (PATRIOT)
GEO	Geosynchronous Earth Orbits
GEP	Ground Entry Point
GEU	Guidance Electronics Unit
GFC	GMD Fire Control
GFC / C	GMD Fire Control and Communications
GFE	Government Furnished Equipment
GFI	Government Furnished Information
GFS	Government Furnished Services
GM	Ground-based Midcourse
GMD	Ground-based Midcourse Defense
GNC	Guidance, Navigation and Control
GNOSC	Global Network Operations and Security Center
GOTS	Government Off-The-Shelf
GP	Green Pine
GPI	Glide Phase Intercept
GPS	Global Positioning System
GS	Ground Systems; Guidance Section
GSA	General Service Administration
GSIL	GMD Software Integration Lab
GSS	Global Combatant Command
GT	Ground Test
GTD	Ground Test Distributed
GTI	Ground Test Integrated
GTISS	Ground Test Integrated System-level Simulation
GTRI	Georgia Tech Research Institute
GTX	Ground Test (Element to Element)
GWS	GMD Weapon System
H	
HA	Hit Assessment
HALO	High Altitude Observatory
HARRT	HMD Risk Reduction and Testing
HBTS	Hypersonic and Ballistic Tracking Space Sensor
HD	Hypersonic Defense
HDAWG	Homeland Defense Architecture Working Group
HDR-H	Homeland Defense Radar - Hawaii
HEMP	High Altitude Electromagnetic Pulse
HEMTT	Heavy Expanded Mobility Tactical Truck
HEO	Highly Elliptical Orbits
HES	Homeland Defense Radar - Hawaii Equipment Shelter

ACRONYMS	DEFINITION
HGV	Hypersonic Glide Vehicle
HIL	Human-in-the-Loop; Hardware-in-the-Loop
HLD	Homeland Defense
HMD	Hypersonic Missile Defense
HMI	Human Machine Interface
HRTS	Human Resource Tracking System
HRTS/PTS	Human Resource Tracking System/Personnel Tracking System
HTT	Hardened Transportable Terminal
HVAC	Heating, Ventilation, and Air Conditioning
HWIL	Hardware-in-the-loop
I	
I&T	Integration & Test
IA	Information Assurance
IAI	Israel Aircraft Industries; Israel Aerospace Industries
IAM	Information Assurance Manager
IAMD	Integrated Air and Missile Defense
IAR	Intra-agency Acquisition Review
IAVA	Information Assurance Vulnerability Alerts
IAW	In Accordance With
IBCS	Integrated Battle Command System
IBR	Integrated Baseline Review
IC	Intelligence Community
ICBM	Intercontinental Ballistic Missiles
ICD	Interface Control Document
ICP	Interface Change Proposal
ICS	Industrial Control System
ICTA	Information Technology Networks and Systems
IDDE	Integrated Digital Data Environment
IDIQ	Indefinite Delivery Indefinite Quantity
IDMP	Integrated Data Management Plan
IDS	Interface Description Specifications
IDT	In-Flight Interceptor Communications System Data Terminal
IEP	Integrated Engagement Plan
IESS	Integrated Electrical Security System
IFICS	In-Flight Interceptor Communications System
IFC	Integrated Fire Controls
IFCN	Integrated Fire Control Network
IHLD	Improved Homeland Defense Interceptors
ILP	Initial Lot Production
ILS	Integrated Logistics Support
IM	Insensitive Munitions
IMAP	Integrated Master Assessment Plan
IMD	Integrated Missile Defense
IMDO	Israeli Missile Defense Organization
IMoD	Israeli Ministry of Defense
IMPACT	Information Management Program Activity Control Tool
IMTP	Integrated Master Test Plan
IMU	Inertial Measurement Unit
INFOSEC	Information Security
INSURV	Inspection and Survey
IOC	Initial Operational Capability
IPR	In-Process Review
IPT	Integrated Product Team
IR	Infra-red
IRBM	Intermediate-Range Ballistic Missiles
IRES	Integrated Research & Development for Enterprise Solutions
IRD	Initial Requirement Documents
IRM	Information Resources Management
ISA	Installation Support Agreements

ACRONYMS	DEFINITION
ISA&I	Israeli System Architecture and Integration
ISCM	Information System Continuous Monitoring
ISF	In-service fleet
ISIM	International Simulation
ISSM	Information Systems Security Manager
ISSO	Information System Security Officer
ISSAM	Information Assurance System Security Manager
IST BAA	Innovation, Science, and Technology Broad Agency Announcement
ISTC	Integrated Software Test Center
IT	Integrated Test; Information Technology
ITB	Institutional Training Base; Israeli Test Bed
ITC	Integration and Test Contract
IV&V	Independent Verification and Validation
IWS	Indications and Warning System; Integrated Warfare Systems
J	
JADC2	Joint All Domain Command and Control
JEON	Joint Emergent Operational Need
JEWL	Joint Early Warning Laboratory
JFCC	Joint Functional Component Command
JFCC-IMD	Joint Functional Component Command - Integrated Missile Defense
JHU	John Hopkins University
JHU/APL	John's Hopkins University/Applied Physics Laboratory
JIAMDO	Joint integrated Air and Missile Defense Organization
JIE	Joint Information Environment
JITC	Joint Interoperability Test Command
JLVC	Joint Live Virtual Constructive
JMAC	Joint Multi-Platform Advanced Combat Identification
JNIC	Joint National Integration Center, Schriever AFB, CO
JRDC	JNIC Research and Development Contract
JRMET	Joint Reliability and Maintainability Evaluation Team
JSP	Joint Service Provider
JTIDS	Joint Tactical Information Distribution System
JTIFC	Joint Tactical integrated Fire Control
JTMC	Joint Track Management Capability
JWSP	Joint Warfighter Support Program
K	
KIDD	Kinetic Intercept Debris Distribution
KP	Knowledge Points
KTF	Kauai Test Facility
KV	Kill Vehicle
KW	Kinetic Warhead
L	
LBSM3	Land Based SM-3 (early name for Aegis Ashore)
LCC	Launcher Control Center; Local Control Center
LES	LRDR Equipment Shelter
LHCT	Long Haul Communications Transport
LHD	Layered Homeland Defense
LLNL	Lawrence Livermore National Laboratory
LM	Lockheed Martin
LMMT	Link Monitoring and Management Tool
LM-RMS	Lockheed Martin Rotary and Mission Systems
LMSSC	Lockheed Martin Space Systems Company
LNA	Low Noise Amplifiers
LNO	Liaison Officer
LoR	Launch on Remote
LRDR	Long Range Discrimination Radar
LRDS	Long Range Detection Suite
LRS&T	Long Range Surveillance and Track

ACRONYMS	DEFINITION
LRU	Line Replaceable Unit'
LSC	Launch Site Controller
LSE	Launch Support Equipment
LSS	Launch Support Systems
LTPO	Lower Tier Project Office
LVC	Live, Virtual, Constructive
M	
M&S	Materials and Structure; Modeling and Simulation
MAIDIQ	Multi-Awarded IDIQ
MAIS	Major Automated Information System
MAJCOM	Major Command
MAP	MDA Assurance Plan; MDA Assurance Provisions
MAR	MDA Assurance Representative
MARAD	Maritime Administration
MARS	Modular Analysis and Reporting Suite
MBIT	Missile Built in Tests
MBRV	Modified Ballistic Reentry Vehicle
MBSE	Model Based Systems Engineering
MCC-T	Mission Control Center - Targets
MCF	Mission Control Facility
MCS	Mobile Communications Suite
MD	Missile Defense
MDA	Missile Defense Agency
MDACNET	Missile Defense Agency Classified Net
MDAHQ	Missile Defense Agency Headquarters
MDAP	Major Defense Acquisition Program
MDAR	Missile Defense System Accountability Report
MDDC	Missile Defense Data Center
MDDE	Missile Defeat and Enhancements
MDEB	Missile Defense Executive Board
MDIOC	Missile Defense Integration Operations Center
MDOC	Missile Defense Operations Centers
MDR	Mission Data Review
MDS	Missile Defense System
MDSC	Missile Defense Space Center
MDSEA	Missile Defense Space Enterprise Architecture
MDSEC	Missile Defense Space Experimentation Center
MDST	Missile Defense Space Warning Tool
MEDDS	Mission Execution and Display Distribution System
MEDIC	Multi-band Electronic attack Digital Injection Capability
MEIT	Multi-Element Integration and Test
MFRL	Modification and Fielding Requirements List
MFU	Missile Firing Unit
MHA	Management Headquarters Activity
MICS	MDA Integrated Communications Services
MiDAESS	Missile Defense Agency Engineering and Support Services
MILCON	Military Construction; Military Construction funding (type of Appropriation)
MILSATCOM	Military Satellite Communications
MIL-STD	Military Standards
MIP	Master Integration Plan
MIPR	Military Interdepartmental Purchase Request
MIS	MDSDC Interchange System; MDSEC Interchange System
MISL	Missile Intelligence Secure Link
MIT	Miniature Interceptor Technology; Massachusetts Institute of Technology
MIT/LL	Massachusetts Institute of Technology, Lincoln Laboratory, Lexington, MA
MMR	Multi-Mission Radar
MMU	Mass Modal Unit
MOC	Missile Defense Agency Operations Center
MOKV	Multi Object Kill Vehicle

ACRONYMS	DEFINITION
MOU	Memorandum of Understanding
MPAN	Missile Power Application Non-Launch
MPG	Mission Processing Group
MPL	ManPower Loading
MRBM	Medium-Range Ballistic Missiles
MRP	Missile Reprogramming
MRP-T	Missile Round Pallet-Transportable
MS	Mobile Sensor
MSC	Military Sealift Command; Mission Support Center
MSCT	Multi-Source Correlator Tracker
MSE	Missile Segment Enhancement
MSI	Mobile Sensor Integration
MSVP	Missions Specific Vendor Plug-in
MTC2	Maritime Command and Control
MTOE	Modified Table of Organization and Equipment
MVC	Mission Voice Communications
MW/MD	Missile Warning/Missile Defense
MW/SS	Missile Warning/Space Surveillance
MYP	Multi-Year Procurement
N	
NATO	North Atlantic Treaty Organization
NAVFAC	Naval Facilities Engineering Command
NAVSEA	Naval Sea Systems Command
NAWC	Naval Air Warfare Center
NCR	National Capital Region
NDAA	National Defense Authorization Act
NEPA	National Environmental Policy Act
NGI	Next Generation Interceptors
NGAS	Northrop Grumman Aerospace Systems
NGSS	Northrop Grumman Space Systems
NICE	National Initiative for Cybersecurity Education
NIPRNET	Non secure Internet Protocol Router Network
NIST	National Institute of Standards and Technology
NORAD	North American Aerospace Defense Command
NORTHCOM	Northern Command
NOSC	Network Operations Security Center
NRL	Naval Research Laboratory, Washington, DC
NSA	National Security Agency
NSWC	Naval Surface Warfare Center
O	
O&M	Operations and Maintenance
O&S	Operations and Sustainment
OA	Open Architecture: Operational Acceptance
OCB	Operational Capability Baseline
OCL	OPIR Laboratories
OCO	Overseas Contingency Operations
OCONUS	Outside of CONUS
OEM	Original Equipment Manufacturer
OGA	Other Government Agency
OMB	Office of Management and Budget
OPIR	Overhead Persistent Infrared
OPLAN	Operations Plan
OPSEC	Operations Security
OPTISIG	Optical Signatures In-Line Generator
OQE	Objective Qualitative Evidence
ORNL	Oak Ridge National Laboratory
OSC	Operations Support Center; Optical Signatures Code
OSC/OPTISIG	Optical Signatures Code/Optical Signature Inline Generator
OSD	Office of the Secretary of Defense

ACRONYMS	DEFINITION
OSF	Objective Simulation Framework
OSH	Occupational Safety and Health
OSI	Open Systems Architecture Signal Injectors
OSM	Object Sighting Message; Open Systems Architecture Sensor Models
OSPT	Operations Support Planning Team
OTA	Operational Test Agencies
OUSD/AT&L	Office of Under Secretary of Defense/Acquisitions, Technology and Logistics
P	
P&P	Policy and Procurement
PA	Performance Assessments; Project Arrangement
PAA	Phased Adaptive Approach
PAAWNS	Protected Anti-Jam/Anti-Scintillation Wideband Net-Centric System
PAC-3	Patriot Advanced Capability-3
PACOM	Pacific Command
PA IDT	Phased Array IDT
PATRIOT	Phased Array Tracking Radar Intercept on Target
PAV	Performance Assessment and Verification
PB	President's Budget
PCIL	Prime Consolidated Integration Lab
PCL	Prioritized Capabilities List
PCO	Procurement Contracting Office
PCRSS	Pacific Collector Range Safety System
PDC	Power Distribution Centers
PDI	Pacific Deterrence Initiative
PDR	Preliminary Design Review
PDS	Power Distribution System
PE	Program Element
PEELS	Parametric Endo/Exo-atmospheric Lethality Simulation
PEO IWS	Program Executive Office - Integrated Warfare Systems
PFR	Post Flight Reconstruction
PIA	Post Intercept Assessment
PID	Post Intercept Debris
PIDS	Prime Item Development Specifications
PLET	Phenomenology, Lethality, Environment, Threat
PM	Program Manager
PM/IAM	Program Manager/Information Assurance Manager
PMAP	Process Mission Assurance Plan
PMDCATS	Program Manager - Communications and Transmission Systems
PME	Primary Mission Equipment
PMI	Preventative Maintenance Inspection
PMP	Parts, Materials and Processes
PMPCB	Parts, Materials, and Process Board Requirements
PMRF	Pacific Missile Range Facility, Barking Sands, Kauai, HI
PM SHIELD	Project Manager for Short and Intermediate Effectors for Layered Defense
PMT	Pre-Mission Test
PNT	Positioning, Navigation and Timing
POA&M	Plan of Action and Milestones
POC	Point of Contact
PoP	Period of Performance
PPU	Prime Power Unit
PRIDE	Program Resource Internet Database Environment
PRR	Production Readiness Review
PWS	Program-Wide Support
PY	Prior Year
Q	
QLIK Sense	Missile Defense Agency Enterprise Data Visualization Tool
QRT	Quick Response Team
QSMA	Quality Safety and Mission Assurance

ACRONYMS	DEFINITION
R	
R&C	Readiness and Control
RAFU	Radar Field Upgrade
RAM-T	Reliability, Availability, and Maintainability and Testability
RAR	Risk Assessment Report
RASP	Rapid Scenario Prototype
RCCTO	Rapid Capabilities and Critical Technologies Office
RCS	Radar Cross Section
RDC	Radar Development Contract
RDEC	Research, Development, and Engineering Center
RDT&E	Research, Development, Test & Evaluation/Engineering
RECS	Research and Development Enterprise Collaboration Services
RF	Radio Frequency
RFA	Requests for Analyses
RFI	Requests for Information
RFP	Request for Proposal
RFT	Requests for Allied Participations in Tests
RKV	Redesigned Kill Vehicle
RMF	Risk Management Framework
RTS	Ronald Reagan Test Site, Kwajalein, Marshall Islands
RV	Reentry Vehicle
S	
SAF	Secretary of the Air Force
SAMD	Space Applications for Missile Defense
SAP	Special Access Programs
SAS	Sub-array suites
SATCOM	Satellite Communications
SBIR	Small Business Innovative Research;
SBIR/STTR	Small Business Innovative Research/Small Business Technology Transfer
SBIRS	Space Based Infrared System; Space-Based Infrared Sensors
SBOM	Software bill of materials
SBS	Sea Based Systems
SBT	Sea Based Terminal
SBX	Sea Based Test X-Band Radar
SC2RM	System-level Supply Chain and Cyber Risk Management
SCA	Security Controls Assessment (or Assessor)
SCADA	Supervisory Control And Data Acquisition
SCARE	Software Change Analysis Review Environment
SCG	Security Classification Guides
SCIF	Sensitive Compartmented Information Facility
SCMS	Site Control Monitoring System
SCN	Specification Change Notices; System Change Notices
SCOUT	Simultaneous Correlation of Unambiguous Tracks
SCR	SM-3 Cooperative Development; System Capability Review
SCRM	Supply Chain Risk Management
SCTM	Security Controls Traceability Matrix
SDA	Space Domain Awareness
SDR	System Design Review; Software Design Review
SE&I	Systems Engineering and Integration
SECDEF	Secretary of Defense
SEI	Systems Engineering & Integration
SGP	Super Green Pine
SI	Special Instruction
SIAO	Senior Information Assurance Officer
SIAO/CA	Senior Information Assurance Officer (SIAO)/Certification Authority (CA)
SIEM	System Information and Event Management
SIGNIT	Signal Intelligence
SIPRNET	Secret Internet Protocol Router Network
SISO	Senior Information Security Officer

ACRONYMS	DEFINITION
SITR	System Engineering, Integration, Test, and Readiness
SIU	Simulation Interface Units
SIV	Silo Interface Vault
SKA	Space-based Kill Assessment
SLD	System Level Integrated Discrimination
SLEP	Service Life Extension Program
SM	Standard Missile
SM-3	Standard Missile -3
SMAC	Shot Management Analysis Cell
SMDC	Space and Missile Defense Command, U.S. Army
SMDC/ARSTRST	Space and Missile Defense Command/Army Forces Strategic Command
SME	Subject Matter Expert
SNL	Sandia National Lab
SOC	Space Object Catalog
SOI	Space Object Identification
SP	Special Publication
SPAWAR	Naval Space and Warfare Command; Space and Naval Warfare Systems Command
SPFR	System Post Flight Reconstruction
SPMT	System Pre Mission Test
SpOC	Space Operations Command
SPPN	Special Purpose Processing Node
SPS	Standard Procurement System
SRBM	Short-Range Ballistic Missiles
SRBMD	Short Range Ballistic Missile Defense
SRD	Systems Requirements Document
SRP	Stockpile Reliability Program
SRR	System Requirements Review; Software Readiness Review
SS/CPAF	Soul Source/ Cost Plus Award Fee
SS/CPFF	Soul Source/ Cost Plus Fixed Fee
SSA	Space Situational Awareness
SSC	System Security Concept
SSF	Single Stimulation Framework
SSL	Space Sensor Layer
SSN	Space Surveillance Network
SSO	Special Security Office
STEM	Science, Technology, Engineering, and Mathematics
STOC	System Test and Operations Center
STRATCOM	Strategic Command
STSS	Satellite Tracking and Surveillance System; Space Tracking and Surveillance System
STTR	Small Business Technology Transfer
SWDC	Specialized Warfighter Development Contract
SWES	Software Evaluation Station
SWIR	Software Increment Reviews
SWUP	Software Upgrade
SYMP	Symposium
SysML	Systems Modeling Language
T	
T&E	Test and Evaluation
TACAIR	Technical Authority; Tactical Air
TALSS	THAAD Active Leak Sensor System
TC	Targets and Countermeasures

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)</i>					PE 0603176C / <i>Advanced Concepts and Performance Assessment</i>							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	164.955	39.678	39.737	17.825	-	17.825	18.301	18.752	19.134	19.596	Continuing	Continuing
MD71: <i>Advanced Concepts and Performance Assessments</i>	99.132	22.001	31.446	13.386	-	13.386	13.732	14.007	14.291	14.579	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	4.221	0.607	0.608	0.634	-	0.634	0.659	0.758	0.776	0.869	Continuing	Continuing
MC71: <i>Cyber Operations</i>	61.602	17.070	7.683	3.805	-	3.805	3.910	3.987	4.067	4.148	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

The decrease from FY 2023 to FY 2024 reflects Congressional add of \$23.0 million enacted in FY 2023.

A. Mission Description and Budget Item Justification

The Advanced Concepts and Performance Assessment (ACPA) Program Element delivers a government concept that integrates concept definition, simulation, analysis, and testbed capability. ACPA's focus is on the exploration of novel and/or emerging capabilities that may have the potential to enhance the Missile Defense System. ACPA centralizes assessment of advanced missile defense technology and delivers insight into the performance of proposed concepts extending the Missile Defense Agency's (MDA) ability to address evolving threats for the Warfighter. Working with national laboratories and industry, MDA will invest in the analysis and assessment of directed energy system components to determine their effectiveness and capability for missile defense.

Subject Matter Experts provide independent assessments of government, university, and industry technology concepts, used in concert with systems engineering requirements, to support acquisition strategy decisions and define technology focus areas. The innovative structured concept definition and assessment methodology enables MDA to quickly validate focus areas, verify contractor technology solutions, and evaluate promising concepts in future Missile Defense System architectures. This methodology significantly enhances MDA's ability to assess technology concepts while decreasing the cost of development by:

- Delivering Independent model-based simulations of industry technology concepts to inform the systems engineering process
- Quantifying expectations through algorithms, digital simulation, hardware-in-the-loop, and/or demonstration events prior to expensive live fire test events
- Executing end-to-end testing of technology concepts integrated with weapon systems through Command and Control network architectures
- Maturing and conducting assessments of new technologies to evaluate their readiness for transition to the future Missile Defense System
- Supports early coordination with the program elements to promote efficient integration into the Missile Defense System and provide additional capability to meet the Warfighter needs

Performance assessment of advanced concepts is the key enabler for government evaluation of technology in the earliest stages of development and maximizes the efficiency of technology investments. Performance assessment is used to quantify capability expectations of innovative concepts to counter the expanding regional and homeland missile threats, including ballistic and cruise missiles, and hypersonic vehicles.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)		PE 0603176C I Advanced Concepts and Performance Assessment			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	40.000	16.737	17.265	-	17.265
Current President's Budget	39.678	39.737	17.825	-	17.825
Total Adjustments	-0.322	23.000	0.560	-	0.560
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	23.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.322	0.000			
• Other Adjustment	0.000	0.000	0.560	-	0.560
<u>Change Summary Explanation</u>					
Congressional Adds Details					
FY 2023 Congressional Adds Total \$23.0 million					
Project: MD71 Advanced Concepts and Performance Assessments					
- Hypersonic kill vehicle Hardware-in-the-Loop upgrades (\$15 million)					
- Generic left/right of launch architecture system simulation (GLASS) (\$4 million)					
Project: MC71 Cyber Operations					
- Cyber Operations (\$4 million)					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603176C / <i>Advanced Concepts and Performance Assessment</i>				Project (Number/Name) MD71 / <i>Advanced Concepts and Performance Assessments</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD71: <i>Advanced Concepts and Performance Assessments</i>	99.132	22.001	31.446	13.386	-	13.386	13.732	14.007	14.291	14.579	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The decrease from FY 2023 to FY 2024 reflects Congressional add of \$19.0 million enacted in FY 2023.

A. Mission Description and Budget Item Justification

Advanced Concepts and Performance Assessments (ACPA) centralizes advanced technology concept modeling, simulation, software, and analysis. Integrating models of promising disruptive technical solutions into Missile Defense System system-level simulations enables leadership to make data driven acquisition and technology investment decisions. Assess concepts that improve or adapt existing systems, that incorporate mobile sensors and interceptors that can be surged into zones of crisis or conflict are also deemed disruptive. Examples of efforts required to quantify the contribution of disruptive technologies may include, but not be limited to environmental experimentation and phenomenological characterization required for new sensor concepts, advanced weapon technologies, and emerging directed energy concepts. Using a technology development testbed approach, ACPA enables assessment and characterization of incremental technology improvements to inform requirements and evaluate missile defense elements, components, and/or sub-component technologies and to assess maturity as it relates to readiness for transition to the future Missile Defense System. ACPA promotes informed decision making early in the acquisition life-cycle to maximize investments and successful transition into the Missile Defense System.

Coupled with characterization efforts, ACPA develops innovative left-through-right-of-launch modeling capabilities including physics-based representations in the areas of cyber, sensor technologies, lethality and survivability, communications, and sensor support. ACPA is focusing on Science and Technology initiatives which increase interoperability and leverages expertise with allied and service partners.

ACPA capitalizes on the innovation of small businesses, universities, Federally Funded Research and Development Centers (FFRDCs), and University Affiliated Research Centers (UARCs) to pursue a broad range of hardware, software, models, algorithms, trade studies, and analysis. These innovations bring together government developed models representing existing and future missile defense architectures, technology concepts, and advanced algorithms to provide detailed assessments of concept performance and inform investment decisions. These innovations, combined with a robust high performance computing infrastructure, provide a unique in-house government capability to demonstrate and assess technology concepts for emerging technology risk reduction, to mature concepts with laboratory, ground, and flight test data, and where possible, apply concepts in simulated exercises with weapon systems across representative communication architectures.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2022	FY 2023	FY 2024
Title: Advanced Concepts and Performance Assessment				12.001	16.446	13.386
Articles:				-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603176C / <i>Advanced Concepts and Performance Assessment</i>	Project (Number/Name) MD71 / <i>Advanced Concepts and Performance Assessments</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>Description: Provide quantitative assessments that define the benefits of technology investments and inform requirements using an integrated concept definition, simulation, and performance analysis capability. A staff of diverse Subject Matter Experts (SMEs) delivers independent government performance evaluations which exercise kinetic and non-kinetic missile defense concept representations against the broad spectrum of evolving threats.</p> <ul style="list-style-type: none"> - Assess electro-optical infrared and advanced sensor technologies and quantify impacts on Missile Defense System - Provide independent government assessments of industry sensor, directed energy and weapon system technology concepts, and the ability of these systems to be integrated for a more effective Missile Defense System - Evaluate lethality impacts and weapons effectiveness of emerging concepts - Examine pathfinder solutions and demonstrate the utility of directed energy for missile defense - Study on-orbit satellite capabilities and contribution to defense against advanced threats - Assess and identify promising intercept capabilities across all phases of flight - Perform concept performance against emerging advanced threats including hypersonic threat testing scenarios - Mature advanced technology concepts in a testbed environment and through lab, ground, and flight demonstrations - Apply concepts in simulated exercises with weapon systems - Work with the Missile Defense System Architect and Missile Defense Agency (MDA) Systems Engineer to design concepts, build models and assess technology concepts' contributions to future Missile Defense System architectures - Develop and extend modeling techniques, including incorporation of artificial intelligence - Focus research and engineering activities from university and small business partners to identify suitable technology and concepts that improve Missile Defense System performance through a rapid innovation model based on an engineering test bed - Assess multi-domain data fusion concept for current or future weapon systems <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: Congressional Add: Generic left/right of launch architecture system simulation (GLASS) (\$4 million) - Examine Left-through-Right-of-Launch tactics, techniques, procedures, and benefits</p> <p>- SEE ABOVE</p> <p>FY 2024 Plans: - SEE ABOVE</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency								Date: March 2023			
Appropriation/Budget Activity 0400 / 3				R-1 Program Element (Number/Name) PE 0603176C / <i>Advanced Concepts and Performance Assessment</i>				Project (Number/Name) MD71 / <i>Advanced Concepts and Performance Assessments</i>			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024	
Decrease from FY 2023 to FY 2024 reflects the FY 2023 Congressional add.											
Title: Hypersonic Hardware-in-the-Loop <div style="text-align: right;">Articles:</div>								10.000	15.000	0.000	
Description: Develop an independent government hypersonic testbed supporting assessment and maturation of industry and/or government technology approaches. Leverage existing facilities and extend ballistic/hypersonic kill vehicle hardware-in-the-loop (HWIL) by integrating with evolving hypersonic sensor HWIL capabilities. Provide a prototype platform consisting of technologies necessary to evaluate the potential of new kill vehicle concepts to identify, track, and engage emerging threats; including vehicles with dynamically changing aerothermal signatures. Assess, mature, and integrate high-fidelity environmental truth models and/or representations for aerothermal, aero-optics and/or jet interaction for hypersonic flight environments to provide accurate simulations for digital scene injections into kill vehicle concept representations in HWIL facilities. Bolster prototype development and maturation by upgrading hypersonic HWIL capabilities through pathfinder process integrating agile continuous integration/continuous delivery capabilities. FY 2023 Plans: Congressional Add: Hypersonic kill vehicle Hardware-in-the-Loop upgrades (\$15 million) - Develop digital hypersonic kill vehicle performance assessment test environment FY 2024 Plans: N/A FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects the FY 2023 Congressional add.								-	-	-	
Accomplishments/Planned Programs Subtotals								22.001	31.446	13.386	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603180C: <i>Advanced Research</i>	51.270	85.323	21.461	-	21.461	22.024	22.571	23.031	23.591	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
Utilize various contracting strategies with small businesses, Federally Funded Research and Development Centers, University Affiliated Research Centers, and other Government Agencies to maximize the contribution to MDA and inform Better Buying Power acquisition decisions.											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603176C / Advanced Concepts and Performance Assessment				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program-Wide Support	4.221	0.607	0.608	0.634	-	0.634	0.659	0.758	0.776	0.869	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603176C / Advanced Concepts and Performance Assessment				Project (Number/Name) MC71 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC71: Cyber Operations	61.602	17.070	7.683	3.805	-	3.805	3.910	3.987	4.067	4.148	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The decrease from FY 2023 to FY 2024 reflects Congressional add of \$4.0 million enacted in FY 2023.

A. Mission Description and Budget Item Justification

This project supports the monitoring and tracking of Cybersecurity mitigations as required in the Department of Defense (DoD) Instruction Number 8510.01, as amended which establishes Risk Management Framework (RMF) requirements for DoD Information Technology (IT). Funds in this project implement and sustain DoD-required RMF and associated Controls Validation Testing activities, analysis of validation results, risk assessments and reviews of proposed Program Manager/Information Assurance System Security Manager Plans of Action and Milestones (POAMs) for enabling modeling and simulation mission systems. This project captures the RMF documentation (artifacts, validation results, Information Assurance (IA) risk assessment results, and the Missile Defense Agency (MDA) authorizing official and chief information officer accreditation decisions) into the Defense Information Systems Agency's Enterprise Mission Assurance Support Service system. Hardware and software upgrades required to meet DoD standards are supported by funding in this project. Independent verification and validation team actions ensure the availability, integrity, authentication, confidentiality and non-repudiation of the MDA mission, test and administrative systems. Activities in the project are necessary to comply with the Federal Information Security Management Act.

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

	FY 2022	FY 2023	FY 2024
Title: Information Assurance / Cyber Network Defense	17.070	7.683	3.805
Articles:	-	-	-
Description: Funds RMF, network defense, and information technology requirements including: <ul style="list-style-type: none"> - Conduct cybersecurity/IA engineering and architecture planning - Maintain hardware/software currency to meet DoD-mandated cybersecurity requirements - Support monitoring and tracking of Cybersecurity mitigations detailed in IT security POAM - Develop DoD RMF certification and accreditation packages - Conduct controls validation testing of systems and to provide POAM to mitigate IA deficiencies - Conduct annual IA reviews to assess compliance in implementing and maintaining IA controls 			
Specific and/or unique accomplishments to each FY are as follows:			
FY 2023 Plans: Congressional Add: Cyber Operations (\$4 million) - Conduct a multi-player wargame to support the Defense of Guam desired architecture			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 3				R-1 Program Element (Number/Name) PE 0603176C / Advanced Concepts and Performance Assessment				Project (Number/Name) MC71 / Cyber Operations				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2022	FY 2023	FY 2024
- SEE ABOVE												
FY 2024 Plans:												
- SEE ABOVE												
FY 2023 to FY 2024 Increase/Decrease Statement:												
Decrease from FY 2023 to FY 2024 reflects the FY 2023 Congressional add.												
Accomplishments/Planned Programs Subtotals										17.070	7.683	3.805
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• 0604102C: Guam Defense Development	110.611	393.201	397.578	-	397.578	291.301	272.227	238.348	232.115	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
N/A												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)					R-1 Program Element (Number/Name) PE 0603180C I Advanced Research							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	207.829	51.270	85.323	21.461	-	21.461	22.024	22.571	23.031	23.591	Continuing	Continuing
MD25: Advanced Technology Development	202.687	50.439	84.523	20.698	-	20.698	21.231	21.659	22.097	22.545	Continuing	Continuing
MD40: Program-Wide Support	5.142	0.831	0.800	0.763	-	0.763	0.793	0.912	0.934	1.046	Continuing	Continuing
Program MDAP/MAIS Code: 362												

Note

The decrease from FY 2023 to FY 2024 reflects Congressional add of \$63.3 million enacted in FY 2023.

A. Mission Description and Budget Item Justification

The Advanced Research Program conducts leading edge technology research and development efforts to enable future missile defense capabilities. The Missile Defense Agency (MDA) executes this mission by capitalizing on the creativity and innovation of the brightest minds in our Nation's universities, small and large businesses, national laboratories, other government agencies, and allied countries. In accordance with identified Agency requirements and Warfighter needs, the program assesses and demonstrates the utility of emerging component technologies. After successful maturation and demonstration activities, the program facilitates transition of the technologies to the Missile Defense System through a Commercialization and Transition Office and other MDA programs.

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	47.966	22.023	22.758	-	22.758
Current President's Budget	51.270	85.323	21.461	-	21.461
Total Adjustments	3.304	63.300	-1.297	-	-1.297
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	63.300			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.364	0.000			
• Other Adjustment	3.668	0.000	-1.297	-	-1.297

Change Summary Explanation

Decrease in FY24 reflects the reduction in civilian labor to align MDA workforce demands.

Congressional Add Details

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	
0400: Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)	PE 0603180C / Advanced Research	
Project: MD25 Advanced Technology Development		
FY 2023 Congressional Adds Total \$63.3 million		
- Hypersonic testbed acceleration (\$25 million)		
- Sounding Rocket Testbed Technology Maturation Tests (\$10 million)		
- Benzoxazine High-Mach System Thermal Protection (\$8 million)		
- High temp nickel based alloys for hypersonic applications (\$6 million)		
- Sounding rocket vehicle high speed testbed tech (\$6 million)		
- Hypersonic interceptor component technology (\$4.3 million)		
- Laser weapons optics tech risk mitigation (\$4 million)		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603180C / <i>Advanced Research</i>				Project (Number/Name) MD25 / <i>Advanced Technology Development</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD25: <i>Advanced Technology Development</i>	202.687	50.439	84.523	20.698	-	20.698	21.231	21.659	22.097	22.545	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The decrease from FY 2023 to FY 2024 reflects Congressional add of \$63.3 million enacted in FY 2023.

A. Mission Description and Budget Item Justification

The Missile Defense Agency's (MDA) Advanced Technology Development Program pursues a broad range of emerging technologies targeted for application into the Missile Defense System. MDA explores potential new Missile Defense System capabilities by leveraging the creativity and innovation of the Nation's industry, universities, and national laboratories to develop advanced technologies. MDA also pursues advanced technology development through cooperative international research agreements between U.S. and foreign universities of allied nations. The program manages the selection process and administers the Missile Defense Small Business Innovation Research (SBIR) program element (PE), 0605502C. SBIR topics and projects are selected annually based on needs across the Missile Defense System and executed in partnership with sponsoring intra-agency organizations. These mechanisms foster a cooperative environment between small businesses, prime contractors, and MDA elements to yield reduced cost and increased returns on investment for successful technology integration efforts.

MDA's Advanced Technology Development Project assesses the feasibility and technical performance of the advanced research and development efforts through in-house means and partnerships with Department of Defense and other government agency laboratories. MDA provides independent assessments, demonstration and experimentation environments, and other concept assessment capabilities. The output of the experimentation, demonstration, and laboratory efforts provide risk reduction, transition feasibility, performance assessments, concept assessment data and analysis, and an overall improvement in the state-of-the-art of advanced technology evaluation. The culmination of research, development, and assessment is the commercialization and transition of promising technologies into the Missile Defense System.

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

		FY 2022	FY 2023	FY 2024
Title: Advanced Research		50.439	84.523	20.698
Articles:		-	-	-
Description: This activity funds technology and research initiatives executed through continuous cycles of development, maturation, and assessment of component technologies identified by emerging weapon and sensor system concepts.				
Recurring tasks include:				
- Conduct systems engineering, integration, research, and material solution analysis to identify initiatives and technology to include missiles, sensors, and command and control components in the defense against current and future threats				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603180C / <i>Advanced Research</i>	Project (Number/Name) MD25 / <i>Advanced Technology Development</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> - Pursue advanced technology investments for defense against ballistic and non-ballistic hypersonic threats - Develop breakthrough technology and innovative solutions from private industry, qualified accredited educational institutions, and non-profit organizations to include: <ul style="list-style-type: none"> -- Additive manufacturing technology initiatives for interceptor propulsion and structural components -- Materials development, assessment, and processing techniques -- Advanced threat component technologies -- Electra-optical and infrared sensor and communication systems -- Radar and radio frequency communication systems -- Interceptor and space systems component technologies -- Left through right of launch integration - Assess and evaluate advanced technology investments to extract risk-reduction information and determine transition feasibility - Execute the Broad Agency Announcement (BAA) addressing breakthrough technologies and innovative solutions from private industry, qualified accredited educational institutions, and non-profit organizations to include: <ul style="list-style-type: none"> -- Artificial intelligence related to machine learning, big data, and Decision Theory -- Computer Science, Signal and Data Processing -- Directed energy technology -- Future Missile Defense System concept development -- Kill Web Algorithms, Probability and Decision Theory -- Modeling and simulation -- Radar and radio frequency sensor systems -- Phenomenology - Utilize NanoSat technology demonstrations and sounding rockets to conduct testing and reduce risk for new and advanced technologies for the Missile Defense System - Continue to assess incoming innovative technology white papers and pursue awards for those that align with Agency priorities and budget, emphasizing component technologies that address advanced threat challenges - Leverage university research opportunities including allied nations to enhance Missile Defense System advanced technology initiatives and build stronger relationships with allies and partners - Manage the selection process of SBIR and technology application programs to assist MDA funded technology developers in finding and entering technology transfer opportunities to missile defense applications <p>Specific and/or unique accomplishment to each FY are as follows:</p> <p>FY 2023 Plans:</p> <p>Congressional Add: Hypersonic testbed acceleration (\$25 million)</p> <ul style="list-style-type: none"> - Launch initial Hypersonic Testbed with technology demonstration experiments/payloads 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603180C / <i>Advanced Research</i>	Project (Number/Name) MD25 / <i>Advanced Technology Development</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> - Continue efforts to develop and launch a modular hypersonic vehicle capable of increased Mach Number and longer flight times - Demonstrate advanced components technology capability in hypersonic environment <p>Congressional Add: Sounding rocket hypersonics testing (\$10 million)</p> <ul style="list-style-type: none"> - Provide technology development to develop and test a modular hypersonic vehicle capable of hosting weapon system component technologies applicable to future interceptor systems and flying component technology experiments in the hypersonic domain <p>Congressional Add: Benzoxazine for high-mach system thermal protection (\$8 million).</p> <ul style="list-style-type: none"> - Continue development of benzoxazine formulations for multiple resins for the production of lower-cost, quicker-yield carbon/ carbon composites. - Develop scalable resin precursor chemical production for a domestic source of critical chemicals for benzoxazine production. <p>Congressional Add: High temperature nickel-based alloys for hypersonic applications (\$6 million)</p> <ul style="list-style-type: none"> - Continue development with a leading nickel-based alloy powder manufacturer on additive manufacturing of challenging, high precision components. <p>Congressional Add: Sounding rocket vehicle high speed testbed technology (\$6 million)</p> <ul style="list-style-type: none"> - Develop and test component technology in hypersonic environments via ground testing and sounding rockets tests <p>Congressional Add: Hypersonic interceptor component technology (\$4.3 million)</p> <ul style="list-style-type: none"> - Continue developing, testing and characterizing advanced hypersonic component technology to include seeker window materials, thermal protection systems, aero optics and jet interaction capability <p>Congressional Add: Laser weapons optics technology risk mitigation (\$4 million)</p> <ul style="list-style-type: none"> - Continue development of a chemical vapor composite silicon carbide Adaptive Optic system. - Test tactical prototype in long range, representative application environment. <ul style="list-style-type: none"> - Continue NanoSat Testbed Initiative: collect and analyze on-orbit mission data from communication architectures experiments. Continue next series of experimentation focused on improved engagement management techniques, enhanced security, and reduced latency with increased throughput <ul style="list-style-type: none"> - Continue High Temperature Seeker Window Assessment by developing and characterizing advanced materials, radiation hardened components, and experimentation in relevant environments 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603180C / <i>Advanced Research</i>	Project (Number/Name) MD25 / <i>Advanced Technology Development</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
- Continue sounding rocket testbed maturation for hypersonic testing of high temperature material concepts (seeker window systems thermal protection systems, nose tip technology)			
<i>FY 2024 Plans:</i> - Continue NanoSat Testbed Initiative: Commence next series of experimentation focused on improved engagement management techniques - Continue High Temperature Seeker Window Assessment: Mature and evaluate seeker windows that support existing and future missions			
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Decrease from FY 2023 to FY 2024 reflects the FY 2023 Congressional add.			
Accomplishments/Planned Programs Subtotals	50.439	84.523	20.698

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603176C: <i>Advanced Concepts and Performance Assessment</i>	39.678	39.737	17.825	-	17.825	18.301	18.752	19.134	19.596	Continuing	Continuing
• 0604181C: <i>Hypersonic Defense</i>	281.886	517.977	208.997	-	208.997	218.939	294.326	366.951	644.996	Continuing	Continuing

Remarks

D. Acquisition Strategy

The acquisition strategy to conduct technology development agreements consists of partnering with accredited universities, small businesses, and nonprofit organizations. MDA awards competitive procurements via the MDA Innovation, Science, and Technology Broad Agency Announcement and the Small Business Innovative Research and the Small Business Technology Transfer program.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603180C / <i>Advanced Research</i>				Project (Number/Name) MD40 / <i>Program-Wide Support</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	5.142	0.831	0.800	0.763	-	0.763	0.793	0.912	0.934	1.046	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	2,974.321	209.004	195.216	220.311	-	220.311	239.705	334.977	384.992	292.629	Continuing	Continuing
MD07: THAAD	2,391.045	182.790	176.543	199.440	-	199.440	217.374	308.369	355.866	265.247	Continuing	Continuing
MC07: Cyber Operations	44.518	11.816	10.555	12.140	-	12.140	12.782	12.135	12.553	13.437	Continuing	Continuing
MD06: Patriot Advanced Capability-3 (PAC-3)	410.452	0.844	1.211	0.900	-	0.900	0.922	0.938	0.952	0.967	Continuing	Continuing
MD40: Program-Wide Support	128.306	13.554	6.907	7.831	-	7.831	8.627	13.535	15.621	12.978	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Increase from FY 2023 to FY 2024 provides funding for systems engineering and integration analysis in support of the Full THAAD/Missile Segment Enhancement (MSE) Integration capability and fielding of THAAD System Build 4.0 to all THAAD batteries.

A. Mission Description and Budget Item Justification

The Ballistic Missile Defense Terminal Defense Segment provides vital forward-deployable capabilities to support regional defensive Missile Defense System operations. The Terminal High Altitude Area Defense (THAAD) system provides Combatant Commands a globally-transportable, rapidly-deployable capability to intercept and destroy short-range, medium-range, and limited intermediate-range missile threats inside or outside the atmosphere during terminal phase of flight. This Program Element investigates concepts and continues the development and integration of multiple, independent THAAD system upgrades to improve reliability, availability and readiness, defense planning, and improved capability to engage short-range ballistic missile, medium-range ballistic missile, and limited intermediate-range ballistic missile threats.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	213.382	190.216	196.279	-	196.279
Current President's Budget	209.004	195.216	220.311	-	220.311
Total Adjustments	-4.378	5.000	24.032	-	24.032
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	5.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-4.378	0.000			
• Other Adjustment	0.000	0.000	24.032	-	24.032

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 Program Element (Number/Name) PE 0603881C I Ballistic Missile Defense Terminal Defense Segment
<p><u>Change Summary Explanation</u></p> <p>Congressional Add Details Project: MD07 THAAD</p> <p>FY 2023 Congressional Add Total \$5.0 million - Survivability planning and intercept evaluation tool (\$5 million)</p> <p>The increase in FY 2024 provides funding for systems engineering and integration analysis in support of the Full THAAD/MSE Integration capability and fielding of THAAD System Build 4.0 to all THAAD batteries.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment				Project (Number/Name) MD07 / THAAD			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD07: THAAD	2,391.045	182.790	176.543	199.440	-	199.440	217.374	308.369	355.866	265.247	Continuing	Continuing
Quantity of RDT&E Articles	50	-	-	-	-	-	-	-	-	-		
Note Increase from FY 2023 to FY 2024 provides funding for systems engineering and integration analysis in support of the Full THAAD/Missile Segment Enhancement (MSE) Integration capability and fielding of THAAD System Build 4.0 to all THAAD batteries.												
A. Mission Description and Budget Item Justification The Terminal High Altitude Area Defense (THAAD) system provides a capability to intercept and destroy short-range, medium-range, and limited intermediate-range missile threats inside or outside the atmosphere during the terminal phase of flight. THAAD continues the development and integration of multiple, independent software upgrades to improve reliability, availability and readiness, defense planning, and improved capability to engage Short-Range Ballistic Missile (SRBM), Medium-Range Ballistic Missile (MRBM), and limited Intermediate-Range Ballistic Missile (IRBM) threats. THAAD Development continues the development and integration of multiple, independent system builds to deliver enhanced system capabilities and expand the defense of allies and deployed forces from short-to-intermediate-range threats. Program Operations provides strategic planning, program integration, cost estimating, contracting, financial management, internal reviews and audits, earned-value management and program assessments for the THAAD Program Office. Project Redwood details are provided at a Higher Classification reported in accordance with Title 10, United States Code, Section 119 (a)(1) in the Special Access Program Annual Report to Congress. THAAD Program Support provides support for communications and interoperability efforts to operate on multiple networks and safety and mission assurance efforts in support of the Materiel Release process.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024	
Title: Terminal High Altitude Area Defense (THAAD) Development Articles:									123.174	113.569	137.376	
									-	-	-	
Description: The THAAD Development program continues the development and integration of multiple, independent system builds to deliver enhanced system capabilities and expand the defense of allies and deployed forces from short-to-intermediate-range threats.												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>System Build 4.0: THAAD/MSE Integration Part 1 Joint Emerging Operational Need (JEON) (Completed in 2Q FY 2022)</p> <ul style="list-style-type: none"> - Initial requirements to integrate MSE launchers and missiles into the THAAD weapon system enabling a more tightly integrated upper/lower tier defensive capability in support of JEON. - Improved capability to engage SRBM, MRBM and IRBM threats capable of creating complex scenes. - Expanded requirements for THAAD Electronic Protection/Objective Debris Mitigation to provide radar enhancements improving performance against adverse environments. <p>System Build 4.1: Global Materiel Release Updates for Expanded THAAD:</p> <ul style="list-style-type: none"> - To align THAAD System Builds with the Missile Defense System Phased Implementation Plan, capabilities previously included in TH 4.1 have been integrated in TH 5.0. <p>System Build 5.0: THAAD Updates to Maintain Mission Assurance (Development scheduled to complete in 2Q FY 2025)</p> <ul style="list-style-type: none"> - Interface Change Proposal: Implements necessary Link-16 software interface changes to align with Missile Defense System interoperability. - Maintenance Updates: Provides required maintenance updates and implements deferred content from accelerated JEON fielding timelines. - MSE Safety Integration: Integrates additional MSE safety improvements and the ability to manually emplace a MSE Launcher. - External Integration: Project Manager for Short and Intermediate Effectors for Layered Defense (PM SHIELD) integration and support. - Configuration 3 system Integration and Cyber Modernization: Updates THAAD weapon system to integrate new hardware addressing obsolescence, cyber vulnerabilities and various supportability issues to ensure continuity of Authority to Operate (ATO) approvals. - THAAD Radio Frequency (RF) Remote Launcher: Delivers the capability to increase the defended area footprint of a single THAAD Battery by enabling RF communications from the THAAD Fire Control and Communication (TFCC) to Remoted THAAD launchers. - Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) Radar: Integrates latest AN/TPY-2 radar software (CX 6.0) into THAAD weapon system which ensures system functionality and interoperability providing the capability to track and discriminate evolving threats. - Assured Position Navigation and Timing (APNT): Implement protective measures that increase assurance of reliable Position Navigation and Timing (PNT) data. APNT supports a Department of Defense mandate to ensure the integrity and availability of PNT data for the THAAD weapon system. - Remote Workstation: External TFCC hardware and software connectivity allowing for the capability to remote from the TFCC tactical shelter to a remote location. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> - Dual Monitor: Integrate Dual Monitor capabilities for the ability to provide human factor improvements through additional monitor viewing space to be utilized within the TFCC and in support of Remote Workstation capability to support external Tactical Operation Centers (TOCs) and other external Remote Workstations. - Architecture Improvements: Improvements in Software and Hardware Architecture to increase modularity, interoperability and reduce obsolete software and architecture structures. - Common Planner: Provides a common force operations planning capability with the objective of achieving a common software baseline across all current THAAD force operations planning platforms. <p>System Build 6.0: Full THAAD/MSE Integration (Development scheduled to complete in 4Q FY 2027)</p> <ul style="list-style-type: none"> - Full THAAD/MSE Integration. - THAAD MSE Remote Launchers. - Updated Ballistic Missile Threat Space and Represented Threats for THAAD Engagements. - External Integration: PM SHIELD integration and support. <p>Recurring efforts include:</p> <ul style="list-style-type: none"> - Support element Models and Simulations (M&S) related activities, to include Verification, Validation and Accreditation (VV&A) and Continuous Digital Assessment on the path of accredited models and simulations for Missile Defense System assessment. - Support M&S related activities in element and Missile Defense System test events in the approved Integrated Master Test Plan such as requirements, design, development, and VV&A. - Design, develop, test, and field the releases of THAAD system software to ensure continued performance and operation of fielded batteries. - Support laboratory assets and equipment to enable future development, and to isolate, identify, and remedy root causes of equipment and software deficiencies identified by the warfighter. - Perform requirements development, engineering analysis, and performance verification for THAAD development and Missile Defense System integration to ensure THAAD compliance with the Missile Defense System Specification, Missile Defense System Description Document, and Master Integration Plan. - Participate in Missile Defense Agency (MDA) and Army studies to determine the architecture and integration of the THAAD Weapon system into the Integrated Air and Missile Defense Battle Command System (IBCS). - Provide and coordinate analysis, studies and papers to support the resolution of issues and concerns with the integration of the THAAD weapon system into the future Army IBCS architecture. - Perform Independent Verification and Validation (IV&V) of software and software assurance risk report. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
Specific and/or unique accomplishments to each FY are as follows:			
<p>FY 2023 Plans: Congressional Add: Survivability planning and intercept evaluation tool (\$5 million)</p> <p>System Build 5.0 Provides for development and integration efforts to include:</p> <ul style="list-style-type: none"> - Interface Change Proposal: Implements necessary Link-16 software interface changes to align with Missile Defense System interoperability. - Maintenance Updates: Provides required maintenance updates and implements deferred content from accelerated JEON fielding timelines. - MSE Safety Integration: Integrates additional MSE safety improvements and the ability to manually emplace MSE Launcher. - External Integration: PM SHIELD integration and support. - Configuration 3 system Integration and Cyber Modernization: Updates THAAD weapon system to integrate new hardware addressing obsolescence, cyber vulnerabilities and various supportability issues to ensure continuity of ATO approvals. - THAAD RF Remote Launcher: Delivers the capability to increase the defended area footprint of a single THAAD Battery by enabling RF communications from the TFCC to Remoted THAAD launchers. - AN/TPY-2 Radar: Integrates latest AN/TPY-2 radar software (CX 6.0) into THAAD weapon system which ensures system functionality and interoperability providing the capability to track and discriminate evolving threats. - APNT: Implement protective measures that increase assurance of reliable PNT data. APNT supports a Department of Defense mandate to ensure the integrity and availability of PNT data for the THAAD weapon system. - Remote Workstation: External TFCC hardware and software connectivity allowing for the capability to remote from the TFCC tactical shelter to a remote location. - Dual Monitor: Integrate Dual Monitor capabilities for the ability to provide human factor improvements through additional monitor viewing space to be utilized within the TFCC and in support of Remote Workstation capability to support external TOCs and other external Remote Workstations. - Architecture Improvements: Improvements in Software and Hardware Architecture to increase modularity, interoperability and reduce obsolete software and architecture structures. - Common Planner: Provides a common force operations planning capability with the objective of achieving a common software baseline across all current THAAD force operations planning platforms. <p>FY 2024 Plans: System Build 4.0 - Field System Build 4.0 (4.0 Global) to all THAAD batteries</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>System Build 5.0</p> <p>Provides for development and integration efforts to include:</p> <ul style="list-style-type: none"> - Interface Change Proposal: Implements necessary Link-16 software interface changes to align with Missile Defense System interoperability. - Maintenance Updates: Provides required maintenance updates and implements deferred content from accelerated JEON fielding timelines. - MSE Safety Integration: Integrates additional MSE safety improvements and the ability to manually emplace MSE Launcher. - External Integration: PM SHIELD integration and support. - Configuration 3 system Integration and Cyber Modernization: Updates THAAD weapon system to integrate new hardware addressing obsolescence, cyber vulnerabilities and various supportability issues to ensure continuity of ATO approvals. - THAAD RF Remote Launcher: Delivers the capability to increase the defended area footprint of a single THAAD Battery by enabling RF communications from the TFCC to Remoted THAAD launchers. - AN/TPY-2 Radar: Integrates latest AN/TPY-2 radar software (CX 6.0) into THAAD weapon system which ensures system functionality and interoperability providing the capability to track and discriminate evolving threats. - APNT: Implement protective measures that increase assurance of reliable PNT data. APNT supports a Department of Defense mandate to ensure the integrity and availability of PNT data for the THAAD weapon system. - Remote Workstation: External TFCC hardware and software connectivity allowing for the capability to remote from the TFCC tactical shelter to a remote location. - Dual Monitor: Integrate Dual Monitor capabilities for the ability to provide human factor improvements through additional monitor viewing space to be utilized within the TFCC and in support of Remote Workstation capability to support external TOCs and other external Remote Workstations. - Architecture Improvements: Improvements in Software and Hardware Architecture to increase modularity, interoperability and reduce obsolete software and architecture structures. - Common Planner: Provides a common force operations planning capability with the objective of achieving a common software baseline across all current THAAD force operations planning platforms. <p>System Build 6.0</p> <ul style="list-style-type: none"> - Conduct systems engineering and integration analysis in support of the Full THAAD/MSE Integration capability. <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Increase from FY 2023 to FY 2024 provides funding for systems engineering and integration analysis in support of the Full THAAD/MSE Integration capability and fielding of THAAD System Build 4.0 to all THAAD batteries.</p>			
Title: Program Operations		46.036	48.930
			50.732

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
<p align="right">Articles:</p> <p>Description: Program Operations provides strategic planning, program integration, contracting, acquisition, engineering, financial management, internal reviews and audits, and program assessments for the THAAD Program Office.</p> <p>Recurring efforts include:</p> <ul style="list-style-type: none"> -Provide technical and business management support activities to provide Program and Agency Leadership with critical program status and decision quality data. -Ensure THAAD program compliance with internal and external direction, policies, and regulations to deliver critical capability within a consistent and disciplined process. -Conduct internal program reviews to measure program progress against the six MDA approved baselines. -Continue a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management, Manufacturing, Engineering, and Safety in all phases of the system life cycle, throughout the supply chain, and at all levels of assembly emphasizing high yield rates which minimize test and rework costs. -Provide Quality Safety and Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability to ensure high quality products are delivered to the Warfighter. <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: -SEE ABOVE.</p> <p>FY 2024 Plans: -SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A.</p>		-	-	-
<p>Title: Project Redwood- Details at a Higher Classification</p> <p align="right">Articles:</p> <p>Description: This project is reported in accordance with Title 10, United States Code, Section 119 (a)(1) in the Special Access Program (SAP) Annual Report to Congress.</p> <p>FY 2023 Plans:</p>		11.482 -	12.045 -	9.288 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment	Project (Number/Name) MD07 / THAAD		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
-SEE ABOVE.				
FY 2024 Plans: -SEE ABOVE.				
FY 2023 to FY 2024 Increase/Decrease Statement: Further details are reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.				
Title: THAAD Program Support		2.098	1.999	2.044
Articles:		-	-	-
Description: This activity provides support for efforts such as communications and interoperability upgrades to operate on joint, service, or allied communications networks. This activity provides support for safety and mission assurance requirements, and support of independent government offices as part of the Materiel Release process.				
Recurring efforts include: - Interoperability development and maintenance to ensure the weapon system is authorized to operate on joint, service, or allied communications networks. - Safety confirmation and verification testing, preparation and approvals of System Safety Risk Assessments, issuance of hazard classifications and safety releases, insensitive munitions approvals and waivers, and independent oversight and support in the areas of reliability, availability, and maintainability and quality assurance.				
Specific and/or unique accomplishments to each FY are as follows:				
FY 2023 Plans: -SEE ABOVE.				
FY 2024 Plans: -SEE ABOVE.				
FY 2023 to FY 2024 Increase/Decrease Statement: N/A.				
Accomplishments/Planned Programs Subtotals		182.790	176.543	199.440

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency								Date: March 2023			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>				Project (Number/Name) MD07 / <i>THAAD</i>			

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0208866C: MD07: <i>THAAD O&M</i>	85.557	86.945	89.297	-	89.297	91.789	93.995	96.024	97.945	Continuing	Continuing
• 0208866C: MD07: <i>THAAD Procurement</i>	380.722	239.994	216.782	-	216.782	447.080	475.739	643.513	656.384	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing
• 0604876C: <i>Ballistic Missile Defense Terminal Defense Segment Test</i>	32.697	69.762	47.577	-	47.577	65.379	66.735	94.369	34.228	Continuing	Continuing

Remarks

D. Acquisition Strategy

The THAAD program awards Task Orders on the Advanced Capability Development (ACD) Indefinite Delivery Indefinite Quantity (IDIQ) contract for THAAD development. The ACD contract is comprised of seven separate task orders with varying contract types such as firm fixed price, fixed price incentive firm, cost plus incentive fee, and cost plus fixed fee. The discrete task orders allow management and tracking of development work.

THAAD also utilizes other contracts with industry as well as agreements with other U.S. Government organizations in order to develop, test and upgrade the THAAD Weapon system.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)						Project (Number/Name)			
0400 / 4						PE 0603881C / Ballistic Missile Defense Terminal Defense Segment						MD07 / THAAD			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Terminal High Altitude Area Defense (THAAD) Development - Advanced Capability Development	SS/IDIQ	LOCKHEED MARTIN CORPORATION : AL	1,032.611	70.276	Nov 2021	52.093	Nov 2022	83.152	Nov 2023	-		83.152	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - MDA Program Support	MIPR	Missile Defense Agency (MDA) : Various	15.386	0.000		0.000		0.000		-		0.000	0.000	15.386	15.386
Terminal High Altitude Area Defense (THAAD) Development - Requirements and Design	C/CPAF	Boeing : AL	24.888	5.509	Dec 2021	7.278	Dec 2022	5.665	Dec 2023	-		5.665	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Software Development	MIPR	Various : Various	0.000	17.631	Nov 2021	13.079	Nov 2022	14.129	Nov 2023	-		14.129	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Software Support (Prior)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	14.147	0.000		0.000		0.000		-		0.000	0.000	14.147	14.147
Terminal High Altitude Area Defense (THAAD) Development - THAAD Radar Improvements	SS/CPAF	Raytheon : MA	10.000	0.000		0.000		0.000		-		0.000	0.000	10.000	10.000
Terminal High Altitude Area Defense (THAAD) Development - Verification and Assessment	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : AL	18.935	0.635	Nov 2021	0.270	Nov 2022	0.681	Nov 2023	-		0.681	Continuing	Continuing	Continuing
JEON - Advanced Capability Development	SS/IDIQ	Lockheed Martin : Various	177.889	0.000		0.000		0.000		-		0.000	0.000	177.889	177.889
JEON - MDA Program Support	Various	MDA : Huntsville, AL	0.509	0.000		0.000		0.000		-		0.000	0.000	0.509	0.509

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment				Project (Number/Name) MD07 / THAAD					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 - OGA JEON Support (GOVT)	MIPR	US Army Tank Automotive Research, Development, and Engineering Center (TARDEC), Army Test and Evaluation Command (ATEC) : Warren, MI / Huntsville, AL	19.359	0.000		0.000		0.000		-		0.000	0.000	19.359	19.359
THAAD Layered Homeland Defense - THAAD Layered Homeland Defense	Various	Lockheed Martin / U.S. Army Combat Capabilities Development Command (CCDC) : Sunnyvale, CA / Huntsville, AL	35.059	0.000		0.000		0.000		-		0.000	0.000	35.059	35.059
Subtotal			1,348.783	94.051		72.720		103.627		-		103.627	Continuing	Continuing	N/A
Remarks N/A.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Terminal High Altitude Area Defense (THAAD) Development - IT Program Support	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	15.940	2.686	Nov 2021	2.853	Nov 2022	2.949	Nov 2023	-		2.949	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Models & Simulations	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT	297.917	23.760	Nov 2021	28.782	Nov 2022	26.494	Nov 2023	-		26.494	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>						Project (Number/Name) MD07 / <i>THAAD</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		COMMAND (CCDC) : AL													
Terminal High Altitude Area Defense (THAAD) Development - Software IV&V	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	4.503	2.677	Nov 2021	4.214	Nov 2022	4.306	Nov 2023	-		4.306	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Survivability Planning / Intercept Evaluation	MIPR	TBD : Various	0.000	0.000		5.000	Apr 2023	0.000		-		0.000	0.000	5.000	5.000
Program Operations - Civilian Salaries	Allot	MDA : AL	0.000	22.855	Oct 2021	23.386	Oct 2022	24.169	Oct 2023	-		24.169	Continuing	Continuing	Continuing
Program Operations - Contractor Support Service (Prior Year)	C/CPFF	Various : Various	427.397	0.000		0.000		0.000		-		0.000	0.000	427.397	427.397
Program Operations - Contractor Support Services (Missile Defense Engineering)	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : AL	0.000	9.443	Nov 2021	9.644	Nov 2022	10.119	Nov 2023	-		10.119	Continuing	Continuing	Continuing
Program Operations - Contractor Support Services (Quality, Safety, & Mission Assurance)	C/CPFF	AI SOLUTIONS, INC. : AL	0.000	1.166	Nov 2021	1.297	Nov 2022	1.343	Nov 2023	-		1.343	Continuing	Continuing	Continuing
Program Operations - Contractor Support Services (Various)	C/CPFF	Various : Various	0.000	0.721	Nov 2021	1.804	Nov 2022	1.695	Nov 2023	-		1.695	Continuing	Continuing	Continuing
Program Operations - Program Operations (CCDC)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	0.000	4.613	Nov 2021	4.908	Nov 2022	5.006	Nov 2023	-		5.006	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>						Project (Number/Name) MD07 / <i>THAAD</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - Program Operations (FFRDC)	MIPR	DOD - USA - COMMUNICATIONS ELECTRONICS COMMAND (CECOM) : MD	0.000	3.277	Nov 2021	2.309	Nov 2022	2.962	Nov 2023	-		2.962	Continuing	Continuing	Continuing
Program Operations - Program Operations (IT Support)	C/CPFF	Various : Various	0.000	0.282	Nov 2021	0.516	Nov 2022	0.508	Nov 2023	-		0.508	Continuing	Continuing	Continuing
Program Operations - Travel	Allot	Various : Various	0.000	0.644	Nov 2021	1.040	Nov 2022	1.132	Nov 2023	-		1.132	Continuing	Continuing	Continuing
Project Redwood- Details at a Higher Classification - Special Programs	SS/FP	Various : Various	122.344	11.482	Nov 2021	12.045	Nov 2022	9.288	Nov 2023	-		9.288	Continuing	Continuing	Continuing
THAAD Program Support - Mission Support	MIPR	ATEC / SMDC / CCDC / MDA : WSMR, NM / Huntsville, AL	36.982	0.000		0.000		0.000		-		0.000	0.000	36.982	36.982
THAAD Program Support - Mission Support (CCDC)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	0.000	1.030	Nov 2021	1.146	Nov 2022	1.199	Nov 2023	-		1.199	Continuing	Continuing	Continuing
THAAD Program Support - Mission Support (Prime)	SS/IDIQ	LOCKHEED MARTIN CORPORATION : Various	0.600	0.000		0.000		0.000		-		0.000	0.000	0.600	0.600
THAAD Program Support - Mission Support (Various)	MIPR	Various : Various	0.000	1.068	Dec 2021	0.853	Dec 2022	0.845	Dec 2023	-		0.845	Continuing	Continuing	Continuing
THAAD Program Support - Prior year no longer funded in the FYDP	Various	Various : Various	136.579	0.000		0.000		0.000		-		0.000	0.000	136.579	136.579
Subtotal			1,042.262	85.704		99.797		92.015		-		92.015	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023		
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>				Project (Number/Name) MD07 / <i>THAAD</i>				

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Remarks N/A															

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - Contractor Support Services (Various)	C/CPFF	Various : Various	0.000	3.035	Nov 2021	4.026	Nov 2022	3.798	Nov 2023	-		3.798	Continuing	Continuing	Continuing
Subtotal			0.000	3.035		4.026		3.798		-		3.798	Continuing	Continuing	N/A
Remarks N/A															

			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			2,391.045	182.790		176.543		199.440		-		199.440	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023														
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment										Project (Number/Name) MD07 / THAAD									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
THAAD System Build 4.0 - THAAD/Missile Segment Enhancement (MSE) Integration (JEON) Formal Qualification Testing (FQT)										▲																			
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance Incremental Engineering Technical Review (IETR) #1													▲																
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance IETR #2														△															
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance Formal Qualification Testing IETR #3															△														
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance Incremental Engineering Technical Review (IETR) #4																△													
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance FQT																		△											
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #1																		△											
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #2																			△										
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #3																				△									
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #4																					△								
THAAD System Build 6.0 - Full THAAD/MSE Integration FQT																							△						

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
THAAD System Build 4.0 - THAAD/Missile Segment Enhancement (MSE) Integration (JEON) Formal Qualification Testing (FQT)	2	2022	2	2022
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance Incremental Engineering Technical Review (IETR) #1	1	2023	1	2023
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance IETR #2	2	2023	2	2023
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance Formal Qualification Testing IETR #3	4	2023	4	2023
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance Incremental Engineering Technical Review (IETR) #4	2	2024	2	2024
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance FQT	2	2025	2	2025
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #1	3	2025	3	2025
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #2	1	2026	1	2026
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #3	3	2026	3	2026
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #4	1	2027	1	2027
THAAD System Build 6.0 - Full THAAD/MSE Integration FQT	4	2027	4	2027

Note

Incremental Engineering Technical Review (IETR): A formal milestone review held at the end of each Iterative Phase to review delivered capability and approve entry/exit criteria required for previous and subsequent Iterative Phase(s). The IETR may include Weapon System Component or System level reviews. The IETR will review material in alignment with approved Technical Review Plan (TRP) to include, but not limited to, the applicable content for the following: Cost / Schedule Review, System Requirements Review (SRR) ETR requirements evaluation, Preliminary Design Review (PDR) ETR requirements evaluation, Critical Design Review (CDR) ETR requirements evaluation, Test Results review, Requirements trace review, Code Status review, Risk/Issue review, Objective Evidence/Justification review, Test Readiness Review, and Approved Documentation Review.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment				Project (Number/Name) MC07 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC07: Cyber Operations	44.518	11.816	10.555	12.140	-	12.140	12.782	12.135	12.553	13.437	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note												
Increase from FY 2023 to FY 2024 provides additional funding for System Build 5.0 cybersecurity and infrastructure updates to improve the Terminal High Altitude Area Defense (THAAD) cyber posture required to ensure continuity of Authority to Operate (ATO) approvals and compliance with Department of Defense (DoD) Cybersecurity Requirements.												
A. Mission Description and Budget Item Justification												
Cyber Operations sustain the Missile Defense Agency (MDA) Risk Management Framework (RMF) and Controls Validation Testing (CVT) activities; analysis of validation results, risk assessments; reviews of proposed Program Manager/Information Assurance Manager Plans of Action and Milestones for MDA THAAD mission systems; and supports THAAD authorizations to operate in the Missile Defense System. Development efforts involve robust cybersecurity for both offense and defense to address the advanced threat.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024	
Title: Network / System Certification and Accreditation (C&A) Articles:									11.816	10.555	12.140	
									-	-	-	
Description: Funding in this project sustains MDA RMF and CVT activities, analysis of validation results, risk assessments, monitoring and tracking of cybersecurity mitigations, and all other activities necessary to comply with the Federal Information Security Management Act. Recurring efforts include: - Conduct cybersecurity/information assurance engineering and architecture planning for THAAD information technology systems. - Develop and test cybersecurity/information assurance control measures for THAAD systems. - Develop THAAD RMF for DoD Information Technology Certification and accreditation packages. - Support CVT of THAAD mission, test, and training systems. - Develop Plan of Action and Milestones to resource and remediate information assurance deficiencies. - Conduct annual information assurance reviews on the THAAD enclaves to assess compliance in implementing and maintaining Information Assurance (IA) controls. - Perform Information Assurance Vulnerability Alert to mitigate potential system vulnerabilities. - Update THAAD software and hardware to ensure compliance with DoD Weapon System Information Assurance Programs. - Continue THAAD Weapon System software development efforts consistent with DoD cybersecurity requirements.												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>				Project (Number/Name) MC07 / <i>Cyber Operations</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2022	FY 2023	FY 2024
<p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: -SEE ABOVE.</p> <p>FY 2024 Plans: -SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides additional funding for System Build 5.0 cybersecurity and infrastructure updates to improve the Terminal High Altitude Area Defense (THAAD) cyber posture required to ensure continuity of Authority to Operate (ATO) approvals and compliance with Department of Defense (DoD) Cybersecurity Requirements.</p>												
Accomplishments/Planned Programs Subtotals										11.816	10.555	12.140
C. Other Program Funding Summary (\$ in Millions)												
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>	
• 0208866C: MD07: THAAD O&M	85.557	86.945	89.297	-	89.297	91.789	93.995	96.024	97.945	Continuing	Continuing	
• 0208866C: MD07: THAAD Procurement	380.722	239.994	216.782	-	216.782	447.080	475.739	643.513	656.384	Continuing	Continuing	
• 0604876C: Ballistic Missile Defense Terminal Defense Segment Test	32.697	69.762	47.577	-	47.577	65.379	66.735	94.369	34.228	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
<p>The THAAD program awards Task Orders on the Advanced Capability Development (ACD) Indefinite Delivery Indefinite Quantity (IDIQ) contract for THAAD development. The ACD contract is comprised of seven separate task orders with varying contract types such as firm fixed price, fixed price incentive firm, cost plus incentive fee, and cost plus fixed fee. The discrete task orders allow management and tracking of development work.</p> <p>THAAD also utilizes other contracts with industry as well as agreements with other U.S. Government organizations in order to develop, test and upgrade the THAAD Weapon system.</p>												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment				Project (Number/Name) MC07 / Cyber Operations					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - Cybersecurity Engineering	SS/IDIQ	LOCKHEED MARTIN CORPORATION : AL	0.000	9.521	Nov 2021	7.526	Nov 2022	9.246	Nov 2023	-		9.246	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Mayhem Cybersecurity Tool	MIPR	DOD - USA - ARMY CONTRACTING COMMAND (ACC) PICATINNY ARSENAL (PICA) : NJ	0.000	0.175	Nov 2021	0.115	Nov 2022	0.115	Nov 2023	-		0.115	Continuing	Continuing	Continuing
Subtotal			0.000	9.696		7.641		9.361		-		9.361	Continuing	Continuing	N/A
Remarks N/A															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services	C/CPFF	Various : Various	6.379	0.000		0.000		0.000		-		0.000	0.000	6.379	6.379
Network / System Certification and Accreditation (C&A) - Contract Support Services	C/CPFF	Various : Various	0.000	0.460	Nov 2021	1.237	Nov 2022	1.628	Nov 2023	-		1.628	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Contract Support Services (CHS)	C/CPFF	SYSTEM HIGH CORPORATION : VA	0.000	1.106	Nov 2021	0.000		0.000		-		0.000	0.000	1.106	1.106

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>						Project (Number/Name) MC07 / <i>Cyber Operations</i>			

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - Cybersecurity Engineering	SS/IDIQ	LOCKHEED MARTIN CORPORATION : Various	38.139	0.000		0.000		0.000		-		0.000	0.000	38.139	38.139
Network / System Certification and Accreditation (C&A) - Network / System Certification and Accreditation (Various)	Various	Various : Various	0.000	0.554	Oct 2021	1.677	Oct 2022	1.151	Oct 2023	-		1.151	Continuing	Continuing	Continuing
Subtotal			44.518	2.120		2.914		2.779		-		2.779	Continuing	Continuing	N/A

Remarks N/A.															
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	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	44.518	11.816	10.555	12.140	-	12.140	Continuing	Continuing	N/A

Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.									
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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023															
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment										Project (Number/Name) MC07 / Cyber Operations										
Significant Event Complete ▲					Milestone Decision Complete ★					Element Test Complete ◆					System Level Test Complete ●					Complete Activity ◆										
Significant Event Planned △					Milestone Decision Planned ☆					Element Test Planned ◇					System Level Test Planned ○					Planned Activity ◇										
										FY 2022		FY 2023			FY 2024			FY 2025			FY 2026			FY 2027			FY 2028			
MC07 Completed Cyber Operations										◆	◆	◆	◆	◆																
MC07 Planned Cyber Operations																◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment	Project (Number/Name) MC07 / Cyber Operations	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC07 Completed Cyber Operations	1	2022	1	2023
MC07 Planned Cyber Operations	2	2023	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment				Project (Number/Name) MD06 / Patriot Advanced Capability-3 (PAC-3)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD06: Patriot Advanced Capability-3 (PAC-3)	410.452	0.844	1.211	0.900	-	0.900	0.922	0.938	0.952	0.967	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2023 to FY 2024 reflects a lower requirement for PATRIOT participation in Missile Defense System interoperability integration efforts.

A. Mission Description and Budget Item Justification

PAC-3 is an operational, land-based weapon built upon the proven U.S. Army Phased Array Tracking Radar Intercept on Target (PATRIOT) air and missile defense infrastructure. The Army is responsible for production and further development of the PAC-3 System and Missile Segment Enhancements (MSE); the Missile Defense Agency (MDA) remains responsible for any Missile Defense System interoperability and integration efforts. The Army's Project Manager for Short and Intermediate Effectors for Layered Defense (PM SHIELD) will utilize MDA funds to further the integration of PATRIOT with the Missile Defense System.

Previously this project included PM SHIELD's portion of the Joint Emergent Operational Need (JEON) including:

- 1) PATRIOT launch on remote to utilize Terminal High Altitude Area Defense's (THAAD's) capability to detect and track threat ballistic missiles at longer ranges and utilize MSE's full kinematic capability
- 2) THAAD/MSE Integration Part 1 that integrates MSE launchers and missiles into the THAAD weapon system enabling a more tightly integrated upper/lower tier defensive capability

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

		FY 2022	FY 2023	FY 2024
Title: General Support		0.844	1.211	0.900
Articles:		-	-	-
Description: MDA funds PATRIOT participation in Missile Defense System interoperability integration efforts. Activities support the day-to-day tasking that is leveraged upon PM SHIELD by MDA based on the Transfer and Transition Plan Annex L.				
FY 2023 Plans: -SEE ABOVE.				
FY 2024 Plans: -SEE ABOVE.				
FY 2023 to FY 2024 Increase/Decrease Statement:				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023	
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>				Project (Number/Name) MD06 / <i>Patriot Advanced Capability-3 (PAC-3)</i>			

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2022	FY 2023	FY 2024
Decrease from FY 2023 to FY 2024 reflects a lower requirement for PATRIOT participation in Missile Defense System interoperability integration efforts.												
Accomplishments/Planned Programs Subtotals										0.844	1.211	0.900

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0208866C: MD07: THAAD O&M	85.557	86.945	89.297	-	89.297	91.789	93.995	96.024	97.945	Continuing	Continuing
• 0208866C: MD07: THAAD Procurement	380.722	239.994	216.782	-	216.782	447.080	475.739	643.513	656.384	Continuing	Continuing
• 0604876C: Ballistic Missile Defense Terminal Defense Segment Test	32.697	69.762	47.577	-	47.577	65.379	66.735	94.369	34.228	Continuing	Continuing

Remarks

D. Acquisition Strategy

The planned acquisition strategy for PATRIOT support is to use a support agreement to provide Military Interdepartmental Purchase Requests (MIPR) to the U.S. Army PM SHIELD to further the integration of PATRIOT with the Missile Defense System.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>						Project (Number/Name) MD06 / <i>Patriot Advanced Capability-3 (PAC-3)</i>			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 - PM SHIELD - JEON - PM SHIELD	MIPR	DOD - USA - SHORT AND INTERMEDIATE EFFECTORS FOR LAYERED DEFENSE (SHIELD) : AL	397.585	0.000		0.000		0.000		-		0.000	0.000	397.585	397.585
Subtotal			397.585	0.000		0.000		0.000		-		0.000	0.000	397.585	N/A
Remarks N/A															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
General Support - General Support	MIPR	Various : Various	12.867	0.844	Nov 2021	1.211	Nov 2022	0.900	Nov 2023	-		0.900	Continuing	Continuing	Continuing
Subtotal			12.867	0.844		1.211		0.900		-		0.900	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			410.452	0.844		1.211		0.900		-		0.900	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																	
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment										Project (Number/Name) MD06 / Patriot Advanced Capability-3 (PAC-3)											
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 2022		FY 2023			FY 2024			FY 2025			FY 2026			FY 2027			FY 2028				
MD06 Completed Patriot Advanced Capability-3 (PAC-3) General Support										◆	◆	◆	◆	◆																	
MD06 JEON - PM SHIELD											▲																				
MD06 Planned Patriot Advanced Capability-3 (PAC-3) General Support															◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment	Project (Number/Name) MD06 / Patriot Advanced Capability-3 (PAC-3)	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD06 Completed Patriot Advanced Capability-3 (PAC-3) General Support	1	2022	1	2023
MD06 JEON - PM SHIELD	2	2022	2	2022
MD06 Planned Patriot Advanced Capability-3 (PAC-3) General Support	2	2023	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Te rminal Defense Segment				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program-Wide Support	128.306	13.554	6.907	7.831	-	7.831	8.627	13.535	15.621	12.978	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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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)

Title: Program Wide Support		FY 2022	FY 2023	FY 2024
Articles:		13.554	6.907	7.831
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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		-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p><i>FY 2023 Plans:</i> - SEE ABOVE</p> <p><i>FY 2024 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase from FY 2023 to FY 2024 provides the PWS allocation 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.</p>			
Accomplishments/Planned Programs Subtotals		13.554	6.907
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>						Project (Number/Name) MD40 / <i>Program-Wide Support</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Facilities and Maintenance	MIPR	Various : VA	4.973	7.165	Oct 2021	0.000		0.125	Nov 2023	-		0.125	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Various	Various : Multi: AL, CA, CO, VA	7.109	0.000		0.000		0.000		-		0.000	0.000	7.109	0.000
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	Various : MDA Multi: AL, CO, CA, VA,	18.000	0.700	Oct 2021	0.000		0.000		-		0.000	0.000	18.700	0.000
Program Wide Support - Agency Operations and Support International and Materiel and Readiness	MIPR	Various : Multi: AL, VA, Aust, Japan	3.492	0.000		0.000		0.000		-		0.000	0.000	3.492	0.000
Program Wide Support - Agency Operations and Support Services	C/CPFF	STRATEGIC ALLIANCE BUSINESS GROUP LLC : Multi: AL, CO, VA	89.430	5.666	Oct 2021	5.792	Nov 2022	0.000		-		0.000	0.000	100.888	0.000
Program Wide Support - Agency Operations and Support Services #2	C/CPFF	Various : Multi: AK, AL, CA, CO, HI, NY, VA	0.000	0.018	Nov 2021	0.000		0.502	Nov 2023	-		0.502	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations, Sustainment and GPC	C/CPFF	JACOBS TECHNOLOGY INC. : AK, AL, CA, HI, NY, VA	0.000	0.005	Nov 2021	1.115	Nov 2022	2.254	Nov 2023	-		2.254	Continuing	Continuing	Continuing
Program Wide Support - FFRDC/UARC	C/CPAF	Various : Multi: AL, VA	1.787	0.000		0.000		0.000		-		0.000	0.000	1.787	0.000
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various : Various	3.515	0.000		0.000		0.000		-		0.000	0.000	3.515	0.000
Subtotal			128.306	13.554		6.907		2.881		-		2.881	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023		
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>				Project (Number/Name) MD40 / <i>Program-Wide Support</i>				

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Remarks N/A															

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operation and Support Services	C/CPFF	STRATEGIC ALLIANCE BUSINESS GROUP LLC : TBD	0.000	0.000		0.000		4.950	Nov 2023	-		4.950	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		4.950		-		4.950	Continuing	Continuing	N/A
Remarks N/A															

			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			128.306	13.554		6.907		7.831		-		7.831	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023														
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment										Project (Number/Name) MD40 / Program-Wide Support									
Significant Event Complete ▲					Milestone Decision Complete ★					Element Test Complete ◆					System Level Test Complete ●					Complete Activity ◆									
Significant Event Planned △					Milestone Decision Planned ☆					Element Test Planned ◇					System Level Test Planned ○					Planned Activity ◇									
										FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
MD40 Program-Wide Support										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment	Project (Number/Name) MD40 / Program-Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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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 0603882C <i>I Ballistic Missile Defense Midcourse Defense Segment</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	8,515.583	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing
MD08: <i>Ground Based Midcourse</i>	8,049.802	650.359	637.955	841.566	-	841.566	799.484	847.444	870.177	813.229	Continuing	Continuing
MC08: <i>Cyber Operations</i>	211.015	24.858	27.795	29.035	-	29.035	21.891	22.374	22.831	22.962	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	254.766	32.415	23.268	33.032	-	33.032	31.192	36.816	37.530	39.007	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Increase from FY 2023 to FY 2024 provides for:

- Improved technical solutions in GWS 10 hardware and software development to include a GMD Network and Infrastructure (GNI) that provides a more reliable cybersecurity posture, common components to support weapon system readiness, and a framework that reduces costs of future software development. GWS 10 also provides the ability to support dual NGI concepts. Finally, the increase is due to the ramp up of a natural development cycle from year 1 to year 2.
- Increased Increment 6b and 6c development efforts based on the Ground Test Replan. Extension of the GMD Increment 6b Ground Test Replan inclusive of the fielding of GS8, in parallel with the development of GMD Increment 6c/7 and GMD Increment 10 in order to meet the GMD Flight Test Schedule.
- Change in technical solutions for Phased Array IDT development to enable on-demand communications with interceptors in flight to improve interceptor effectiveness and increase array necessary to support the Next Generation Interceptor.
- Purchasing, manufacturing, and delivery of four additional Capability Enhancement (CE)-I Service Life Extension Program (SLEP) kits to support SLEP upgrades. In addition, the increase in FY 2024 funds the emplacement of four upgraded Ground Based Interceptors. Prior year weapon system service life extension and risk reduction efforts were funded with Congressional Plus-Ups whereas beginning in FY24 these efforts are included in the budget request.
- Civilian labor and contractor program management support increases required to execute the Government's new role as Weapon System Integrator.
- Increase for inflation impacts due to ongoing global events and adjusted labor skill mix required to maintain program level integration efforts.

A. Mission Description and Budget Item Justification

The GMD is an Element of the Missile Defense System that provides combatant commands, including U.S. Northern Command, with a continuously available (24 hours a day, 7 days a week, 365 days a year) capability to defend the Homeland against limited Intercontinental Ballistic Missile attacks. The GMD Element contributes to the Missile Defense System by acquiring, developing, demonstrating, deploying, and sustaining a midcourse weapon system for Homeland Ballistic Missile defense including: currently-deployed GMD capability; integration of the Next Generation Interceptor; improving Warfighter capabilities; and GMD SLEP to improve Warfighter confidence and utilization of the GMD Weapon System. The GMD capability consists of the Ground Based Interceptor, GFC, GMD Communication Network (GCN), IDT, and Ground Launch Support Systems (LSS). Each Ground Based Interceptor delivers a single kill vehicle to defeat threat warheads in space during the midcourse phase of the ballistic trajectory. The GFC consists of fire control nodes in Fort Greely, Alaska (FGA) and Missile Defense Integration and Operations Center, Colorado Springs, Colorado. IDTs are currently located in FGA; Vandenberg Space Force Base, California (VSFB); Eareckson Air Station, Alaska; and Fort Drum, New York. LSS are currently located in FGA and VSFB. The GMD capability leverages integration of Missile Defense System sensors across the globe. GMD development program objectives include improve homeland defensive capability against an advancing threat that is increasing both in number of missiles and complexity; execute flight testing;

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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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 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>
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modernize the GMD weapon system to enhance capability and increase reliability; provide fire control and communications; reliability testing of the current fleet; develop Ground Based Interceptor software enhancements and SLEP that improve reliability, capability, and discrimination; improve GMD Models and Simulations; and provide engineering support for participation in system tests with other Missile Defense System assets. The GMD Development Program also includes development of software and hardware to fully support the integration, testing and operational deployment of the Next Generation Interceptor and the Phased Array IDT.

B. Program Change Summary (\$ in Millions)	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	724.028	667.524	870.817	-	870.817
Current President's Budget	707.632	689.018	903.633	-	903.633
Total Adjustments	-16.396	21.494	32.816	-	32.816
• Congressional General Reductions	0.000	-1.000			
• Congressional Directed Reductions	0.000	-10.706			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	33.200			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-16.396	0.000			
• Other Adjustment	0.000	0.000	32.816	-	32.816

Change Summary Explanation

Project: MD08 Ground Based Midcourse

FY 2023 Congressional Add Total \$33.2 million:

- Ground-based interceptor Service life extension program (\$33.2 million)

FY 2023 Congressional Directed Reductions Total \$10.706 million:

- System engineering (\$8.592 million)

- Program operations growth (\$2.114 million)

Increase in FY 2024 provides for Missile Defense System Increment 10 development and increase for inflation impacts due to ongoing global events, and adjusted labor skill mix required to maintain program level integration efforts.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment				Project (Number/Name) MD08 / Ground Based Midcourse			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD08: Ground Based Midcourse	8,049.802	650.359	637.955	841.566	-	841.566	799.484	847.444	870.177	813.229	Continuing	Continuing
Quantity of RDT&E Articles	63	-	-	-	-	-	-	-	-	-		
Note												
Increase from FY 2023 to FY 2024 provides for: - Improved technical solutions in GWS 10 hardware and software development to include a GMD Network and Infrastructure (GNI) that provides a more reliable cybersecurity posture, common components to support weapon system readiness, and a framework that reduces costs of future software development. GWS 10 also provides the ability to support dual NGI concepts. Finally, the increase is due to the ramp up of a natural development cycle from year 1 to year 2. - Increased Increment 6b and 6c development efforts based on the Ground Test Replan. Extension of the GMD Increment 6b Ground Test Replan inclusive of the fielding of GS8, in parallel with the development of GMD Increment 6c/7 and GMD Increment 10 in order to meet the GMD Flight Test Schedule. - Change in technical solutions for Phased Array IDT development. To enable on-demand communications with interceptors in flight to improve interceptor effectiveness and increase array necessary to support the Next Generation Interceptor. - Purchasing, manufacturing, and delivery of four additional Capability Enhancement (CE)-I Service Life Extension Program (SLEP) kits to support SLEP upgrades. In addition, the increase in FY 2024 funds the emplacement of four upgraded Ground Based Interceptors. Prior year weapon system service life extension and risk reduction efforts were funded with Congressional Plus-Ups whereas beginning in FY24 these efforts are included in the budget request. - Civilian labor and contractor program management support increases required to execute Government's new role as Weapon System Integrator. - Increase for inflation impacts due to ongoing global events and adjusted labor skill mix required to maintain program level integration efforts.												
A. Mission Description and Budget Item Justification												
GMD includes development and delivery of GMD Ground Systems, Ground Based Interceptors, and Systems engineering and Program Management. Development objectives for GMD include: - Improve homeland defensive capability against an advancing threat that is increasing both in number of missiles and complexity - Modernize the GMD Weapon System to provide improved fire control and communications with reduced obsolescence risk for increased availability for the Warfighter - Develop Ground Based Interceptor software enhancements that improve reliability and discrimination - Provide GMD and Ground Based Interceptor SLEP upgrades - Improve GMD Models & Simulations (M&S) - Provide engineering support for participation with other Missile Defense System assets in system tests to demonstrate Missile Defense System capabilities.												
GMD will continue the effort to develop and field improved standalone and integrated Missile Defense System discrimination capabilities which will improve the System's ability to identify lethal reentry vehicles and non-lethal threat objects for enhanced interceptor performance.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024	
Title: Ground Based Interceptor									77.844	68.905	85.448	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p align="right">Articles:</p> <p>Description: The Ground Based Interceptor program develops improvements to enhance reliability, counter emerging threats, and improve system performance for fielded Ground Based Interceptors. The Ground Based Interceptor reliability program conducts the analysis and testing necessary to characterize the reliability and service life of the Ground Based Interceptor Fleet. The data generated from the reliability program allows the Program Office to manage the Ground Based Interceptor fleet, develop fleet maintenance strategies, and extend interceptor service life. MDA engineering uses this data to develop battle simulations for the ground test program. The Warfighter uses this data to develop tactics, techniques, and procedures. The Ground Based Interceptor program has planned software builds to better utilize off-board sensor data providing improved on-board discrimination capabilities to select the most lethal object in the threat scene. Additional Ground Based Interceptor-related activities are conducted in GMD Weapon System/ Ground Based Interceptor Service Life Extension Program (SLEP) R2 Accomplishment.</p> <p>Recurring work:</p> <ul style="list-style-type: none"> -Continue sustaining the capability to develop and test replacement components and to upgrade the Ground Based Interceptor fleet -Continue software development to improve system robustness and reliability -Continue to use the Exo-atmospheric Kill Vehicle (EKV) Hardware-in-the-Loop (HWIL) 10V Chamber for operational analysis of emerging threats, discrimination improvements performance, pre-mission testing and post flight analysis and reconstruction in accordance with the Integrated Master Test Plan to reduce execution risks and gain confidence that capabilities performed as expected -Continue key EKV engineering assessments to document current performance/capability and identify potential risk areas to assess and improve overall kill vehicle (KV) reliability for the Warfighter -Continue collection of Reliability, Availability, Maintainability and Testability data and analysis of performance metrics on the Operational System in order to continuously improve the system for the Warfighter -Continue Probabilistic Risk Assessment (reliability model) development to assess the Ground Based Interceptor design enabling improvements to overall Ground Based Interceptor reliability for Warfighter defense of the homeland -Continue Stockpile Reliability Program (SRP) functional testing of naturally aged Ground Based Interceptor subsystems and components removed from previously fielded Ground Based Interceptors during upgrade/modification to understand performance and aging characteristics in order to establish life limits, achieve Ground Based Interceptor maintenance cost savings, and build Warfighter confidence in aging Ground Based Interceptors -Continue rocket motor propellant studies to extend the service life of limited life items in order to achieve cost savings on Ground Based Interceptor lifecycle maintenance and further build Warfighter confidence in aging Ground Based Interceptors -Continue Ground Based Interceptor Development and Integration Laboratory (GDIL) operations <p>Specific and/or unique accomplishments to each FY are as follows:</p>		-	-
			FY 2024
			-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment	Project (Number/Name) MD08 / Ground Based Midcourse		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
<p>FY 2023 Plans:</p> <p>-Continue transition from DSC to In-service Ground Based Interceptor Fleet contracts to demonstrate and deploy new Homeland Defense Increment Capabilities to establish well-defined Capability-based baselines and an enduring Readiness baseline</p> <p>-Continue developing CE-II EKV software to provide additional mid-term discrimination and homeland threat space updates</p> <p>-Deliver Ground Based Interceptor for FTG-12</p> <p>-Complete second delivery of two additional CE-II Block 1 EKV with Configuration 2 (C2) Boost Vehicle Ground Based Interceptors assembled from spares</p> <p>FY 2024 Plans:</p> <p>-Increase of GDIL operations in support of SLEP activities</p> <p>-Continue CE-II EKV software development, which provides additional discrimination and homeland threat space updates</p> <p>-Begin execution of Ground Test (GT) Re-Plan to include re-phasing of Ground Based Interceptor configuration design verification testing</p> <p>-Continue transition from DSC to In-service Ground Based Interceptor Fleet contracts to demonstrate and deploy new Homeland Defense Increment Capabilities to establish well-defined Capability-based baselines and an enduring Readiness baseline</p> <p>-Increase SRP activities as additional components are made available from SLEP</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Increase from FY 2023 to FY 2024 provides increased activity in lab support, System engineering, and Program Management due to GT Replan driven re-phasing of Ground Based Interceptor configuration design verification testing. The increase also provides In-Service Fleet future contract personnel shadowing DSC Contract personnel training during transition to new contract. In addition, the FY 2023 budget reflects adjustment for prior year carryover.</p>				
<p>Title: Ground Systems & Fire Control</p> <p>Articles:</p> <p>Description: The GMD GS enables control and operation of the GMD Element as part of the Missile Defense System. GS consists of the GFC, GMD Communication Network (GCN), IFICS Data Terminal (IDT), and Launch Site Components (silos, silo interface vaults (SIVs)). These components collect and process sensor data, perform mission planning and fire control, command the launch of GMD interceptors, communicate with interceptors in flight, and provide environmental support for GMD interceptors while in a perpetual readiness state. The GNI will expand upon the GCN to provide a common secure platform across all GWS components, improve real-time cyber integration, and improve the operator's ability to detect and respond to cyber events.</p> <p>Recurring work:</p> <p>-Continue implementation of software and hardware updates, improvements and remedies to address weaknesses discovered during testing</p>		253.092 -	155.614 -	335.368 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>-Continue implementation of additional cyber resiliency in GMD systems by developing system level requirements that flow to component level designs, allowing GMD systems to operate in a cyber-contested environment</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <p>-Complete GS Software Build 8 for system level testing to support Missile Defense System Increment 6B.2: Expands battle space; uses Long Range Discrimination Radar (LRDR) / Sea-Based X-Band Radar (SBX) discrimination data to inform KV of target scene; provides mixed fleet planning optimizing use of interceptor types</p> <p>-Complete GS Software Build 9 (GS-9): Improves track accuracy; Incorporates space-based kill assessment (SKA); adds advanced discrimination for multiple sensors increasing performance. GS-9 is integrated into GWS 10A as a part of transition from the DSC to the GWS contract</p> <p>-Continue GWS Build 10A to support Missile Defense System Increment 6C/7: Software re-architecture, Implementation of DEVSECOPS, GS-9 Improvements and the development of the PA-IDT.</p> <p>-Initiate GWS Build 10B to support Missile Defense System Increment 10: Next Generation Interceptor flight tests, Initial Next Generation Interceptor operational support, weapon system improvements for PA-IDT, additional threats, Interceptor Mixed Fleet Planning, and discrimination improvements</p> <p>-Initiate design, development, and deployment of a Test PA-IDT Transportable (PA-IDT-T) Asset to ensure Next Generation Interceptor capabilities can be sufficiently tested to support an Next Generation Interceptor production decision, including fully testing both the GMD and Next Generation Interceptor capabilities to provide on-demand communications, last scene data, and post-intercept assessment for increased reliability and warfighter confidence</p> <p>FY 2024 Plans:</p> <p>-GS software Build 8 (GS-8) updates and field Missile Defense System Increment 6B.2</p> <p>-Improve KV use of off-board discrimination data and provide mixed fleet planning optimizing use of interceptor types to expand battle space</p> <p>-GS-9 Final Engineering Release / integration into GWS 10A to: Improve track accuracy; Incorporate SKA; add advanced discrimination for multiple sensors increasing performance; implement Missile Defense System Track to fuse data from multiple sensors and provide GMD with improved track accuracy and additional discrimination features</p> <p>-GWS Build 10A to support Missile Defense System Increment 6C/7/8/9: Implement Weapon System improvements to GS-9 to deliver GMD capability to support Ballistic Missile Defense System Track</p> <p>-GWS Build 10B to support Missile Defense System Increment 10: Implementation of DEVSECOPS, support for Next Generation Interceptor flight tests, Next Generation Interceptor operational support, development and weapon system improvements for PA-IDT, additional threats, Interceptor Mixed Fleet Planning, discrimination improvements, and software re-architecture</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment	Project (Number/Name) MD08 / Ground Based Midcourse		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
<p>-Incorporation of dual path Next Generation Interceptor designs into the GMD Weapon System to support Flight Testing of a selected Next Generation Interceptor Design</p> <p>-Complete development, testing and integration of Fort Greely, Alaska (MF)-4 and increase Silo capacity and modernize SIV equipment in existing Silos</p> <p>-Development of the PA IDT antenna to enable on-demand communication with additional interceptors throughout flight with increased frequency of communication events. This two-way communication will enable kill vehicles to provide additional target scene information to GFC enabling enhanced situational awareness for the Warfighter and improved battle management and allow multiple updates to the Next Generation Interceptor regarding the target object map informed by on-the-ground discrimination. This upgrade integrates both Next Generation Interceptor designs into the PA-IDT development and also addresses obsolescence with the current IDT configuration by replacing aged equipment and processors</p> <p>-Development and testing of an integrated GNI that provides a common secure platform across all GWS components, improves real-time cyber integration, and improves the operator's ability to detect and respond to cyber events</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Increase from FY 2023 to FY 2024 provides for:</p> <p>- Improved technical solutions in GWS 10 hardware and software development to include a GMD Network and Infrastructure (GNI) that provides a more reliable cybersecurity posture, common components to support weapon system readiness, and a framework that reduces costs of future software development. GWS 10 also provides the ability to support dual NGI concepts. Finally, the increase is due to the ramp up of a natural development cycle from year 1 to year 2.</p> <p>- Increase is also due to transfer of requirements for modeling and simulation, subcontract management, component-level integration and cyber operations for Ground Weapon System development from the System Engineering and Program Management accomplishment to the Ground Systems and Fire Control accomplishment to more closely align with the effort and the delivered capability.</p> <p>- Increase in Increment 6b and 6c development efforts based on the Ground Test Replan. Extension of the GMD Increment 6b Ground Test Replan inclusive of the fielding of GS8, in parallel with the development of GMD Increment 6c/7 and GMD Increment 10 in order to meet the GMD Flight Test Schedule.</p> <p>- Change in technical solutions for Phased Array IDT development to enable on-demand communications with interceptors in flight to improve interceptor effectiveness and increase array necessary to support the Next Generation Interceptor.</p> <p>- In addition, the FY 2023 budget reflects adjustment for prior year carryover.</p>				
Title: Systems Engineering and Program Management <div>Articles:</div>		266.674 -	331.646 -	310.777 -
Description: GMD Element Engineering consists of GMD Element Systems Engineering, GMD Element Product Engineering, and the GMD Technical Direction Agent (TDA). GMD Element Engineering provides the essential engineering functions for the				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>development, fielding, and sustainment of the GMD Element. GMD Program Management provides the management of GMD development and sustainment activities to ensure content delivery is in line with cost, schedule, and performance objectives.</p> <p>GMD Element Systems Engineering develops and integrates GMD capabilities and products with efficient processes, common tools, and with a digital engineering foundation to defeat the Strategic Missile threat to the United States Homeland. GMD Element Systems Engineering provides key functions and products such as: GMD Element-level performance requirements development and verification; GMD internal and external interface requirements development and verification; GMD Element-level developmental testing analyses; GMD Element-level performance analyses and assessments; GMD Element-level M&S development, integration, verification, and validation; digital engineering infrastructure; GMD software assessments; GMD Element-level technical integration; GMD Engineering Development and Early Integration Lab development, maintenance, and operations; and maintenance of the GMD Technical Baseline.</p> <p>GMD Element Product Engineering delivers sound and integrated engineering and manufacturing processes and products through engineering controls, management, and verification; independent test, analysis, and assessment of failed and high risk events and engineering efforts; hardware and software readiness; and industrial and manufacturing readiness. GMD Element Product Engineering provides key functions and products such as: GMD integrated design; risk, issues, and opportunities management; interface designs; failure review boards; and the maintenance of the GMD Operational Capability Baseline.</p> <p>Missile Defense System Engineering provides architecture analysis, development and flow-down of System-level GMD performance and interface requirements, Missile Defense System integration, System-level requirements verification and validation, and M&S framework support and environmental modeling required for GMD participation in System-level HWIL and digital events that provide data for System-level assessment and capability delivery to the Warfighter.</p> <p>The GMD TDA provides the technical expertise and program execution experience required to offer the MDA independent analysis, unbiased and objective weapon system level-oriented advice on technical issues and product development, and recommendations on technical issues and product development challenges faced in the GMD Program.</p> <p>Program Management provides for prime contractor management of DSC and SITR contract activities to ensure technical content delivery in line with cost, schedule, and performance objectives. The GT re-plan resulted in the extension of the Increment 6B effort on the DSC contract which will be developed in parallel with the Increment 6C/7 and Increment 10 efforts executed on the SITR contract to meet the Next Generation Interceptor Initial Flight Test. This effort includes: program and business management; program administration; subcontract management; technical and testing oversight; quality, safety, and mission assurance; integrated logistics support; and infrastructure to develop, test, and sustainment of the GMD Element.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
Recurring engineering and management efforts include: -Execute GMD Element-level milestone technical reviews -Develop independent assessments for GMD Component technical reviews (e.g., GMD Weapon System, Next Generation Interceptor) -Develop and maintain GMD Element performance requirements -Verify GMD Element performance requirements and interfaces -Maintain GMD performance and interface requirements -Execute GMD Element performance analyses and assessments -Execute GMD Element technical integration -Integrate and deliver GMD models and simulations supporting multiple intended uses -Expand the GMD Digital Engineering infrastructure including the Integrated Digital Data Environment (IDDE) -Execute GMD Element analysis of ground and cyber tests -Execute Software Independent Verification and Validation and Software Assurance -Maintain and expand the GMD DEVSECOPS Software Factory and Ecosystem -Provide engineering, operations, and maintenance for GMD Development and Early Integration Lab Capabilities to conduct risk reduction and analysis for fielding Warfighter capabilities that defend the Homeland -Maintain the GMD Technical Baseline -Maintain GMD risks, issues, and opportunities -Execute GMD discrimination design improvements -Maintain the GMD Operational Capability Baseline -Develop and maintain GMD Interceptor to GMD Weapon System interface designs -Execute Prime Contractor Integrated Logistics Support -Conduct Prime Contractor Quality, Safety and Mission Assurance (QSMA) -Execute Prime Contractor program administration, business management, and subcontract management TDA efforts include: -Offer objective advice on technical issues and product development challenges facing the GMD Program -Facilitate the implementation of consistent software and systems engineering processes -Perform independent evaluation of GMD element/component designs, design maturity, and technical approach and make recommendations on technical issues and alternatives -Provide independent assessment of integrated system performance and mission effectiveness -Identify and assess risks; Evaluate risk mitigation approaches and make recommendations on alternative approaches and prioritization of risk reduction activities			

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> -Conduct special studies to investigate and identify solutions to specific problems that might involve alternate approaches, new architectures, or integration of new activities -Evaluate future mission needs and explore advanced/evolutionary concepts and technologies <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> -Execute GMD Increment 6B assessments and verification -Execute GWS 10A System Requirements Review (SRR) and Preliminary Design Review (PDR) -Execute GWS Incremental Reviews -Initiate and Support Next Generation Interceptors PDRs -Conduct GMD Increment 10 SRR -Conduct Increment 10 GMD Element Design and Technical integration using Digital Engineering to integrate the Next Generation Interceptor to deliver a multi-interceptor GMD Weapon System -Transition, expand, maintain, and operate GMD Engineering Development and Early Integration Lab Capabilities for fielded and future GMD increments including establishing GMD Integration Lab -Plan, manage, and execute transition of GMD activities to align with the GMD Future Acquisition Strategy, in order to maintain and deliver GMD capabilities for Missile Defense System Increment 6B, 6C, 10, and 11 to the Warfighter -Conduct an Independent analysis and assessment of the Next Generation Interceptor programs to support PDRs and the GMD Weapon System to support Increment 6C and 10 Engineering Technical Reviews <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> -Maintain the Technical Baseline for GMD Increment 6B, GMD Increment 6C/7, and GMD Increment 10 -Complete GMD Increment 6B M&S, software independent validation & verification (IV&V)/Assurance, Verification, Performance Assessment, and Technical Integration Activities required for component deliveries -Establish the Operational Capability Baseline for GMD Increment 6B -Execute GMD Increment 6C/7 Incremental Element Reviews, including GMD Increment 6C/7 CDR -Execute GMD Increment 10 Incremental Element Reviews, including GMD Increment 10 PDR -Conduct independent assessments for GWS design development -Conduct independent assessments for Next Generation Interceptor design developments -Develop GMD Interceptor to GMD Weapon System interface requirements and interface designs for GMD Increment 10 considering competing Next Generation Interceptor designs through each Next Generation Interceptor CDR -Continue GMD Increment 10 Technical integration using Digital Engineering to integrate a multi-interceptor GMD Weapon System 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> -Continue GMD technical integration for competing Next Generation Interceptor designs with an integrated GWS -Continue GMD technical integration for a mixed interceptor fleet consisting of a Ground Based Interceptor and considering dual Next Generation Interceptor designs through each Next Generation Interceptor CDR -Expand GMD Increment 10 Government Development and Early Integration Lab Capabilities -Complete GMD Integration Lab initial capability and transition to the Sitr Contractor as a Government owned, Contractor operated facility -Complete GMD Modeling & Simulation Lab transition to the Sitr Contractor as a Contractor owned and operated facility <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects efficiencies in modeling and simulation, Element Systems Engineering, and Software IV&V. This decrease is also due to the movement of requirements for modeling and simulation, subcontract management, component-level integration and cyber operations for Ground Weapon System development from the System Engineering and Program Management accomplishment to the Ground Systems and Fire Control accomplishment to more closely align with the effort and the delivered capability. In addition, development labs and development support for Prime Contractor Integration Lab and Objective Stimulation Framework were transferred from the GMD Midcourse Test PE 0604887C to the GMD Midcourse PE 0603882C.</p>			
<p>Title: Program Operations</p> <p align="right">Articles:</p> <p>Description: Program Operations provides for government management of the GMD program. This effort provides:</p> <ul style="list-style-type: none"> -Technical, business, acquisition, and configuration management and integration activities to ensure the GMD program meets cost, schedule, and performance goals -Ensure program compliance with internal and external direction, policies, and regulations to deliver critical capability within a consistent and disciplined process -Internal Agency program reviews to measure program progress against the six MDA approved baselines -Mission Assurance and Manufacturing engineering Program to include QSMA in all phases of the system life cycle, throughout the supply chain, and at all levels of assembly emphasizing high yield rates which minimize test and rework costs -Sustainment of core infrastructure and unified communications services to accomplish the GMD mission <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Improve Information Technology (IT) systems and infrastructure for digital engineering implementation <p>FY 2024 Plans:</p>		52.749 -	48.590 -
		62.436 -	

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> - Fund Contractor support surge to implement Government as the system integrator - Increase Civilian labor and contractor program management to support the government's role as the Weapon System Integrator <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase from FY 2023 to FY 2024 provides for civilian labor and contractor program management support increases required to execute Government's new role as Weapon System Integrator. Also provides for the escalation/inflation impacts due to ongoing global events, and the increase in adjusted labor skill mix required to maintain program level integration efforts.</p>			
<p><i>Title:</i> GMD Weapon System/GBI Service Life Extension Program (SLEP)</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> The GMD Weapon System / Ground Based Interceptor Service Life Extension Program (SLEP) completes reliability upgrades for existing weapon system and Ground Based Interceptor components, sustains repair capabilities, and performs other activities to sustain the existing Ground Based Interceptor and GMD Weapon System capability.</p> <p>Recurring work: -Continue reliability upgrades on existing Ground Based Interceptor fleet and weapon system components -Continue sustainment of repair capabilities, and other activities to sustain the existing Ground Based Interceptor and GMD Weapon System capability</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p><i>FY 2023 Plans:</i> -Purchase, manufacturing and delivery of remaining EKV Enhanced SLEP Kits -Purchase facility and support equipment required for SLEP activities -Congressional Adds: Ground-based interceptor Service life extension program</p> <p><i>FY 2024 Plans:</i> -Purchase, manufacture, and delivery of four additional Capability Enhancement (CE)-I SLEP kits and emplacement -Continue Ground Based Interceptor emplacements and de-emplacements in support of Ground Based Interceptor SLEP upgrades -Continue executing steady-state Ground Based Interceptor SLEP activities</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase from FY 2023 to FY 2024 accounts for purchasing, manufacturing, and delivery of four additional Capability Enhancement (CE)-I Service Life Extension Program (SLEP) kits to support SLEP upgrades and emplacement of four SLEP</p>		0.000 -	33.200 -
			47.537 -

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
upgrades. Prior year weapon system service life extension and risk reduction efforts were funded with Congressional Plus-Ups, whereas beginning in FY 2024 these efforts are included in the budget request.			
Accomplishments/Planned Programs Subtotals	650.359	637.955	841.566

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0208866C:MD08: <i>GMD Procurement</i>	0.000	11.300	0.000	-	0.000	30.971	36.243	34.833	18.978	Continuing	Continuing
• 0208866C:MD08: <i>Midcourse Defense O&M</i>	156.623	185.564	174.789	-	174.789	178.467	161.429	132.557	206.311	Continuing	Continuing
• 0604874C: <i>Improved Homeland Defense Interceptors</i>	863.364	1,833.357	2,130.838	-	2,130.838	2,110.409	1,444.842	1,239.966	1,015.682	Continuing	Continuing
• 0604887C: <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>	61.424	84.075	41.824	-	41.824	40.284	58.043	123.579	100.278	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Ground-Based Midcourse Defense (GMD) program will continue to execute testing, development, and evolutionary acquisition through incremental development. The Agency acquisition strategy ensures GMD components are upgraded to improve both GMD Component performance and GMD Element performance in order to retain the proven GMD contribution to the integrated Missile Defense System. This acquisition approach reduces obsolescence risk, provides incremental capability improvements, and allows decision makers to make informed trades between cost, schedule, and performance while rapidly delivering improved operational and technological capabilities.

MDA competitively awarded the Development and Sustainment Contract (DSC) to The Boeing Company in December 2011. This contract included development, fielding, test, systems engineering, integration, and configuration management; equipment manufacturing and upgrade; training, operations, and sustainment of the GMD Element and associated support facilities. In January 2018, the DSC was extended with a new period of performance through 1Q FY 2024. The DSC Extension includes supporting test, engineering, software, and performance-based logistics scope. In 2022, the MDA GT Replan resulted in the extension of minimal contract line items to support testing, engineering, hardware and software until December 2024 to complete the delivery of Missile Defense System Increment 6B.2; while performance-based logistics will transition to a new contract after December 2023. The DSC structure breaks out major efforts into separate Contract Line Item Numbers with individual incentives for management insight, accounting, and property accountability.

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<p>MDA implemented a robust Program Board structure allowing more Government insight and decisions into the technical baseline and has changed business processes for greater Government involvement in program decisions consistent with the Government's ownership of the technical baseline. In addition, GMD utilizes Government laboratory modeling and simulation and analysis capabilities to augment the current DSC efforts. These efforts utilize existing, competitively awarded contracts by MDA and Other Government Agencies including Vandenberg Space Force Base (VSFB), CA; MDIOC; U.S. Army Combat Capabilities Development Command Aviation & Missile Center (formerly known as U.S. Army Aviation and Missile Research, Development and engineering Center); and Pacific Missile Range Facility, HI.</p> <p>New GMD Contracts will satisfy future GMD Element requirements beyond DSC's support and Missile Defense System Increment 6B.2. The new contracts initiate and execute concurrently with the DSC and provide for transition periods while the DSC scope is completing to provide continuity of effort. Each of the new contracts are structured to break out major efforts into separate Contract Line Item Numbers with individual incentives for management insight, accounting and property accountability.</p> <p>MDA competitively awarded two best value contracts on March 24, 2021 to Lockheed Martin and Northrop Grumman for technology and product development of Next Generation Interceptor and plans to maintain competition through the CDR in FY 2025 to reduce technical risk, drive industry behavior(s) through retention of a competitive environment throughout early design development activities, secure competitive production pricing, and support the Department's ability to field a system capable of negating the expanded threat, as well as, maximize the likelihood of delivering this critical capability at the earliest possible opportunity.</p> <p>MDA awarded/plans to award sole source contracts to the GMD's Ground Based Interceptor ISF original equipment manufacturers to perform service life extensions and maintain the existing fleet, execute repairs, and develop software. These contracts are intended primarily to ensure fleet viability until replacement interceptors Next Generation Interceptor are fielded. ISF is constrained to the legacy interceptor fleet and its component boosters and kill vehicles. The Boost Vehicle Sustainment Contract was awarded to Northrop Grumman in September 2021. The EKV Sustainment Contract is planned for award to Raytheon Missile Systems in FY 2023. The Ground Based Interceptor Integration and Test Contract is planned for award to Boeing in FY 2024.</p> <p>The GMD Weapons System (GWS) Contract was competitively awarded to Northrop Grumman Systems Corporation in July 2022 to provide design, development, production, product level testing, sustainment planning, maintenance of the current Weapon System components including development to incorporate the Next Generation Interceptor into the GMD Weapon System. The GWS contractor is responsible for developing weapon system solutions, including fire control and communication systems improvements, required to update the legacy system to remain effective while Next Generation Interceptor is under development, as well as, preparing for the seamless introduction of Next Generation Interceptor and other future Missile Defense System capabilities. The GWS contract will update the system interface for the addition of Next Generation Interceptors to the fleet, provide the Warfighter capability to operate the GMD Weapon System with a mixed fleet of Ground Based Interceptors and Next Generation Interceptors, and identify and develop solutions for message exchanges between the GMD Weapon System and in-flight kill vehicles. All of this must be accomplished while maintaining a robust cyber defense network capable of detecting and defending against current and future cybersecurity threats.</p> <p>MDA also competitively awarded a single SITR Contract to provide, along with the Technical Direction Agent, a synergistic approach in executing the GMD Element-level engineering, integration, test, and readiness of the GMD Weapon System, which operates with the current Ground-Based Interceptor and is adding infrastructure for the integration and testing of Next Generation Interceptor. The Systems Integration, Test, and Readiness (SITR) contractor is charged with being the Government's technical partner for day-to-day operation and sustainment of the GMD Weapon System alongside the United States Northern Command Warfighters. While the</p>		

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<p>Government maintains overall system integration responsibilities and authority, the SITR contractor will assume a supporting technical role responsible for ensuring overall GMD integration including physical and logical integration of the GMD Components to include Next Generation Interceptor, GMD Element, and MDA enterprise level integration, planning and execution of all necessary testing to verify and validate requirements compliance.</p> <p>GMD Increment 6C, 10, and 11 will be executed with the SITR and GWS contracts. The SITR Contract was awarded 4Q FY 2022.</p> <p>GMD also uses MDA Consolidated Support contracts for engineering and technical support; studies, analyses, and evaluations; and management and professional services to GMD functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing MDA Consolidated Support contracts and will utilize MDA competitively awarded new contracts to acquire Fiscal Years 2020-2030 Advisory and Assistance Services support.</p> <p>MDA competitively awarded two best value contracts on March 24, 2021 to Lockheed Martin and Northrop Grumman for technology and product development of Next Generation Interceptor and plans to maintain competition through the CDR in FY 2025 to reduce technical risk, drive industry behavior(s) through retention of a competitive environment throughout early design development activities, secure competitive production pricing, and support the Department's ability to field a system capable of negating the expanded threat, as well as, maximize the likelihood of delivering this critical capability at the earliest possible opportunity.</p> <p>The Next Generation Interceptor will be an integrated capability of the greater GMD Element, and will provide a fully qualified, production representative Next Generation Interceptor AUR. Once the Next Generation Interceptor AUR is accepted by the Government, it will be integrated into the GMD Element and supported by the System Engineering, Integration, Test, and Readiness (SITR) Contract while the GWS Contract will support developing the interfaces necessary for the seamless integration of Next Generation Interceptor. The funding for the development of the Next Generation Interceptor is in Program Element 0604874C Improved Homeland Defense Interceptors.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Mi dcourse Defense Segment				Project (Number/Name) MD08 / Ground Based Midcourse					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Ground Based Interceptor - Additional Boosters	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	230.724	7.573	Nov 2021	0.000		0.000		-		0.000	0.000	238.297	0.000
Ground Based Interceptor - All Up Round Development	C/CPIF	Boeing : AL/AK/AZ/ CA/CO/TX/VA	16.965	0.000		0.000		0.000		-		0.000	0.000	16.965	0.000
Ground Based Interceptor - Booster Development	C/CPIF	Boeing : AL/AK/AZ CA/CO/TX/VA	125.000	0.000		0.000		0.000		-		0.000	0.000	125.000	0.000
Ground Based Interceptor - Configuration 2 CBAU Booster Development	C/CPIF	Boeing : AL/AK/AZ CA/CO/TX/VA	54.550	0.000		0.000		0.000		-		0.000	0.000	54.550	0.000
Ground Based Interceptor - EKV Spares	C/CPIF	Boeing : AL/AK/AZ/ CA/CO/TX/VA	8.111	0.000		0.000		0.000		-		0.000	0.000	8.111	0.000
Ground Based Interceptor - Flight Rotations for MDS Testing	C/CPIF	Boeing : AL/AK/AZ/ CA/CO/TX/VA	73.950	0.000		0.000		0.000		-		0.000	0.000	73.950	0.000
Ground Based Interceptor - GBI Parts Testing & Reverse Flow	C/CPIF	Boeing : AL/AK/AZ/ CA/CO/TX/VA	7.203	0.000		0.000		0.000		-		0.000	0.000	7.203	0.000
Ground Based Interceptor - GBI Prime Product Support	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	533.748	0.000		0.000		0.000		-		0.000	0.000	533.748	0.000
Ground Based Interceptor - GBI Relocations & Emplacements	C/CPIF	Boeing : AL/AK/AZ/ CA/CO/TX/VA	17.239	0.000		0.000		0.000		-		0.000	0.000	17.239	0.000
Ground Based Interceptor - Government Reliability Program	MIPR	Various : Various	36.427	0.000		0.000		0.000		-		0.000	0.000	36.427	0.000
Ground Based Interceptor - Integration for Flight Test	C/CPIF	Boeing : AL/AK/AZ/ CA/UT	11.395	3.362	Jan 2022	0.000		0.000		-		0.000	0.000	14.757	0.000
Ground Based Interceptor - Interceptor Manufacturing Support	MIPR	Various : Vanguard, HSV, AL	41.934	0.000		0.000		0.000		-		0.000	0.000	41.934	0.000

UNCLASSIFIED

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Ground Based Interceptor - Interceptors #48-58 (CE-II)	C/CPIF	Boeing : AL/AK/AZ/CA/CO/TX/VA	716.580	0.000		0.000		0.000		-		0.000	0.000	716.580	0.000
Ground Based Interceptor - Logistics and Safety Support	C/CPIF	VENTURI, INC. : Various	4.681	0.286	Jan 2022	0.000		0.000		-		0.000	0.000	4.967	0.000
Ground Based Interceptor - Logistics and Safety Support - Scott AFB	MIPR	DOD - USAF - SCOTT AIR FORCE BASE (SCOTT AFB) : IL	0.000	2.296	Jan 2022	3.217	Jan 2023	0.000		-		0.000	0.000	5.513	0.000
Ground Based Interceptor - Operational Spares	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	28.962	0.000		0.000		0.000		-		0.000	0.000	28.962	0.000
Ground Based Interceptor - Prime Interceptor Manufacturing & Lab Support	C/CPIF	Boeing : AL/AK/AZ/CA/CO/TX/VA	69.227	0.149	Nov 2021	0.000		0.000		-		0.000	0.000	69.376	0.000
Ground Based Interceptor - Prime Reliability Program	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	109.360	0.000		0.000		0.000		-		0.000	0.000	109.360	0.000
Ground Based Interceptor - Software Maintenance & Updates	C/CPIF	Boeing AL/AK/AZ : CA/UT/TBD	156.657	6.877	Nov 2021	0.000		0.000		-		0.000	0.000	163.534	0.000
Ground Based Interceptor - Software Maintenance & Updates - BOEING COMPANY	C/CPIF	BOEING : AL	0.000	0.000		12.530	Nov 2022	1.295	Nov 2023	-		1.295	Continuing	Continuing	Continuing
Ground Based Interceptor - Software Maintenance & Updates - RAYTHEON	C/CPIF	RAYTHEON : Various	0.000	0.000		5.077	Nov 2022	9.477	Nov 2023	-		9.477	Continuing	Continuing	Continuing
Ground Systems & Fire Control - Ft. Greely Comm Center	C/IDIQ	NORTHROP GRUMMAN : AL	0.000	0.200	Nov 2021	5.403	Nov 2022	1.522	Nov 2023	-		1.522	Continuing	Continuing	Continuing
Ground Systems & Fire Control - GS-8 Software & Hardware Development	C/CPIF	Boeing : AL/AK/CA/CO/VA	140.392	16.098	Jan 2022	0.002	Nov 2022	8.210	Nov 2023	-		8.210	Continuing	Continuing	Continuing

UNCLASSIFIED

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Ground Systems & Fire Control - GS-9 Software & Hardware Development	C/CPIF	BOEING : AL/AK/CA/CO/VA/TBD	110.253	26.429	Jan 2022	18.812	Nov 2022	26.808	Nov 2023	-		26.808	Continuing	Continuing	Continuing
Ground Systems & Fire Control - GWS-10A Software & Hardware Development - GWS	C/IDIQ	NORTHROP GRUMMAN : AL	0.000	101.767	Jul 2022	26.787	Nov 2022	162.737	Nov 2023	-		162.737	Continuing	Continuing	Continuing
Ground Systems & Fire Control - GWS-10A Software & Hardware Development - Various	Various	NORTHROP GRUMMAN : AL	7.578	0.278	Jul 2022	0.000		0.000		-		0.000	0.000	7.856	0.000
Ground Systems & Fire Control - GWS-10B Software & Hardware Development - GWS	C/IDIQ	NORTHROP GRUMMAN : AL	0.000	0.000		59.197	Nov 2022	23.484	Nov 2023	-		23.484	Continuing	Continuing	Continuing
Ground Systems & Fire Control - Government Fort Drum IDT	MIPR	MDA/AL : /VA/NY	0.576	0.000		0.000		0.000		-		0.000	0.000	0.576	0.000
Ground Systems & Fire Control - Government Missile Field 4 (20 Silos)	MIPR	MDA : Various	19.656	0.000		0.000		0.000		-		0.000	0.000	19.656	0.000
Ground Systems & Fire Control - Government Software Development	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	19.362	0.000		0.000		0.000		-		0.000	0.000	19.362	0.000
Ground Systems & Fire Control - MF-1: two silos to ensure the number of fielded GBIs does not decrease through the FYDP	C/CPIF	Boeing : AL/AK/AZ/CA/CO/VA	14.958	0.000		0.000		0.000		-		0.000	0.000	14.958	0.000

UNCLASSIFIED

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Ground Systems & Fire Control - Phased Array IDT Development	C/IDIQ	NORTHROP GRUMMAN : AL	0.216	57.956	Nov 2021	29.488	Nov 2022	83.160	Nov 2023	-		83.160	Continuing	Continuing	Continuing
Ground Systems & Fire Control - Prime CLE Re-Architecture	C/CPIF	Boeing AL/AK/AZ : CA/CO/VA	46.609	0.000		0.000		0.000		-		0.000	0.000	46.609	0.000
Ground Systems & Fire Control - Prime Communications Infrastructure	C/CPIF	Boeing AL/AK/AZ : CA/CO/VA	9.968	0.000		0.000		0.000		-		0.000	0.000	9.968	0.000
Ground Systems & Fire Control - Prime Fort Drum IDT	C/CPIF	Boeing AL : CO/NY/VA	10.063	0.000		0.000		0.000		-		0.000	0.000	10.063	0.000
Ground Systems & Fire Control - Prime Ground Systems Software Development	C/CPIF	Boeing AL/AK/AZ : CA/CO/VA	621.011	0.000		0.000		0.000		-		0.000	0.000	621.011	0.000
Ground Systems & Fire Control - Prime MF-1 Repair and Refurbishment	C/CPIF	Boeing AL/AK/AZ : CA/CO/VA	38.925	0.000		0.000		0.000		-		0.000	0.000	38.925	0.000
Ground Systems & Fire Control - Prime On Demand Communications	C/CPFF	Boeing : AL/AK/AZ/CA/CO/TX/VA	35.609	0.000		0.000		0.000		-		0.000	0.000	35.609	0.000
Ground Systems & Fire Control - Prime Technology Refresh	C/CPIF	Boeing/TBD : AL/AK/CA/CO/VA/TBD	564.183	21.495	Nov 2021	0.000		0.351	Nov 2023	-		0.351	0.000	586.029	0.000
Ground Systems & Fire Control - Test Phased Array IDT Transportable Asset - GWS	C/IDIQ	NORTHROP GRUMMAN : AL	0.000	3.852	Nov 2021	12.341	Nov 2022	28.510	Nov 2023	-		28.510	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Prime Modeling and Simulation - Boeing	C/CPIF	Boeing : AL	0.000	0.000		2.008	Nov 2022	0.000		-		0.000	0.000	2.008	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>						Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Systems Engineering and Program Management - Prime Modeling and Simulation - SITR	C/CPAF	BOEING : Various	0.000	0.000		6.871	Nov 2022	0.000		-		0.000	0.000	6.871	0.000
Systems Engineering and Program Management - Prime System Engineering & Integration - SITR	C/CPAF	BOEING : Various	0.000	0.000		3.289	Nov 2022	0.000		-		0.000	0.000	3.289	0.000
GMD Weapon System/ GBI Service Life Extension Program (SLEP) - GMD Weapon System/Ground Based Interceptor Service Life Extension Program (SLEP)	C/CPIF	Boeing/TBD : AL/AK/AZ/CA/UT/TBD	449.726	0.000		33.200	Mar 2023	33.619	Nov 2023	-		33.619	0.000	516.545	0.000
GMD Weapon System/ GBI Service Life Extension Program (SLEP) - GMD Weapon System/Ground Based Interceptor Service Life Extension Program (SLEP) - ESC	C/CPFF	RAYTHEON : Various	0.000	0.000		0.000		13.509	Nov 2023	-		13.509	Continuing	Continuing	Continuing
Subtotal			4,331.798	248.618		218.222		392.682		-		392.682	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Ground Based Interceptor - Government Reliability Program - NORTHROP GRUMMAN	C/CPIF	NORTHROP GRUMMAN : AL	0.000	0.000		2.138	Nov 2022	1.569	Nov 2023	-		1.569	Continuing	Continuing	Continuing

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Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment					Project (Number/Name) MD08 / Ground Based Midcourse				
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Ground Based Interceptor - Government Reliability Program - NSWC	MIPR	NSWC (Naval Surface Warfare Center) : AL/CO/IN	0.000	2.467	Jan 2022	2.043	Jan 2023	1.784	Jan 2024	-		1.784	Continuing	Continuing	Continuing
Ground Based Interceptor - Government Reliability Program - Various	C/CPIF	Various : Various	0.000	0.000		0.256	Nov 2022	0.278	Nov 2023	-		0.278	Continuing	Continuing	Continuing
Ground Based Interceptor - Kill Vehicle Space Chamber Testing - AEDC	MIPR	Arnold AFB/ Arnold Engineering Development Center (AEDC) : OH	14.687	2.432	Jan 2022	2.735	Jan 2023	2.958	Jan 2024	-		2.958	Continuing	Continuing	Continuing
Ground Based Interceptor - Kill Vehicle Space Chamber Testing - Air Force Research Laboratory (AFRL)	MIPR	Air Force Research Laboratory (AFRL) : Various	0.000	0.351	Jan 2022	0.000		0.766	Jan 2024	-		0.766	Continuing	Continuing	Continuing
Ground Based Interceptor - Kill Vehicle Space Chamber Testing - Boeing	C/CPIF	BOEING : Various	0.000	6.278	Nov 2021	4.739	Nov 2022	9.974	Nov 2023	-		9.974	Continuing	Continuing	Continuing
Ground Based Interceptor - Kill Vehicle Space Chamber Testing - CCDC	MIPR	USA CCDC AVIATION AND MISSILE CENTE : AL	0.000	0.000		2.529	Jan 2023	2.736	Jan 2024	-		2.736	Continuing	Continuing	Continuing
Ground Based Interceptor - Kill Vehicle Space Chamber Testing - ESC	C/CPIF	RAYTHEON : Various	0.000	3.314	Nov 2021	0.000		2.828	Nov 2023	-		2.828	Continuing	Continuing	Continuing
Ground Based Interceptor - Kill Vehicle Space Chamber Testing- (AFMETCAL)	MIPR	Air Force Metrology and Calibration Program Office (AFMETCAL) : Various	0.000	1.368	Jan 2022	2.122	Jan 2023	1.443	Jan 2024	-		1.443	Continuing	Continuing	Continuing
Ground Based Interceptor - Logistics & Safety Support - Army Aviation and Missile Command (AMCOM) Logistics Center (ALC)	MIPR	Army Aviation and Missile Command (AMCOM) Logistics Center (ALC) : AL	0.000	3.017	Jan 2022	2.925	Jan 2023	3.110	Jan 2024	-		3.110	Continuing	Continuing	Continuing

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>						Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Ground Based Interceptor - Logistics & Safety Support - CCDC	MIPR	USA CCDC AVIATION AND MISSILE CENTE : AL	0.000	1.142	Jan 2022	1.291	Jan 2023	0.000		-		0.000	0.000	2.433	0.000
Ground Based Interceptor - Logistics & Safety Support - Various	C/CPIF	Various : Various	0.000	1.033	Nov 2021	0.000		1.706	Nov 2023	-		1.706	Continuing	Continuing	Continuing
Ground Based Interceptor - Logistics and Safety Support - Scott AFB	MIPR	TRANSCOM INC : Various	0.000	0.000		0.000		1.918	Jan 2024	-		1.918	Continuing	Continuing	Continuing
Ground Based Interceptor - Prime Product Support - BSC	C/CPIF	NORTHROP GRUMMAN : UT	0.000	0.000		0.000		1.219	Nov 2023	-		1.219	Continuing	Continuing	Continuing
Ground Based Interceptor - Prime Product Support - Boeing	C/CPIF	BOEING : AL/AZ/UT/CA/AK/TBD	0.000	27.352	Nov 2021	14.249	Nov 2022	24.816	Nov 2023	-		24.816	Continuing	Continuing	Continuing
Ground Based Interceptor - Prime Product Support - ESC	C/CPIF	RAYTHEON : Various	0.000	0.000		0.000		7.129	Nov 2023	-		7.129	Continuing	Continuing	Continuing
Ground Based Interceptor - Prime Product Support - ISF	Various	Various : Various	0.000	0.000		8.209	Nov 2022	0.000		-		0.000	0.000	8.209	0.000
Ground Based Interceptor - Prime Product Support - Raytheon	C/CPIF	RAYTHEON : AZ	0.000	1.586	Nov 2021	0.000		0.000		-		0.000	0.000	1.586	0.000
Ground Based Interceptor - Prime Product Support - SITR	C/CPAF	BOEING : Various	0.000	0.042	Aug 2022	0.000		0.000		-		0.000	0.000	0.042	0.000
Ground Based Interceptor - Prime Reliability Program	C/CPIF	BOEING : AL	0.000	6.400	Nov 2021	4.845	Nov 2022	1.810	Nov 2023	-		1.810	Continuing	Continuing	Continuing
Ground Based Interceptor - Prime Reliability Program - BSC	C/IDIQ	NORTHROP GRUMMAN : UT	0.000	0.000		0.000		3.075	Nov 2023	-		3.075	Continuing	Continuing	Continuing

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Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>						Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Ground Based Interceptor - Prime Reliability Program - ESC	C/CPIF	RAYTHEON : Various	0.000	0.000		0.000		2.181	Nov 2023	-		2.181	Continuing	Continuing	Continuing
Ground Based Interceptor - Prime Reliability Program -SITR	C/CPAF	BOEING : Various	0.000	0.000		0.000		3.376	Nov 2023	-		3.376	Continuing	Continuing	Continuing
Ground Based Interceptor - Relocations & Emplacements	C/CPIF	Boeing : AL/AK	0.000	0.519	Nov 2021	0.000		0.000		-		0.000	0.000	0.519	0.000
Ground Systems & Fire Control - Fort Greely Communications Center	MIPR	TBD : AK	0.000	4.949	Nov 2021	0.000		0.000		-		0.000	0.000	4.949	0.000
Ground Systems & Fire Control - GS-9 Software and Hardware Development-Variou	C/CPIF	Various : Various	0.000	2.282	Nov 2021	0.000		0.000		-		0.000	0.000	2.282	0.000
Ground Systems & Fire Control - GWS-10B Software and Hardware Development TBD GWS	C/IDIQ	NORTHROP GRUMMAN : AL	0.000	0.550	Nov 2021	0.000		0.000		-		0.000	0.000	0.550	0.000
Ground Systems & Fire Control - Government Missile Field 4 (20 Silos)	MIPR	Army Corps of Engineers : AK	0.000	6.371	Nov 2021	2.985	Jan 2023	0.000		-		0.000	0.000	9.356	0.000
Ground Systems & Fire Control - Government Software Development	MIPR	Various : Various	0.000	3.252	Nov 2021	0.599	Jan 2023	0.586	Jan 2024	-		0.586	Continuing	Continuing	Continuing
Ground Systems & Fire Control - Prime Missile Field 4 (20 Silos)	C/CPIF	BOEING : AL	0.000	7.511	Nov 2021	0.000		0.000		-		0.000	0.000	7.511	0.000
Ground Systems & Fire Control - Prime Technology Refresh	C/CPIF	BOEING : TBD	0.000	0.102	Dec 2021	0.000		0.000		-		0.000	0.000	0.102	0.000
Systems Engineering and Program Management	Allot	TBD : TBD	0.000	9.262	Oct 2021	7.257	Oct 2022	7.500	Oct 2023	-		7.500	Continuing	Continuing	Continuing

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>						Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
- Government Civilian Salaries															
Systems Engineering and Program Management - Government Discrimination Improvements	C/CPIF	PARSONS GOVERNMENT SERVICES INC. : AL/ TBD	36.971	1.577	Nov 2021	0.553	Nov 2022	0.586	Nov 2023	-		0.586	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Government Discrimination Improvements - Aerospace	C/CPIF	AEROSPACE OPTICS, INC. : TBD	0.000	1.546	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Government EKV HWIL Tests in Space Chamber	MIPR	AEDC : Tullahoma, TN	39.996	0.000		0.000		0.000		-		0.000	0.000	39.996	0.000
Systems Engineering and Program Management - Government Modeling and Simulation	MIPR	USA CCDC AVIATION AND MISSILE CENTE : Redstone Arsenal/ AL, TBD	189.359	33.614	Nov 2021	23.743	Jan 2023	7.090	Jan 2024	-		7.090	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Government Modeling and Simulation - Decibel	C/CPIF	DECIBEL RESEARCH, INC : TBD	0.000	6.666	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Government Modeling and Simulation - Various	Various	Various : Various	0.000	0.060	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Government Systems Engineering & Integration	C/CPIF	Jacobs Tech Inc, Parsons Govt Serv, Torch Tech Inc, TBD : AL	305.163	2.722	Nov 2021	0.536	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Government Systems Engineering & Integration	C/CPIF	JACOBS TECHNOLOGY INC. : AL	0.000	17.242	Nov 2021	0.000		10.605	Nov 2023	-		10.605	Continuing	Continuing	Continuing

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>						Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
- JACOBS TECHNOLOGY INC.															
Systems Engineering and Program Management - Government Systems Engineering & Integration - MODERN TECHNOLOGY SOLUTIONS, INC.	C/CPIF	MODERN TECHNOLOGY SOLUTIONS, INC. : TBD	0.000	1.097	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Government Systems Engineering & Integration - Air Force Space and Missile Systems Center (SMC)	MIPR	Air Force Space and Missile Systems Center (SMC) : TBD	0.000	1.500	Nov 2021	3.145	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Government Systems Engineering & Integration - C3AI, Inc.	MIPR	C3 AI : TBD	0.000	0.880	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Government Systems Engineering & Integration - CCDC	MIPR	USA CCDC AVIATION AND MISSILE CENTE : AL	0.000	7.222	Nov 2021	5.374	Jan 2023	2.868	Jan 2024	-		2.868	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Government Systems Engineering & Integration - NSWC	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) CRANE DIVISION : TBD	0.000	2.114	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Government Systems Engineering & Integration - PARSONS	C/CPIF	PARSONS GOVERNMENT SERVICES INC. : TBD	0.000	58.747	Nov 2021	39.764	Nov 2022	48.110	Nov 2023	-		48.110	Continuing	Continuing	Continuing

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>						Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
GOVERNMENT SERVICES INC.															
Systems Engineering and Program Management - Government Systems Engineering & Integration - TORCH TECHNOLOGIES INC	C/CPIF	TORCH TECHNOLOGIES INC : TBD	0.000	1.594	Nov 2021	1.460	Nov 2022	1.534	Nov 2023	-		1.534	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Government Systems Engineering & Integration - Classified Performer	C/CPIF	TBD : TBD	0.000	4.500	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Government Systems Engineering & Integration - Colsa	C/CPAF	COLSA CORPORATION : AL	0.000	0.000		0.000		3.250	Nov 2023	-		3.250	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Government Systems Engineering & Integration - METI	C/CPIF	BOEING : TBD	0.000	1.565	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Information Management & Technology Ops	C/CPAF	JACOBS TECHNOLOGY INC. : AL, AK, CA, CO, HI, NM, VA	75.193	0.000		12.402	Nov 2022	11.325	Nov 2023	-		11.325	Continuing	Continuing	Continuing
Systems Engineering and Program Management - M&S Industry Support	C/CPAF	Northrop Grumman : AI, VA	2.539	0.000		0.000		0.000		-		0.000	0.000	2.539	0.000
Systems Engineering and Program Management - M&S Support CCDC	Allot	Various : TBD	4.238	0.000		0.000		0.000		-		0.000	0.000	4.238	0.000

UNCLASSIFIED

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Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Systems Engineering and Program Management - M&S Support - Various	Various	Various : Various	0.938	0.000		0.000		0.000		-		0.000	0.000	0.938	0.000
Systems Engineering and Program Management - Prime Design, Readiness, Analysis and Reporting	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	23.672	0.000		0.000		0.000		-		0.000	0.000	23.672	0.000
Systems Engineering and Program Management - Prime Discrimination Improvements	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	132.472	4.273	Nov 2021	0.000		0.000		-		0.000	0.000	136.745	0.000
Systems Engineering and Program Management - Prime EKV HWIL Tests in Space Chamber	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	70.656	0.000		0.000		0.000		-		0.000	0.000	70.656	0.000
Systems Engineering and Program Management - Prime Modeling and Simulation - Boeing	C/CPIF	Boeing : AL, AZ	267.194	7.566	Nov 2021	15.498	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Prime Modeling and Simulation - SITR	C/CPAF	BOEING : TBD	0.000	5.573	Aug 2022	16.652	Dec 2022	30.570	Nov 2023	-		30.570	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Prime Program Management - Boeing	C/CPIF	Boeing : AL/AK/AZ/ CA/CO/UT	545.367	7.495	Nov 2021	22.962	Nov 2022	52.877	Nov 2023	-		52.877	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Prime Program Management - SITR	C/CPAF	BOEING : TBD	0.000	1.054	Aug 2022	9.308	Dec 2022	11.984	Nov 2023	-		11.984	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Prime System Engineering & Integration - Koda Inc	C/CPIF	KODA Technologies, Inc. : TBD	0.000	1.600	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>						Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Systems Engineering and Program Management - Prime System Engineering and Integration - Boeing	C/CPIF	Boeing/TBD : AL/AZ/TBD	556.522	17.295	Nov 2021	11.972	Nov 2022	16.218	Nov 2023	-		16.218	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Prime System Engineering and Integration - JACOBS TECHNOLOGY INC.	C/CPIF	JACOBS TECHNOLOGY INC. : TBD	0.000	0.000		10.602	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Prime System Engineering and Integration - SITR	C/CPAF	BOEING : TBD	0.000	8.633	Aug 2022	71.897	Dec 2022	48.673	Nov 2023	-		48.673	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Systems Engineering & Analysis	TBD	TBD : AL/VA/TBD	64.172	6.215	Nov 2021	5.694	Nov 2022	3.935	Nov 2023	-		3.935	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Systems Engineering & Analysis - CSS Support	C/CPFF	TEAMS : AL	34.429	7.657	Nov 2021	4.317	Nov 2022	4.304	Nov 2023	-		4.304	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Systems Engineering & Analysis - FFRDC / UARC	MIPR	Various : AL/VA	18.493	2.486	Nov 2021	1.986	Nov 2022	2.026	Jan 2024	-		2.026	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Systems Engineering & Analysis - Industry Support	C/CPIF	Boeing : AL	41.081	4.151	Nov 2021	2.920	Nov 2022	4.357	Oct 2023	-		4.357	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Systems Engineering and Analysis - Discrimination Engineering & Analysis	C/CPIF	Boeing : AL/CA/CO/VA	38.168	4.233	Nov 2021	9.606	Nov 2022	9.787	Nov 2023	-		9.787	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>						Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Systems Engineering and Program Management - Systems Engineering and Analysis - Lockheed M&S Support	C/CPAF	LOCKHEED MARTIN CORPORATION : CO	0.000	0.342	Nov 2021	5.000	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Systems Engineering and Analysis - M&S Support	Allot	MDA : AL/VA	63.541	0.000		0.667	Nov 2022	0.420	Nov 2023	-		0.420	0.000	64.628	0.000
Systems Engineering and Program Management - Technical Direction Agent	MIPR	John Hopkins Univ Applied Physics Lab LLC, Various : AL/CA/MD/NM/UT/MA/VA/GA/PA/CO	135.700	14.555	Nov 2021	36.163	Nov 2022	32.758	Nov 2023	-		32.758	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Technical Direction Agent - Various	MIPR	Various : Various	0.000	1.350	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Technical Direction Agent - CMU FFRDC	MIPR	CARNEGIE MELLON UNIVERSITY : AL	0.000	2.233	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Technical Direction Agent -Space Dynamics Lab UARC	MIPR	SPACE DYNAMICS LABORATORY : AL	0.000	1.510	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Technical Direction Agent-MIT/LL FFRDC	MIPR	MASSACHUSETTS INSTITUTE OF TECHNOLOGY : Various	0.000	3.667	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Technical Direction Agent-MITRE	MIPR	MTI : AL	0.000	5.701	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>						Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Systems Engineering and Program Management - Technical Direction-Agent Aerospace	MIPR	AEROSPACE OPTICS, INC. : Various	0.000	7.177	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Operations - Information Technology Services - DISA	MIPR	DOD - DEFENSE INFORMATION SYSTEMS AGENCY (DISA) : TBD	0.000	0.181	Oct 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Operations - Contract Support Services - Various	C/CPFF	Various : AL/AK/CA/CO/VA	518.384	0.615	Nov 2021	0.000		0.000		-		0.000	0.000	518.999	0.000
Program Operations - FFRDC Support - CECOM	MIPR	Communications Electronics Command (CECOM) : AL	0.000	1.489	Nov 2021	1.513	Jan 2023	1.408	Jan 2024	-		1.408	Continuing	Continuing	Continuing
Program Operations - FFRDC Support - MIT/LL	MIPR	MIT/LL : AL/VA/CO	57.491	0.000		0.000		0.000		-		0.000	0.000	57.491	0.000
Program Operations - Government Civilian Salaries	Allot	MDA : AL/VA	389.131	28.505	Oct 2021	24.005	Oct 2022	30.130	Oct 2023	-		30.130	Continuing	Continuing	Continuing
Program Operations - Information Technology Services	C/CPAF	Jacobs Technology Inc. : AL/CO	17.331	1.309	Oct 2021	1.471	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing
Program Operations - Information Technology Services - NMR	C/CPAF	NETWORK MANAGEMENT RESOURCES, INC. : TBD	0.000	1.474	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Operations - Information Technology Services - Various	C/CPAF	Various : Various	0.000	0.000		0.000		1.672	Nov 2023	-		1.672	Continuing	Continuing	Continuing
Program Operations - Information Technology Services - Jacobs	C/CPAF	JACOBS TECHNOLOGY INC. : Various	0.000	1.934	Nov 2021	2.395	Jan 2023	3.298	Nov 2023	-		3.298	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>						Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - Other Government Agencies	MIPR	USA CCDC AVIATION AND MISSILE CENTE : AL	59.549	0.877	Nov 2021	0.731	Jan 2023	0.771	Jan 2024	-		0.771	Continuing	Continuing	Continuing
Program Operations - Safety and Quality	MIPR	MDA : AL/AK/CA/VA	0.583	0.000		0.000		0.000		-		0.000	0.000	0.583	0.000
Program Operations - Travel	Allot	MDA : AL/VA	14.984	1.628	Oct 2021	1.336	Oct 2022	1.395	Oct 2023	-		1.395	Continuing	Continuing	Continuing
GMD Weapon System/ GBI Service Life Extension Program (SLEP) - GMD Weapon System/Ground Based Interceptor Service Life Extension Program (SLEP) - SITR	C/CPAF	BOEING : TBD	0.000	0.000		0.000		0.409	Nov 2023	-		0.409	Continuing	Continuing	Continuing
Subtotal			3,718.004	387.004		402.594		425.122		-		425.122	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - Contract Support Services - Vet Tech	C/CPIF	Veterans Technology, LLC : AL	0.000	1.525	Nov 2021	2.101	Nov 2022	2.015	Nov 2023	-		2.015	Continuing	Continuing	Continuing
Program Operations - Contract Support Services - ARES	C/CPIF	ARES CORPORATION : AL	0.000	1.273	Nov 2021	1.302	Nov 2022	1.567	Nov 2023	-		1.567	Continuing	Continuing	Continuing
Program Operations - Contract Support Services - SABG	C/CPIF	STRATEGIC ALLIANCE BUSINESS GROUP LLC : AL	0.000	0.000		1.203	Nov 2022	7.376	Nov 2023	-		7.376	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Mi dcourse Defense Segment				Project (Number/Name) MD08 / Ground Based Midcourse					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - Contract Support Services - AI SOLUTIONS, INC.	C/CPIF	AI SOLUTIONS, INC. : AL	0.000	2.217	Nov 2021	2.273	Nov 2022	2.864	Nov 2023	-		2.864	Continuing	Continuing	Continuing
Program Operations - Contract Support Services - MACAULAY-BROWN, INC	C/CPIF	MACAULAY- BROWN, INC : AL	0.000	0.700	Nov 2021	0.000		1.045	Nov 2023	-		1.045	Continuing	Continuing	Continuing
Program Operations - Contract Support Services - MP Solutions LLC	C/CPIF	MP SOLUTIONS, LLC : AL	0.000	0.768	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Operations - Contract Support Services - SAS	C/CPIF	STRATEGIC ALLIANCE SOLUTIONS LLC : AL	0.000	0.000		2.778	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Program Operations - Contract Support Services - Various	C/CPIF	AI Solutions, APT Research Inc, BCF Solutions, Booz Allen Hamilton, Macaulay-Brown, Parsons Government Services, Strategic Alliance Business Group, Venturi, Veterans Tech, Yorktown Systems Group : AL/CO/AK	0.000	0.484	Nov 2021	0.000		0.000		-		0.000	0.000	0.484	0.000
Program Operations - Contract Support Services - Venturi	C/CPIF	VENTURI, INC. : AL	0.000	1.624	Nov 2021	1.546	Nov 2022	1.919	Nov 2023	-		1.919	Continuing	Continuing	Continuing
Program Operations - Contract Support Services - Yorktown	C/CPIF	YORKTOWN SYSTEMS GROUP, INC. : AL	0.000	1.685	Nov 2021	1.809	Nov 2022	1.863	Nov 2023	-		1.863	Continuing	Continuing	Continuing
Program Operations - Contract Support Services -BCF SOLUTIONS, INC.	C/CPIF	BCF SOLUTIONS, INC. : AL	0.000	4.461	Nov 2021	4.127	Nov 2022	5.113	Nov 2023	-		5.113	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment				Project (Number/Name) MD08 / Ground Based Midcourse					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			0.000	14.737		17.139		23.762		-		23.762	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			8,049.802	650.359		637.955		841.566		-		841.566	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																														
Appropriation/Budget Activity 0400 / 4														R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment														Project (Number/Name) MD08 / Ground Based Midcourse																
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 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028						
GMD Increment 6C/7 Incremental Element Reviews																			◇	◇																								
Stockpile Reliability Program Testing														◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
Integrate and Emplace FTG-12 Flight Test Vehicle														◇	◇	◇	◇	◇	◇	◇	◇																							
CE-II Block 1 Ground Based Interceptor Delivery 1														◆																														
CE-II Block 1 Ground Based Interceptor Delivery 2														◆	◆	◆	◆	◆																										
Delivery of Two Configuration 2 (C2) Boost Vehicles OBV 69 and OBV 70															◆	◆																												
Delivery of Three Configuration 2 (C2) Boost Vehicles OBV 72,73, and 74																				◇	◇	◇																						
Ground Systems Software 8 Development, Test, & Fielding														◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇																		
GWS 10A Development, Test & Fielding																	◇	◇	◇	◇	◇	◇	◇	◇	◇																			
Test Phased Array IDT Asset Development, Test & Fielding																		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇														
GWS 10B Development, Test & Fielding																		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
EKV SW 12.0 Development and Fielding																							◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇								
Ground Systems Software 9 Development														◇	◇	◇	◇	◇	◇	◇	◇																							
EKV SW 24.0 Development & Testing														◇	◇	◇	◇	◇	◇	◇	◇	◇																						
IDT Modernization and Processor Upgrades														◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇																			
GCN Modernization														◇	◇	◇	◇	◇	◇	◇	◇	◇																						
EKV SW 11.0 Development & Testing														◇	◇	◇	◇	◇	◇	◇	◇	◇																						
MF-4/MF-1 Modernization/Expansion														◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇																		
Phased Array IDT Development														◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
GMD Weapon System/Ground Based Interceptor SLEP														◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
Fort Greely Communications Center																	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GMD Increment 6C/7 Incremental Element Reviews	2	2023	3	2023
Stockpile Reliability Program Testing	1	2022	4	2028
Integrate and Emplace FTG-12 Flight Test Vehicle	1	2022	4	2023
CE-II Block 1 Ground Based Interceptor Delivery 1	1	2022	1	2022
CE-II Block 1 Ground Based Interceptor Delivery 2	1	2022	1	2023
Delivery of Two Configuration 2 (C2) Boost Vehicles OBV 69 and OBV 70	2	2022	3	2022
Delivery of Three Configuration 2 (C2) Boost Vehicles OBV 72,73, and 74	3	2023	1	2024
Ground Systems Software 8 Development, Test, & Fielding	1	2022	1	2025
GWS 10A Development, Test & Fielding	4	2022	1	2025
Test Phased Array IDT Asset Development, Test & Fielding	1	2023	3	2026
GWS 10B Development, Test & Fielding	1	2023	4	2027
EKV SW 12.0 Development and Fielding	2	2024	2	2027
Ground Systems Software 9 Development	1	2022	4	2023
EKV SW 24.0 Development & Testing	1	2022	1	2024
IDT Modernization and Processor Upgrades	1	2022	4	2024
GCN Modernization	1	2022	1	2024
EKV SW 11.0 Development & Testing	1	2022	1	2024
MF-4/MF-1 Modernization/Expansion	1	2022	1	2025
Phased Array IDT Development	1	2022	4	2027
GMD Weapon System/Ground Based Interceptor SLEP	1	2022	4	2028
Fort Greely Communications Center	4	2022	4	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment				Project (Number/Name) MC08 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC08: Cyber Operations	211.015	24.858	27.795	29.035	-	29.035	21.891	22.374	22.831	22.962	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

The Ground Based Midcourse Defense (GMD) Cyber Operations provide cybersecurity and cyber resiliency to maintain and operate all mission and mission support systems.

GMD systems must maintain Network and System Certification and Accreditation (C&A) for operation on all GMD networks and nodes. Cybersecurity and Cyber Resiliency efforts harden the GMD system against a cyber-attack and reduces system vulnerabilities. The strategy implements cybersecurity and cyber resiliency systems throughout the lifecycle to flow requirements to the Ground Based Interceptor, Next Generation Interceptor, and GMD Ground Systems to influence system development. In addition, Cybersecurity and Cyber Resiliency efforts include developmental cyber testing and assessments to reduce cyber vulnerabilities prior to fielding.

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

	FY 2022	FY 2023	FY 2024
Title: Network / System Certification and Accreditation (C&A)	8.272	7.374	7.851
Articles:	-	-	-
Description: GMD Systems maintain a defensive cyber posture through analysis of system software and hardware. By conducting annual cybersecurity reviews, all GMD systems are evaluated to ensure the systems are authorized per the Risk Management Framework (RMF) to assess compliance in implementing and maintaining cybersecurity controls. Develops GMD Department of Defense (DoD) RMF Assessment and Authorization packages, necessary to ensure all GMD networks and nodes maintain authority to operate.			
Recurring efforts include: -Assess, implement, document, and validate up to 512 cybersecurity control families (1935 security protections and control enhancements) for 25 representative systems comprising 250,000 computing and logic bearing components to support the GMD Development, Test, Training, and Operational systems -Ensure compliance with security mandates to maintain continued authorization to operate -Ensure the cyber workforce is trained and qualified			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment	Project (Number/Name) MC08 / Cyber Operations		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
<p>-Support modification of Installation Support Agreements for assigned real property to ensure Facility-Related Control Systems, supporting MDA facilities, are cyber-secure per DoD Instruction 8510.01</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: -SEE ABOVE</p> <p>FY 2024 Plans: -SEE ABOVE</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>				
<p>Title: Cyber Security and Cyber Resiliency</p> <p>Articles:</p> <p>Description: Cybersecurity and Cyber Resiliency efforts harden the GMD system against a cyber-attack and reduces system vulnerabilities. The strategy implements cybersecurity and cyber resiliency systems throughout the lifecycle to flow requirements to the Ground Based Interceptor and GMD Ground Systems to influence system development. Early cyber testing is completed to identify vulnerabilities and fixes early in the design process.</p> <p>Recurring efforts:</p> <p>-Implement the GMD Cybersecurity Risk Process across all systems to execute risk-based decisions on cybersecurity controls</p> <p>-Implement robust cyber resiliency in the GMD weapon systems by developing system level requirements that flow to component level designs, allowing the GMD system to operate in a cyber-contested environment</p> <p>-Support testing on developmental systems in a virtualized environment by integrating cyber test events allowing execution of specific cyber threat vectors on developmental software in an effort to identify capability flaws that will be assessed through the cyber risk process</p> <p>-Tests Cooperative Vulnerability and Penetration Assessment (CVPA) to discover unknown vulnerabilities and determine effectiveness of mitigations from development level cyber testing</p> <p>-Tests Support Adversarial Assessment penetration to determine effectiveness of cyber-attacks in an operational environment along with the effectiveness of the operational and technical mitigations implemented from developmental cyber testing</p> <p>-Implements software and hardware fixes to address weaknesses found during testing</p>		16.586 -	20.421 -	21.184 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MC08 / <i>Cyber Operations</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> -Develop intermediate cybersecurity processes and procedures that provide operators, maintainers, and Warfighter specific steps to recognize and react to cyber-attacks, thus advancing the operational cyber resiliency through the defensive cyber operations capability -Develop and execute quarterly cybersecurity training scenarios allowing fire control operators and network defenders to train in a cyber-contested environment while in a kinetic engagement scenario -Provide training opportunities for Fire Control Operators and Cyber Incident Responders to test Tactics, Techniques, and Procedures to improve resiliency to a cyber-attack <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Field virtualized environment on training system to test cyber-attacks on training scenarios, culminating in an assessment of Warfighter and defensive cyber operations response times - Develop new attack vectors on a virtual power plant system similar to Fort Greely, AK (FGA) Power Plant - Implement Eareckson Air Station, Alaska (EAS) SCMS upgrades for RMF compliance <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Provide Cyber Security support including authorizations and assessments for GMD Increment 6B Ground Test Re-plan - Transition the GMD DSC to the GMD future contracts: SITR contract, GWS contract, Ground Based Interceptor In-Service Fleet BSC, ESC, and Ground Based Interceptor ITC <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>			
Accomplishments/Planned Programs Subtotals	24.858	27.795	29.035

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0208866C: MD08: <i>GMD Procurement</i>	0.000	11.300	0.000	-	0.000	18.403	42.725	48.866	0.000	Continuing	Continuing
• 028866C: MD08: <i>Midcourse Defense O&M</i>	156.623	185.564	199.248	-	199.248	204.864	188.486	186.647	0.000	0.000	1,121.432
• 0604874C: <i>Improved Homeland Defense Interceptors</i>	863.364	1,833.357	2,130.838	-	2,130.838	2,110.409	1,444.842	1,239.966	1,015.682	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency									Date: March 2023		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Mi dcourse Defense Segment				Project (Number/Name) MC08 / Cyber Operations			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0604887C: Ballistic Missile Defense Midcourse Defense Segment Test	61.424	84.075	41.824	-	41.824	40.284	58.043	123.579	100.278	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
<p>The Ground Based Midcourse Defense (GMD) program will continue to follow testing, development, and evolutionary acquisition through incremental development. The Agency acquisition strategy ensures GMD components are upgraded to improve both GMD Component performance and GMD Element performance in order to retain the proven GMD contribution to the integrated Missile Defense System. This acquisition approach reduces obsolescence risk, provides incremental capability improvements, and allows decision makers to make informed trades between cost, schedule, and performance while rapidly delivering improved operational and technological capabilities.</p> <p>GMD competitively awarded the Development and Sustainment Contract (DSC) to The Boeing Company in December 2011. This contract included development, fielding, test, systems engineering, integration, and configuration management; equipment manufacturing and upgrade; training, operations, and sustainment of the GMD Element and associated support facilities. In January 2018, the DSC was extended with a new period of performance through 1Q FY 2024. The DSC Extension includes supporting test, engineering, software, and performance based logistics scope. In 2022, the MDA Ground Test Replan resulted in the extension of minimal contract line items to support testing, engineering, hardware and software until December 2024; while performance based logistics will transition to a new contract after December 2023. The DSC structure breaks out major efforts into separate Contract Line Item Numbers with individual incentives for management insight, accounting, and property accountability.</p> <p>The DSC prime contractor is responsible for a majority of the GMD scope through delivery of Missile Defense System Increment 6B.2. GMD's current DSC period of performance ends in December 2023 for general scope with select contract line items remaining open until December 2024 to allow the prime contractor to complete the delivery of Missile Defense System Increment 6B.2.</p> <p>GMD has implemented a robust Program Board structure allowing more Government insight and decisions into the technical baseline and has changed business processes for greater Government involvement in program decisions consistent with the Government's ownership of the technical baseline. In addition, GMD utilizes Government laboratory modeling and simulation and analysis capabilities to augment the current DSC efforts. These efforts utilize existing, competitively awarded contracts by MDA and Other Government Agencies including Vandenberg Space Force Base, CA; Missile Defense Integration and Operations Center; U.S. Army Combat Capabilities Development Command Aviation & Missile Center (formerly known as U.S. Army Aviation and Missile Research, Development and Engineering Center); and Pacific Missile Range Facility, HI.</p>											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MC08 / <i>Cyber Operations</i>
<p>New GMD Contracts will satisfy future GMD Element requirements beyond DSC's support and Missile Defense System Increment 6B.2. The new contracts initiate and execute concurrently with the DSC and provide for transition periods while the DSC scope is completing to provide continuity of effort. Each of the new contracts is structured to break out major efforts into separate Contract Line Item Numbers with individual incentives for management insight, accounting and property accountability.</p> <p>MDA competitively awarded two best value contracts on March 24, 2021 to Lockheed Martin and Northrop Grumman for technology and product development of Next Generation Interceptor and plans to maintain competition through the Critical Design Review in FY 2025 to reduce technical risk, drive industry behavior(s) through retention of a competitive environment throughout early design development activities, secure competitive production pricing, and support the Department's ability to field a system capable of negating the expanded threat, as well as, maximize the likelihood of delivering this critical capability at the earliest possible opportunity.</p> <p>MDA has awarded/plans to award sole source contracts to the GMD's Ground Based Interceptor In-Service Fleet (ISF) original equipment manufacturers to perform service life extensions and maintain the existing fleet, execute repairs, and develop software. These contracts are intended primarily to ensure fleet viability until replacement interceptors (Next Generation Interceptors) are fielded. ISF is constrained to the legacy interceptor fleet and its component boosters and kill vehicles. The Boost Vehicle Sustainment Contract was awarded to Northrop Grumman in September 2021. The EKV Sustainment Contract is planned for award to Raytheon Missile Systems in FY 2023. The Ground Based Interceptor Integration and Test Contract is planned for award to Boeing in FY 2024.</p> <p>The GMD Weapon System (GWS) Contract was competitively awarded to Northrop Grumman Systems Corporation in July 2022 to provide design, development, production, product level testing, sustainment planning, and deployment of new capabilities for the Weapon System. The GWS contractor is responsible for developing weapon system solutions, including fire control and communication systems improvements, required updates to the legacy system to remain effective while Next Generation Interceptor is under development, as well as, preparing for the seamless introduction of Next Generation Interceptor and other future Missile Defense System capabilities. The GWS contract will update the system interface for the addition of Next Generation Interceptors to the fleet, provide the Warfighter capability to operate the GMD Weapon System with a mixed fleet of Ground Based Interceptors and Next Generation Interceptors, and identify and develop solutions for message exchanges between the GMD Weapon System and in-flight kill vehicles. All of this must be accomplished while maintaining a robust cyber defense network capable of detecting and defending against current and future cybersecurity threats.</p> <p>GMD competitively awarded a single Systems Integration, Test, and Readiness (SITR) Contract to provide, along with the Technical Direction Agent, a synergistic approach in executing the GMD Element-level engineering, integration, test, and readiness of the GMD Weapon System. The SITR contractor is charged with being the Government's technical partner for day-to-day operation and sustainment of the GMD Weapon System alongside the United States Northern Command Warfighters. While the Government maintains overall system integration responsibilities and authority, the SITR contractor will assume a supporting technical role responsible for ensuring overall GMD integration including physical and logical integration of the GMD Components, GMD Element, and MDA enterprise level integration, planning and execution of all necessary testing to verify and validate overall requirements compliance.</p> <p>GMD Increment 6C, 10, and 11 will be executed with the SITR and GWS contracts. The SITR Contract was awarded 4Q FY 2022.</p> <p>GMD also uses MDA Consolidated Support along with Federally Funded Research and Development Center personnel for engineering and technical support to ensure Network and System Certification and Accreditation requirements are met; studies, analyses, and evaluations; and management and professional services to GMD</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment	Project (Number/Name) MC08 / Cyber Operations
<p>functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing MDA Consolidated Support contracts and will utilize MDA competitively awarded new contracts to acquire Fiscal Years 2020-2030 Advisory and Assistance Services support.</p> <p>The Integrated Research and Development for Enterprise Solutions contract is used to provide cyber related equipment, licenses, and support.</p> <p>The U.S. Corps of Engineers provides expertise and support for the Site Control Monitoring System cyber upgrade project at Eareckson Air Station, AK.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>						Project (Number/Name) MC08 / <i>Cyber Operations</i>			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Cyber Security and Cyber Resiliency - Cyber Security and Cyber Resiliency - GMD Cybersecurity Program - Army Corps of Engineers	MIPR	Army Corps of Engineers/ Huntsville : TBD	0.000	0.043	Aug 2022	1.642	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			0.000	0.043		1.642		0.000		-		0.000	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - Network / System Certification and Accreditation (C&A) - Civilian Salaries	Allot	MDA : AL/CA/CO	7.702	1.086	Oct 2021	1.130	Oct 2022	1.166	Oct 2023	-		1.166	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Network / System Certification and Accreditation (C&A) - Contract Support Services	C/CPFF	Booz Allen Hamilton, AL, Decisive Analytics, AL : Torch Technologies, AL Parsons, AL	36.542	0.000		0.000		0.000		-		0.000	0.000	36.542	0.000
Cyber Security and Cyber Resiliency - Cyber Security and Cyber Resiliency - Cybersecurity	C/CPAF	Various : Various	22.476	2.243	Nov 2021	0.000		0.000		-		0.000	0.000	24.719	0.000
Cyber Security and Cyber Resiliency - Cyber Security	C/CPFF	Booz Allen Hamilton : AL, VA	2.583	0.000		0.000		0.000		-		0.000	0.000	2.583	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>						Project (Number/Name) MC08 / <i>Cyber Operations</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
and Cyber Resiliency - Facility-Related Control Systems Contract Method															
Cyber Security and Cyber Resiliency - Cyber Security and Cyber Resiliency - GMD Cybersecurity Program	C/CPAF	Boeing : AL/CO	83.321	14.300	Nov 2021	17.048	Nov 2022	7.619	Nov 2023	-		7.619	Continuing	Continuing	Continuing
Cyber Security and Cyber Resiliency - Cyber Security and Cyber Resiliency - GMD Cybersecurity Program - ESC	C/CPIF	RAYTHEON : AZ	0.000	0.000		0.000		2.997	Nov 2023	-		2.997	Continuing	Continuing	Continuing
Cyber Security and Cyber Resiliency - Cyber Security and Cyber Resiliency - GMD Cybersecurity Program - Communications Electronics Command (CECOM)	MIPR	Communications Electronics Command (CECOM) : AL	0.000	0.000		1.371	Jan 2023	1.081	Jan 2024	-		1.081	Continuing	Continuing	Continuing
Cyber Security and Cyber Resiliency - Cyber Security and Cyber Resiliency - GMD Cybersecurity Program - ITC	C/CPIF	BOEING : AL	0.000	0.000		0.000		2.171	Nov 2023	-		2.171	Continuing	Continuing	Continuing
Cyber Security and Cyber Resiliency - Cyber Security and Cyber Resiliency - GMD Cybersecurity Program - SITR	C/CPAF	BOEING : AL	0.000	0.000		0.000		5.790	Nov 2023	-		5.790	Continuing	Continuing	Continuing
Cyber Security and Cyber Resiliency - Cyber Security and Cyber Resiliency - GMD Cybersecurity Program - Various	Various	Various : Various	0.000	0.000		0.360	Nov 2022	1.526	Nov 2023	-		1.526	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MC08 / <i>Cyber Operations</i>
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Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Cyber Security and Cyber Resiliency - Cyber Security and Cyber Resiliency - Ground Systems Software Cybersecurity	C/CPIF	Boeing AL/AK/AZ : CA/CO/VA	58.391	0.000		0.000		0.000		-		0.000	0.000	58.391	0.000
Subtotal			211.015	17.629		19.909		22.350		-		22.350	Continuing	Continuing	N/A

Remarks

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

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - Contract Support Services - Booz-Allen Hamilton Inc	C/CPIF	BOOZ ALLEN HAMILTON INC. : AL	0.000	1.857	Nov 2021	1.673	Nov 2022	1.766	Nov 2023	-		1.766	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Contract Support Services - Decisive Analytics Corp.	C/CPIF	DECISIVE ANALYTICS CORPORATION : AL	0.000	1.280	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Contract Support Services - Parsons	C/CPIF	PARSONS GOVERNMENT SERVICES INC. : AL	0.000	3.460	Nov 2021	3.487	Nov 2022	3.723	Nov 2023	-		3.723	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Contract Support Services - Various	C/CPIF	Various : AL	0.000	0.589	Nov 2021	1.084	Nov 2022	1.196	Nov 2023	-		1.196	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment				Project (Number/Name) MC08 / Cyber Operations					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			0.000	7.186		6.244		6.685		-		6.685	Continuing	Continuing	N/A
Remarks															
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			211.015	24.858		27.795		29.035		-		29.035	Continuing	Continuing	N/A
Remarks															
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment	Project (Number/Name) MC08 / Cyber Operations	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Network and System Certification and Accreditation (C&A)	1	2022	4	2028
Cybersecurity and Cyber Resiliency	1	2022	4	2028
Cooperative Vulnerability Penetration Assessment (CVPA)	1	2022	4	2028
Adversarial Assessment (AA)	1	2022	4	2028
Computer Network Defense (CND)	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program-Wide Support	254.766	32.415	23.268	33.032	-	33.032	31.192	36.816	37.530	39.007	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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	32.415	23.268	33.032
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p><i>FY 2023 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2024 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase from FY 2023 to FY 2024 provides the PWS allocation 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.</p>			
Accomplishments/Planned Programs Subtotals		32.415	23.268
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>						Project (Number/Name) MD40 / <i>Program-Wide Support</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Facilities and Maintenance	MIPR	Various : Multi: AK, AL, CA, VA	3.920	3.000	Nov 2021	0.000		0.000		-		0.000	0.000	6.920	0.000
Program Wide Support - Agency Facilities and Maintenance SRM	MIPR	Army Corps of Engineers : Multi: AK, AL, CA, HI, NY, VA	3.652	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	C/CPAF	Various : Multi: AL, CA, CO, VA	17.922	0.000		0.000		0.000		-		0.000	0.000	17.922	0.000
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	MDA : Multi: AK, AL, CA, CO, VA	140.371	29.415	Oct 2021	23.268	Oct 2022	24.771	Oct 2023	-		24.771	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services (MIPR)	MIPR	Various : Multi: AK, AL, CO, CA, HI, VA	26.617	0.000		0.000		0.000		-		0.000	0.000	26.617	0.000
Program Wide Support - Agency Operations and Support Services	C/FFP	Cherokee Nation Red Wing : Various	0.000	0.000		0.000		2.337	Nov 2023	-		2.337	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations, Sustainment and GPC	C/FFP	JACOBS TECHNOLOGY INC. : Multi: AK, AL, CA, HI, NY, VA	0.800	0.000		0.000		0.000		-		0.000	0.000	0.800	0.000
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various : Various	24.092	0.000		0.000		0.000		-		0.000	0.000	24.092	0.000
Subtotal			217.374	32.415		23.268		27.108		-		27.108	Continuing	Continuing	N/A
Remarks Support is allocated on a pro-rata basis and therefore, fluctuates by year based on the adjusted RDT&E profile															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>				Project (Number/Name) MD40 / <i>Program-Wide Support</i>					

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations and Support Services	C/CPFF	LSINC : AL	37.392	0.000		0.000		5.924	Nov 2023	-		5.924	0.000	43.316	0.000
Subtotal			37.392	0.000		0.000		5.924		-		5.924	0.000	43.316	N/A

Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			254.766	32.415		23.268		33.032		-		33.032	Continuing	Continuing	N/A

Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															
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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023									
Appropriation/Budget Activity 0400 / 4								R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment								Project (Number/Name) MD40 / Program-Wide Support							
Significant Event Complete ▲				Milestone Decision Complete ★				Element Test Complete ◆				System Level Test Complete ●				Complete Activity ◆							
Significant Event Planned △				Milestone Decision Planned ☆				Element Test Planned ◇				System Level Test Planned ○				Planned Activity ◇							
								FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028			
MD40 Program-Wide Support								◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment	Project (Number/Name) MD40 / Program-Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity	R-1 Program Element (Number/Name)											
0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603884C / <i>Ballistic Missile Defense Sensors</i>											
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	2,572.019	250.123	230.502	239.159	-	239.159	212.191	233.877	242.623	251.226	Continuing	Continuing
MD11: <i>BMDs Radars</i>	2,380.617	220.888	200.770	209.931	-	209.931	184.133	202.733	212.070	218.960	Continuing	Continuing
MC11: <i>Cyber Operations</i>	54.599	19.504	21.339	20.727	-	20.727	20.421	21.694	20.709	21.124	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	136.803	9.731	8.393	8.501	-	8.501	7.637	9.450	9.844	11.142	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Increase from Fiscal Year (FY) 2023 to FY 2024 provides for additional testing of software maintenance updates and resolution of software trouble reports for multiple software builds.

A. Mission Description and Budget Item Justification

The Missile Defense System network of layered sensors provides essential situational awareness and fire control data for the command and control of Missile Defense System weapon systems, such as Ground-Based Midcourse Defense (GMD), Aegis Ballistic Missile Defense (BMD), and Terminal High Altitude Area Defense (THAAD). The suite of remote ground-based sensors provides early warning, midcourse, and terminal missile defense threat data. This data enables layered detection and tracking of missile targets, providing fire-control quality position, velocity, and discrimination data through GMD Fire Control, or Command and Control, Battle Management and Communications (C2BMC).

Overlapping coverage of geographically diverse sensors provides improved threat track data, reduces the impact of the loss of any one sensor, and reduces the potential impact of countermeasures. The extended coverage and accuracy provided by a network of layered sensors increases the defensive footprint and reduces the number of target engagements required, thereby conserving interceptor inventory and maintaining a high probability of successful engagement. Networked forward-based sensors enable C2BMC to pair the best sensor coverage with the best available weapon system to provide the most effective defense against missile threats.

This Program Element (PE) includes Missile Defense System threat discrimination improvements, which will enhance Missile Defense System effectiveness against the evolving adversary threat. The result will be a Missile Defense System architecture more capable of discriminating and destroying reentry vehicles with a higher degree of confidence, improving Warfighter shot doctrine, and more efficiently using interceptor inventory. Missile Defense System threat discrimination improvements are funded from the Enabling (0603890C), Midcourse (0603882C), BMD Sensors (0603884C), C2BMC (0603896C), and Aegis BMD (0603892C) PEs.

The Missile Defense System Sensors Program contributes to regional and homeland missile defense through the development, delivery, and deployment/redeployment of Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) radars for operations or tests. AN/TPY-2 radars can be configured to operate as either a THAAD Fire Unit Radar (terminal mode) or Forward-Based Radar. These radars are transportable and add flexibility to respond to geographical changes in threats. Radars provide early warning tracking and discrimination data through all phases of missile flight. Through the Missile Defense System C2BMC and coalition data links,

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency			Date: March 2023			
Appropriation/Budget Activity		R-1 Program Element (Number/Name)				
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)		PE 0603884C I Ballistic Missile Defense Sensors				
the AN/TPY-2 provides fire control data to enable remote Standard Missile-3 engagements by Aegis BMD, and to cue deployed THAAD and U.S. and partner PATRIOT (Phased Array Tracking Radar to Intercept on Target) batteries.						
The Missile Defense System sensor network includes: the U.S. Space Force (USSF) COBRA DANE (CD) Radar at Eareckson Air Station, AK, and the USSF Upgraded Early Warning Radars (UEWRs) at Beale Air Force Base, CA; Cape Cod Space Force Station (SFS), MA; Clear SFS, AK; Royal Air Force Fylingdales, United Kingdom; and Thule Air Base, Greenland, for defense of the homeland.						
This program element supports sensors Modeling and Simulation development of Digital and Hardware-in-the-loop models to support Integrated Master Test Plan events and system-level digital testing for Missile Defense System assessments of the Long Range Discrimination Radar, AN/TPY-2, Sea-Based X-Band, Upgraded Early Warning Radar, and CD radar.						
This program element also supports the planning and deployment of persistent radars.						
Cyber Operations sustain the Risk Management Framework (RMF) and Controls Validation Testing activities, analysis of validation results, risk assessments, reviews of Plans of Action and Milestones, and alignment and integration to the Tier 2 Cybersecurity Service Provider for the Ground Sensors mission systems. Cyber Operations supports the execution of lab-based developmental cyber testing (Baseline Assessment Technical Testing, Cooperative Vulnerability Identification and Adversarial Cybersecurity Developmental Test and Evaluation) for all major mission system software version releases. These efforts position Ground Sensor assets to complete transition to National Institute of Standards and Technology Special Publication 800-53 revision 5 requirements (i.e., RMF 2.0) and enhances software supply chain security by developing and maintaining the software bill of materials for all developed and delivered Ground Sensors mission and mission support software as directed in the President's Executive Order on Improving the Nation's Cybersecurity dated May 12, 2021.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		254.962	231.134	250.028	-	250.028
Current President's Budget		250.123	230.502	239.159	-	239.159
Total Adjustments		-4.839	-0.632	-10.869	-	-10.869
• Congressional General Reductions		0.000	-0.632			
• Congressional Directed Reductions		0.000	0.000			
• Congressional Rescissions		0.000	0.000			
• Congressional Adds		0.000	0.000			
• Congressional Directed Transfers		0.000	0.000			
• Reprogrammings		0.000	0.000			
• SBIR/STTR Transfer		-4.839	0.000			
• Other Adjustment		0.000	0.000	-10.869	-	-10.869
Change Summary Explanation						
The decrease in FY 2024 reflects realignment to higher Department priorities.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors				Project (Number/Name) MD11 / BMDS Radars			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD11: BMDS Radars	2,380.617	220.888	200.770	209.931	-	209.931	184.133	202.733	212.070	218.960	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from (Fiscal Year) FY 2023 to FY 2024 provides for additional testing of software maintenance updates and resolution of software trouble reports for multiple software builds.

A. Mission Description and Budget Item Justification

The Missile Defense System Radars project includes development of future Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2), U.S. Space Force (USSF) COBRA DANE (CD), Long Range Discrimination Radar (LRDR), Sea Based X-Band (SBX), and USSF Upgraded Early Warning Radars (UEWR) capabilities through system engineering; software development; and testing support.

Modeling and Simulation (M&S) efforts include enhanced sensor models, development of Radio Frequency scene generators, integration of digital simulations into the Missile Defense System M&S architecture, and Verification, Validation, and Accreditation of radar models. This project also funds participation and support for Missile Defense System element ground and flight test campaigns and Warfighter games and exercises.

This project provides development of discrimination advanced algorithms for Missile Defense System radars to counter evolving threats. The discrimination improvement effort will develop and field integrated element capabilities to improve Missile Defense System ability to identify lethal and non-lethal objects. Sensors will continue development of discrimination improvement midterm design and test support for Missile Defense System radars and far term trade analysis and planning.

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

	FY 2022	FY 2023	FY 2024
Title: Basic Development Program	20.814	25.101	35.330
Articles:	-	-	-
<p>Description: The Basic Development Program includes development and testing of software maintenance updates to address software trouble reports identified on fielded software versions and flight/ground test events. Software improvement efforts also include optimization of increased processing capabilities. The Basic Development Program also provides analysis of software performance during flight and ground testing to support Materiel Release for software deliveries. The Materiel Release Closure Plan for the AN/TPY-2 ensures the Reliability, Availability, and Maintainability Program promotes reliability growth in the suite of AN/TPY-2 radars via product improvements.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MD11 / <i>BMDs Radars</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>- SEE ABOVE.</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Continue development and testing of software maintenance updates - Continue resolution of software trouble reports identified on fielded software versions CX 3.0 and CX 4.0 - Continue analysis of software performance during flight test and ground test to support Material Release of software version CX 5.0 - Upgrade developmental Hardware in the Loop (HWIL) lab equipment <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Increase from FY 2023 to FY 2024 provides for additional testing of software maintenance updates and resolution of software trouble reports for multiple software builds.</p>			
<p>Title: BMDs Radars Modeling & Simulation (M&S)</p> <p align="right">Articles:</p> <p>Description: Missile Defense System Radars M&S efforts include development and maintenance of enhanced sensor models, development and maintenance of Radio Frequency scene generators, integration of simulations into the Missile Defense System M&S architecture, and Verification, Validation, and Certification (VV&C) of radar models, including high fidelity models used for performance assessment. This project also supports war games, Warfighter exercises and training, execution of element-level ground test campaigns and element-level post-flight reconstructions, and the development of M&S frameworks and truth models required to anchor M&S. These activities include:</p> <ul style="list-style-type: none"> - Develop and sustain Digital and Hardware-in-the Loop (HWIL) representations of various simulations and models to include the tactical versions of AN/TPY-2, LRDR, SBX, UEWRS, and CD, to include development of real-world capabilities in high fidelity ground test and performance assessment models to keep pace with evolving threats and Missile Defense System - Perform VV&C of radar models, including electronic protection and objective debris mitigation, for use in performance assessments - Support technical and performance assessments including Ground Test and Continuous Digital Assessment using Open Systems Architecture Sensor Models (OSM), Open Systems Architecture Signal Injectors, and Multi-band Electronic Attack Digital Injection Capability (MEDIC) - Develop End-to-end Digital Integrated System-level Simulation (EDISS) and Ground Test Integrated System-level Simulation (GTISS) improvements to the Missile Defense Agency (MDA) Ground Test Architecture that provides assessment data, supplemental to Ground and Flight tests, in areas that those venues cannot address - Conduct continuous agile system requirements analysis, software development, integration, and test of incremental versions for enhanced EDISS and GTISS capabilities 		76.002	54.298
		-	-
		50.534	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MD11 / <i>BMDs Radars</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
- Conduct element-level and support system-level verification and validation activities Specific and/or unique accomplishments to each FY are as follows: FY 2023 Plans: Digital M&S Priorities: - Continue core modeling of real-world radar capabilities to keep pace with the evolving Missile Defense System, continuing LRDR and AN/TPY-2 modeling, along with increasing modeling efforts on MDA standalone radars - Continue supporting Continuous Digital Assessments to include planning, execution, analysis and reporting - Complete software development of EDISS v2 - Complete integration and testing for EDISS v2 - Complete software development of interfaces for OSM models for AN/TPY-2, COBRA DANE, UEWR, SBX, and LRDR for EDISS v3 - Conduct element-level and support system-level verification and validation activities - Continue EDISS v4 system requirements analysis - Continue development of additional capabilities in high fidelity digital models for AN/TPY-2, SBX, LRDR, UEWR, and CD - Complete EDISS v4 Design Synthesis - Complete EDISS v4 Engineering and Development - Continue EDISS v4 Integration, Test, and Verification Ground Test and HWIL M&S Priorities: - Complete Phase 1 of GTISS improvements to the MDA Ground Test Architecture - Complete GTISS Phase 2 Integration, Test, and Verification - Complete GTISS Phase 3 Design Synthesis - Complete GTISS Phase 3 Engineering and Development - Continue GTISS Phase 3 Integration, Test, and Verification - Continue development of additional capabilities in high fidelity ground test models for AN/TPY-2, SBX, LRDR, and UEWR - Complete Element Post Flight Reconstructions of FTX-45 for LRDR and UEWR FY 2024 Plans: - SEE ABOVE FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Title: Capability Development Program		75.484	74.534
			71.977

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MD11 / <i>BMDs Radars</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p align="right">Articles:</p> <p>Description: The Capability Development Program provides engineering support to enable compliance with Missile Defense System System Specification threat capabilities and addresses advanced threats. This task includes the redesign of select components to address obsolescence and improve reliability of the system. This task continues electronic protection and objective debris mitigation development efforts to reduce or eliminate the effect of corporate clutter and electronic attack on sensors. It develops, designs, and tests sensor mid-term discrimination improvements for X-Band radars, to include SBX threat discrimination improvements. This effort funds participation in far-term discrimination improvement threat model specifications, develops discrimination and countermeasure mitigation capability development, and funds studies of future sensor improvements. Additional software development activities include Terminal High Altitude Area Defense Missile Segment Enhancement fielding and integration, and X86 performance optimization to enhance processing speed, improvements to cybersecurity posture, additional development of sensor electronic protection for AN/TPY-2 and LRDR, and developmental information system enhancements. This effort includes threat updates and verification, core standards system engineering, and required updates to models, simulation, and performance assessment.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Continue development of sensor mid-term threat discrimination improvements for X-Band radars, to include SBX threat discrimination improvements - Continue development of sensor Electronic Protection and Objective Debris Mitigation development efforts to mitigate electronic attack and to reduce the effect of clutter on sensors - Continue development of a domestic secure server solution to meet the AN/TPY-2 cybersecurity and performance requirements - Initiate enhanced electronic protections mitigations <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Complete development of a next generation Electronic Equipment Unit to resolve obsolescence associated with the legacy Receiver/Exciter and X86 servers (CX 6.0) - Complete development of initial Arbitrary Waveform and advanced signal processing capability (CX 7.0) - Continue AN/TPY-2 Advanced Electronic Protection (EP) Development (CX 6.0) for Enhanced AN/TPY-2 (Forward Based Mode) Protections and Mitigations - Continue SBX EP Algorithm Development & Integration for SBX Stand Alone Radar Protections and Mitigations (XBR 4.3) - Development of SBX EP models and simulation capability 		-	-
			FY 2024
			-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023			
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors	Project (Number/Name) MD11 / BMDS Radars		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
- Continue LRDR discrimination studies and development efforts to address updated Homeland Defense Ballistic Missile Threat Space		FY 2022	FY 2023	FY 2024	
FY 2023 to FY 2024 Increase/Decrease Statement: N/A					
Title: Sensors Directorate Operations		44.462	45.377	52.090	
Articles:		-	-	-	
Description: Program Operations provides strategic planning, program integration, contracting, acquisition, engineering, financial management, internal reviews and audits, and program assessments for the Ground Sensors Directorate.					
Recurring activities include:					
- Provide technical and business management support activities to provide critical program status and decision quality data					
- Ensure Ground Sensors program compliance with internal and external direction, policies, and regulations to deliver critical capability within a consistent and disciplined process					
- Conduct internal program reviews to measure program progress against the six Missile Defense Agency approved baselines					
- Continue a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management, Manufacturing, Engineering, and Safety in all phases of the system life cycle, throughout the supply chain, and at all levels of assembly emphasizing high yield rates which minimize test and rework costs					
- Provide Quality Safety and Mission Assurance operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability to ensure high quality products are delivered to the Warfighter					
- Provide End User Support, Unified Communications, Computer Network Defense Services, Business Automation, and Portal and Data Services to support the Sensors Directorate					
- Provide sustainment Integrated Product Support (IPS) in accordance with the Army/Navy Transportable Radar Surveillance Model 2 (AN/TPY-2) Transition and Transfer Annex to the Missile Defense Agency/Army Overarching Memorandum Agreement and Army Regulation (AR700-127) regarding Integrated Logistics Support to ensure timely, structured transition and transfer of the Missile Defense System capability and associated components to the lead Service					
Specific and/or unique accomplishments to each FY are as follows:					
FY 2023 Plans:					
- SEE ABOVE.					
FY 2024 Plans:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency									Date: March 2023		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors				Project (Number/Name) MD11 / BMDS Radars			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024
- SEE ABOVE.											
FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides adjustments for inflation, consolidation of communication and information technology (classified and unclassified) service agreements and properly aligns program office support to requirements.											
Title: Upgrade Clear Early Warning Radar									4.126	1.460	0.000
Articles:									-	-	-
Description: Upgrade of U.S. Space Force (USSF) Clear Early Warning Radar Space Force Station (SFS) and USSF Cape Cod Early Warning Radar SFS includes adaptation of hardware and software to UEWR infrastructure, support to Missile Defense System communications and architecture work and installation at site. This project also includes preparation and removal of legacy equipment at each UEWR site.											
Specific and/or unique accomplishments to each FY are as follows:											
FY 2023 Plans: -Continue Automatic Data Processing Equipment (ADPE) Rehost strings for Integrated Software Test Center (ISTC) 1 and ISTC 2 required for CD to continue participation in ground tests											
FY 2024 Plans: N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects completion of the USSF UEWR upgrades.											
Accomplishments/Planned Programs Subtotals									220.888	200.770	209.931
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0208866C MD11: BMDS Sensors Procurement	2.738	4.606	29.108	-	29.108	35.257	13.382	27.475	10.200	Continuing	Continuing
• 0208866C MD11: Missile Defense System Radars Program, Operation and Maintenance	190.715	200.207	227.768	-	227.768	228.246	255.910	259.386	264.174	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency									Date: March 2023		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Se nsors				Project (Number/Name) MD11 / BMDS Radars			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603882C: Ballistic Missile Defense Midcourse Defense Segment	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing
• 0603890C: BMD Enabling Programs	616.800	588.847	597.720	-	597.720	620.823	639.398	648.954	650.432	Continuing	Continuing
• 0603896C: Ballistic Missile Defense Command and Control, Battle Management & Communication	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing
• 0603898C: Ballistic Missile Defense Joint Warfighter Support	50.261	50.269	48.248	-	48.248	49.164	50.445	51.542	52.859	Continuing	Continuing
• 0603904C: Missile Defense Integration and Operations Center (MDIOC)	44.188	49.367	50.549	-	50.549	56.624	58.020	59.193	60.615	Continuing	Continuing
• 0603907C: Sea Based X-Band Radar (SBX)	147.241	164.668	177.868	-	177.868	196.952	176.633	162.632	162.578	Continuing	Continuing
• 0603914C: Ballistic Missile Defense Test	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing
• 0604181C: Hypersonic Defense	281.886	517.977	208.997	-	208.997	218.939	294.326	366.951	644.996	Continuing	Continuing
• 0604672C: Homeland Defense Radar-Hawaii	75.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	75.000
• 0604873C: Long Range Discrimination Radar (LRDR)	129.552	75.120	103.517	-	103.517	100.114	68.815	69.219	65.521	Continuing	Continuing
• 0604879C: Ballistic Missile Defense Sensor Test	77.428	88.326	111.049	-	111.049	90.697	103.885	154.905	127.807	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
The Radar Development Contract (RDC) awarded on November 1, 2017, supports the Ground Sensors Directorate's X-Band Radars (XBR). Missile Defense System capability and performance requirements, which underpin continuing XBR development requirements include, but are not limited to, the AN/TPY-2 radar and the SBX radar. These requirements stem directly from formal Warfighter requirements as developed in the United States Strategic Command (USSTRATCOM)-led Warfighter Involvement Process. MDA's Achievable Capabilities List documents content from the Prioritized Capabilities List and Modification and Fielding Requirements List,											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors	Project (Number/Name) MD11 / BMDS Radars
<p>which MDA then translates via the Missile Defense System architecture and system specifications into flow-down requirements, characteristics, and capability needs for individual Missile Defense System program specifications, and approved through the systems engineering and baseline change management process for Missile Defense System programs to execute. The RDC supports the XBRs for product improvement, including developmental upgrades of software and development of hardware and software to meet enhanced capabilities and risk reduction measures; warfighter support, including wargames and exercise support; engineering services, including engineering support for delivered and accepted radars to facilitate maintenance efforts which may include, but are not limited to, hardware obsolescence studies, hardware redesign, technology insertion and refurbishment; Missile Defense System test subject matter expert (SME) support; modeling and simulation SME support; and cybersecurity. These support activities are for all AN/TPY-2 radars, in the Forward Based Mode (FBM) and Terminal Mode, and the SBX Radar to include the Weather Air Search Radar located on the SBX platform.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors					Project (Number/Name) MD11 / BMDS Radars				
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Basic Development Program - Material Release Get Well Plan - AMCOM	MIPR	AMCOM : AL	0.580	0.000		0.133	Nov 2022	0.000		-		0.000	0.000	0.713	0.000
Basic Development Program - Basic Development - SBX	SS/CPAF	Raytheon : MA	3.971	0.000		2.000	Nov 2022	0.000		-		0.000	0.000	5.971	0.000
Basic Development Program - Information Assurance AN/TPY-2	SS/CPAF	Raytheon : MA	30.767	0.000		0.000		0.000		-		0.000	0.000	30.767	0.000
Basic Development Program - Information Assurance SBX	SS/CPAF	Raytheon : MA	1.303	0.000		0.000		0.000		-		0.000	0.000	1.303	0.000
Basic Development Program - Material Release Get Well Plan - ATEC	MIPR	ATEC : AL	1.734	0.000		0.000		0.000		-		0.000	0.000	1.734	0.000
Basic Development Program - Material Release Get Well Plan - CCDC	SS/CPAF	CCDC AVMC : AL	18.899	0.000		0.000		0.000		-		0.000	0.000	18.899	0.000
Basic Development Program - Sys Integration & Tech Assessments	MIPR	CCDC AVMC : AL	29.415	0.000		0.000		0.000		-		0.000	0.000	29.415	0.000
Basic Development Program - X-Band Software Enhancements/ Development	SS/CPAF	RAYTHEON : TBD	168.760	12.466	Nov 2021	14.834	Nov 2022	25.431	Nov 2023	-		25.431	Continuing	Continuing	Continuing
Basic Development Program - X-Band Software Enhancements/ Development - CCDC	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND	0.000	8.348	Nov 2021	8.134	Nov 2022	9.899	Nov 2023	-		9.899	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors					Project (Number/Name) MD11 / BMDS Radars				
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		MISSILE CENTER (AVMC) : AL													
BMDS Radars Modeling & Simulation (M&S) - M&S Development - Boeing	C/CPAF	Boeing : AL	0.248	0.000		0.000		0.000		-		0.000	0.000	0.248	0.000
BMDS Radars Modeling & Simulation (M&S) - M&S Development - Decibel	C/CPAF	Decibel : AL	2.000	0.000		0.000		0.000		-		0.000	0.000	2.000	0.000
BMDS Radars Modeling & Simulation (M&S) - M&S Development - HWIL and Digital modeling capabilities for IMTP	C/CPAF	RAYTHEON : Various	0.000	27.200	May 2022	0.000		0.000		-		0.000	0.000	27.200	0.000
BMDS Radars Modeling & Simulation (M&S) - M&S Development - Northrop Grumman	C/CPAF	Northrop Grumman : AL	1.219	0.000		0.000		0.000		-		0.000	0.000	1.219	0.000
BMDS Radars Modeling & Simulation (M&S) - M&S Development - Raytheon	C/CPAF	RAYTHEON : Various	199.390	22.982	Jan 2022	21.456	Jan 2023	28.229	Jan 2024	-		28.229	Continuing	Continuing	Continuing
BMDS Radars Modeling & Simulation (M&S) - M&S Development-FFRDC/ UARC	Various	JHU, MITRE : MD, AL	1.171	0.000		0.000		0.000		-		0.000	0.000	1.171	0.000
BMDS Radars Modeling & Simulation (M&S) - M&S Development-LM	SS/CPIF	LOCKHEED MARTIN CORPORATION : NJ	11.743	8.611	Nov 2021	8.993	Feb 2023	5.378	Nov 2023	-		5.378	Continuing	Continuing	Continuing
BMDS Radars Modeling & Simulation (M&S) - MEDIC Development-CCDC	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	3.600	0.000		9.203	Dec 2022	4.360	Nov 2023	-		4.360	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)						Project (Number/Name)			
0400 / 4						PE 0603884C / Ballistic Missile Defense Sensors						MD11 / BMDS Radars			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 Radars Modeling & Simulation (M&S) - VV&C of Models	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	71.241	12.739	Dec 2021	11.192	Dec 2022	8.929	Dec 2023	-		8.929	Continuing	Continuing	Continuing
BMDS Radars Modeling & Simulation (M&S) - VV&C of Models - GTRI	SS/CPFF	GTRI (Georgia Tech Research Institute) : GA	0.526	0.000		0.000		0.000		-		0.000	0.000	0.526	0.000
Capability Development Program - Electronic Protection - GTRI	SS/CPFF	GTRI : GA	0.521	0.000		0.000		0.000		-		0.000	0.000	0.521	0.000
Capability Development Program - Enhanced Discrimination -M&S - CCDC	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	15.819	0.495	Nov 2021	1.000	Feb 2023	2.422	Nov 2023	-		2.422	Continuing	Continuing	Continuing
Capability Development Program - Enhanced Discrimination - MITRE	MIPR	MITRE : AL	4.363	0.000		0.000		0.000		-		0.000	0.000	4.363	0.000
Capability Development Program - AN/TPY-2 Capability Development - CCDC	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	30.440	0.000		0.000		0.000		-		0.000	0.000	30.440	0.000
Capability Development Program - AN/TPY-2	SS/CPFF	GTRI : GA	1.782	0.000		0.000		0.000		-		0.000	0.000	1.782	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors				Project (Number/Name) MD11 / BMDS Radars					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Capability Development - GTRI															
Capability Development Program - AN/TPY-2 Capability Development - JHU	SS/CPFF	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	6.699	0.000		0.000		0.000		-		0.000	0.000	6.699	0.000
Capability Development Program - AN/TPY-2 Capability Development - NSWC	MIPR	Naval Surface Warfare Center : VA	0.094	0.000		0.000		0.000		-		0.000	0.000	0.094	0.000
Capability Development Program - AN/TPY-2 Capability Development - PRIME	SS/CPAF	RAYTHEON : MA	248.721	14.441	Nov 2021	14.262	Nov 2022	19.132	Nov 2023	-		19.132	Continuing	Continuing	Continuing
Capability Development Program - Communication Development	MIPR	Secretary of the Air Force (SAF) : Various	8.886	0.000		0.000		0.000		-		0.000	0.000	8.886	0.000
Capability Development Program - Electronic Protection - CCDC	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	25.504	0.000		0.000		0.000		-		0.000	0.000	25.504	0.000
Capability Development Program - Electronic Protection - PRIME	C/CPAF	RAYTHEON : TBD	49.827	25.497	Nov 2021	9.292	Nov 2022	16.602	Nov 2023	-		16.602	Continuing	Continuing	Continuing
Capability Development Program - Enhanced Discrimination	C/CPAF	Raytheon : MA	334.044	23.098	Jan 2022	23.957	Nov 2022	6.417	Nov 2023	-		6.417	Continuing	Continuing	Continuing
Capability Development Program - Enhanced Discrimination - LM	SS/CPIF	Lockheed Martin : NJ	11.922	0.000		0.000		0.000		-		0.000	0.000	11.922	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors					Project (Number/Name) MD11 / BMDS Radars				
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Capability Development Program - High Altitude Electromagnetic Pulse (HEMP) Hardening Testing	MIPR	DOD - USA - ABERDEEN TEST CENTER (ATC) : MD	0.000	0.960	Dec 2021	0.000		0.000		-		0.000	0.000	0.960	0.000
Capability Development Program - Network and Infrastructure Services	C/CPAF	Jacobs Engineering : AL, CO, MA, VA	12.216	5.884	Nov 2021	6.213	Nov 2022	0.000		-		0.000	0.000	24.313	0.000
Capability Development Program - Post Intercept Assessment (PIA)	C/CPAF	Raytheon : MA	10.400	0.000		0.000		0.000		-		0.000	0.000	10.400	0.000
Capability Development Program - SBX Capability Development	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	0.907	0.753	Nov 2021	1.548	Nov 2022	15.823	Nov 2023	-		15.823	Continuing	Continuing	Continuing
Capability Development Program - SBX Capability Development - Raytheon	SS/CPAF	RAYTHEON : MA	22.904	0.000		14.387	Nov 2022	1.299	Nov 2023	-		1.299	Continuing	Continuing	Continuing
Capability Development Program - Science and Technology	C/CPFF	RAYTHEON : MA	0.000	1.800	Jun 2022	0.000		0.000		-		0.000	0.000	1.800	0.000
Capability Development Program - UEWR Capability Development - CCDC	MIPR	CCDC AVMC : AL	6.345	0.000		0.000		0.000		-		0.000	0.000	6.345	0.000
Sensors Directorate Operations - AN/TPY-2 WSMR Support	MIPR	WSMR (White Sands Missile Range) : NM	1.837	0.000		0.000		0.000		-		0.000	0.000	1.837	0.000
Sensors Directorate Operations - Army Hybrid Program Office	MIPR	DOD - USA - AVIATION AND MISSILE COMMAND (AMCOM)	11.304	0.000		0.000		0.000		-		0.000	0.000	11.304	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Se nsors				Project (Number/Name) MD11 / BMDS Radars					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		LOGISTICS CENTER (ALC) : AL													
Sensors Directorate Operations - Civilians/ Travel	Allot	MDA : AL, VA, MA	239.050	18.957	Oct 2021	20.874	Nov 2022	21.243	Oct 2023	-		21.243	Continuing	Continuing	Continuing
Sensors Directorate Operations - Contractor Support Services	C/CPFF	Various : Various	281.674	0.000		0.000		0.000		-		0.000	0.000	281.674	0.000
Sensors Directorate Operations - FFRDC/ UARC	SS/CPAF	GTRI, JHU/APL, MITRE, MIT/LL : AL, GA, MA, MD, VA	119.623	0.000		0.000		0.000		-		0.000	0.000	119.623	0.000
Sensors Directorate Operations - Network and Infrastructure Services	C/CPAF	Jacobs Engineering : AL, AK, CA, CO, HI, NM, VA	48.897	0.000		0.000		0.000		-		0.000	0.000	48.897	0.000
Sensors Directorate Operations - Network and Infrastructure Services - Network Management	C/FFP	Network Management Resources, Inc : VA	0.662	0.000		0.000		0.000		-		0.000	0.000	0.662	0.000
Sensors Directorate Operations - Other Govt Agencies	MIPR	Various : Various	38.063	0.000		0.000		0.000		-		0.000	0.000	38.063	0.000
Upgrade Clear Early Warning Radar - Advanced Object Classification - CCDC	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	0.000	2.625	Jul 2022	0.000		0.000		-		0.000	0.000	2.625	0.000
Upgrade Clear Early Warning Radar - Advanced Object Classification - USSF	MIPR	DOD - USSF - US SPACE FORCE (USSF) : CO	0.000	1.268	May 2022	0.000		0.000		-		0.000	0.000	1.268	0.000
Upgrade Clear Early Warning Radar - Facilities Site Activation/Admin Comms	MIPR	Various : AL, MA, AK	7.839	0.233	Apr 2022	0.000		0.000		-		0.000	0.000	8.072	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors				Project (Number/Name) MD11 / BMDS Radars					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Upgrade Clear Early Warning Radar - Radar Upgrade -- Prime Contractor	C/CPAF	Raytheon : MA	134.513	0.000		0.000		0.000		-		0.000	0.000	134.513	0.000
Joint Emerging Operational Need (JEON) - Software Enhancements/ Development	C/CPAF	Raytheon : MA	70.900	0.000		0.000		0.000		-		0.000	0.000	70.900	0.000
High Altitude Electromagnetic Pulse (HEMP) Hardening - FBM Site Modifications	MIPR	Various : Various	5.800	0.000		0.000		0.000		-		0.000	0.000	5.800	0.000
High Altitude Electromagnetic Pulse (HEMP) Hardening - Hardened Transportable Terminal (HTT) Communications	MIPR	DISA : VA	1.227	0.000		0.000		0.000		-		0.000	0.000	1.227	0.000
High Altitude Electromagnetic Pulse (HEMP) Hardening - Hardened Transportable Terminal (HTT) Engineering, Development and Sustainment	MIPR	Tobyhanna Army Depot (TYAD) : PA	5.773	0.000		0.000		0.000		-		0.000	0.000	5.773	0.000
High Altitude Electromagnetic Pulse (HEMP) Hardening - Power Distribution Centers (PDC) and Commercial Power	C/TBD	Various : Various	39.600	0.000		0.000		0.000		-		0.000	0.000	39.600	0.000
High Altitude Electromagnetic Pulse (HEMP) Hardening - Power Distribution System	SS/CPAF	Raytheon : MA	16.600	0.000		0.000		0.000		-		0.000	0.000	16.600	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors				Project (Number/Name) MD11 / BMDS Radars					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
(PDS) Development and Integration															
Subtotal			2,361.323	188.357		167.478		165.164		-		165.164	Continuing	Continuing	N/A
Remarks N/A															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 Radars Modeling & Simulation (M&S) - Network and Infrastructure Services	C/CPAF	JACOBS TECHNOLOGY INC. : Various	0.000	1.690	Jan 2022	0.000		0.000		-		0.000	0.000	1.690	0.000
BMDS Radars Modeling & Simulation (M&S) - VV&C of Models - GTRI	SS/CPFF	GEORGIA TECH APPLIED RESEARCH CORPORATION : GA	0.000	0.791	Nov 2021	0.860	Feb 2023	0.879	Oct 2023	-		0.879	Continuing	Continuing	Continuing
BMDS Radars Modeling & Simulation (M&S) - Warfighter Exercises	SS/CPIF	RAYTHEON : MA	19.294	1.989	Feb 2022	2.594	Dec 2022	2.759	Feb 2024	-		2.759	Continuing	Continuing	Continuing
Capability Development Program - AN/TPY-2 Capability Development - GTRI	SS/CPFF	GEORGIA TECH APPLIED RESEARCH CORPORATION : GA	0.000	1.110	Nov 2021	1.888	Nov 2022	1.521	Nov 2023	-		1.521	Continuing	Continuing	Continuing
Capability Development Program - AN/TPY-2 Capability Development - JHU	SS/CPFF	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	0.000	1.080	Nov 2021	1.093	Nov 2022	1.417	Nov 2023	-		1.417	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>						Project (Number/Name) MD11 / <i>BMDs Radars</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Capability Development Program - AN/TPY-2 Capability Development - MITRE	MIPR	DOD - USA - COMMUNICATIONS ELECTRONICS COMMAND (CECOM) : MD	0.000	0.366	Oct 2021	0.894	Oct 2022	0.921	Oct 2023	-		0.921	Continuing	Continuing	Continuing
Capability Development Program - Network And Infrastructure Services	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	0.000	0.000		0.000		6.423	Nov 2023	-		6.423	Continuing	Continuing	Continuing
Sensors Directorate Operations - AN/TPY-2 WSMR Support	MIPR	DOD - USA - WHITE SANDS MISSILE RANGE (WSMR) : NM	0.000	1.019	Oct 2021	0.975	Dec 2022	0.826	Oct 2023	-		0.826	Continuing	Continuing	Continuing
Sensors Directorate Operations - Army Hybrid Program Office	MIPR	DOD - USA - AVIATION AND MISSILE COMMAND (AMCOM) LOGISTICS CENTER (ALC) : AL	0.000	0.957	Dec 2021	1.100	Dec 2022	1.122	Dec 2023	-		1.122	Continuing	Continuing	Continuing
Sensors Directorate Operations - Contractor Support Services	Various	Various : Various	0.000	1.451	Oct 2021	1.314	Oct 2022	0.696	Oct 2023	-		0.696	Continuing	Continuing	Continuing
Sensors Directorate Operations - Contractor Support Services - Engineering	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : CA	0.000	5.240	Oct 2021	6.640	Jan 2023	9.099	Oct 2023	-		9.099	Continuing	Continuing	Continuing
Sensors Directorate Operations - Contractor Support Services - Logistics	C/CPFF	VENTURI, INC. : AL	0.000	1.107	Oct 2021	0.000		1.668	Oct 2023	-		1.668	Continuing	Continuing	Continuing
Sensors Directorate Operations - Contractor Support Services - Quality and Mission Assurance	C/CPFF	AI SOLUTIONS, INC. : MD	0.000	0.867	Oct 2021	1.112	Nov 2022	1.220	Oct 2023	-		1.220	Continuing	Continuing	Continuing
Sensors Directorate Operations - Contractor	C/CPFF	STRATEGIC ALLIANCE	0.000	2.859	Oct 2021	2.375	Jan 2023	2.827	Oct 2023	-		2.827	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors					Project (Number/Name) MD11 / BMDS Radars				
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Support Services - Warfighter Integration		SOLUTIONS LLC : VA													
Sensors Directorate Operations - FFRDC - MITRE	MIPR	DOD - USA - COMMUNICATIONS ELECTRONICS COMMAND (CECOM) : TBD	0.000	4.078	Nov 2021	4.384	Nov 2022	4.476	Nov 2023	-		4.476	Continuing	Continuing	Continuing
Sensors Directorate Operations - Network and Infrastructure Services	C/CPAF	Various : Various	0.000	0.750	Jan 2022	1.000	Jan 2023	1.070	Jan 2024	-		1.070	Continuing	Continuing	Continuing
Sensors Directorate Operations - UARC - JHU/ APL	SS/CPFF	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : VARIOUS	0.000	2.166	Nov 2021	2.441	Dec 2022	2.481	Nov 2023	-		2.481	Continuing	Continuing	Continuing
Sensors Directorate Operations - UEWR Network and Infrastructure Services	Various	Various : Various	0.000	0.000		0.000		0.200	Nov 2023	-		0.200	Continuing	Continuing	Continuing
Upgrade Clear Early Warning Radar - Automatic Data Processing Equipment (ADPE) Rehost	MIPR	DOD - USSF - US SPACE FORCE (USSF) : Various	0.000	0.000		1.460	Jan 2023	0.000		-		0.000	0.000	1.460	0.000
Subtotal			19.294	27.520		30.130		39.605		-		39.605	Continuing	Continuing	N/A
Remarks															
Operations and sustainment support for the U.S. Space Force (USSF) COBRA DANE (CD), and Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2) Radars Contract Logistics Support (CLS) are Operations and Maintenance (O&M) Defense-Wide appropriations and are described in the Missile Defense Agency (MDA) O-Documents.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)					Project (Number/Name)				
0400 / 4						PE 0603884C / Ballistic Missile Defense Sensors					MD11 / BMDS Radars				
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Sensors Directorate Operations - Contractor Support Services - Acquisition	C/CPFF	BCF SOLUTIONS, INC. : VA	0.000	2.720	Oct 2021	1.554	Oct 2022	3.362	Oct 2023	-		3.362	Continuing	Continuing	Continuing
Sensors Directorate Operations - Contractor Support Services - Various	Various	Various : Various	0.000	2.291	Oct 2021	1.608	Oct 2022	1.800	Oct 2023	-		1.800	Continuing	Continuing	Continuing
Subtotal			0.000	5.011		3.162		5.162		-		5.162	Continuing	Continuing	N/A
Remarks															
N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			2,380.617	220.888		200.770		209.931		-		209.931	Continuing	Continuing	N/A
Remarks															
Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023									
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)									
0400 / 4					PE 0603884C / Ballistic Missile Defense Sensors					MD11 / BMDS Radars									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028		
GTI-ISR (21) (Missile Defense System Ground Test)					◆														
FTX-43 (OTHER, DT Tracking Exercise Flight Test)					▲														
(EX) AIR AND MISSILE DEFENSE EXERCISE 22					◆	◆	◆												
FTT-21 (TH, DT Intercept Flight Test)						▲													
(EX) EAGLE RESOLVE 22						▲													
GTI-08a (N/I) (Missile Defense System Ground Test)							◆												
GTI-09 Sprint 1 (E/C) (Missile Defense System Ground Test)								◆											
FTX-45								▲											
GTD-08a (N/I) (Missile Defense System Ground Test)								◆											
(EX) AIR AND MISSILE DEFENSE EXERCISE 23								◇	◇	◇									
GTI-09 Sprint 2 (E/C) (Missile Defense System Ground Test)								◇											
SICO-09-3 Ground Test								◇											
FTT-25 (TH, DT/OT Intercept Flight Test)									△										
SICO 9-4 Ground Test									◇										
FTX-26 (OT) (SN, OT Target Only Flight Test)										△									
GTI-08b (N/I)										◇									
GTI-101 (E/C)											◇								
FTG-12 (GM, DT/OT Intercept Flight Test)										△									
(EX) AIR AND MISSILE DEFENSE EXERCISE 24										◇	◇	◇							
GTI-ASI (24) (Missile Defense System Ground Test)											◇								
GTD-08b (N/I)											◇								
FTX-28 E2 (TH, DT/OT Tracking Exercise Flight Test)												△							
FTX-28 E1 (TH, DT/OT Tracking Exercise Flight Test)													△						
FTX-28 E3 (TH, DT/OT Tracking Exercise Flight Test)														△					

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023																			
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors										Project (Number/Name) MD11 / BMDS Radars									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
GTI-102 (I)															◆														
GTI-ISR (23) (Missile Defense System Ground Test)															◆														
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)																◆													
GTI-ISR (25) (Missile Defense System Ground Test)																◆													
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)																◆													
JFTX-01 E1 (JAPAN, DT Tracking Exercise Flight Test)																▲													
JFTX-01 E2 (JAPAN, DT Tracking Exercise Flight Test)																▲													
FTT-26 (MRBM T1)																▲													
GTD-13 (N/I) (Missile Defense System Ground Test)																	◆												
GTI-12 (E/C)																	◆												
GTD-12 (E/C) (Missile Defense System Ground Test)																		◆											
GTI-ASI (26) (Missile Defense System Ground Test)																		◆											
TH CTV-03 (TH, DT Interceptor Only Flight Test)																		▲											
GTI-14 Sprint 1 (N/I)																			◆										
GTI-24 (N/I)																			◆										
FTG-16 (GM, DT Intercept Flight Test)																				▲									
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)																				◆									
SICO-24 (N/I)																					◆								
GTI-15 Sprint 1 (E/C)																					◆								
FTT-22 (TH, DT/OT Intercept Flight Test)																					▲								
FTG-17 (GM, DT/OT Intercept Flight Test)																						▲							
GTD-14 (N/I) ((Missile Defense System Ground Test)																						◆							
GTI-ISR (27) (Missile Defense System Ground Test)																						◆							
GTI-15 Sprint 2 (E/C)																						◆							

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023														
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors										Project (Number/Name) MD11 / BMDS Radars									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
GTD-15 (E/C)																					◇								
FTG-18 (DT/OT)																						△							
GTI-25 (N/I)																					◇								
GTI-ASI (28)																					◇								
GTI-16 Sprint 1 (N/I)																					◇								

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MD11 / <i>BMDS Radars</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GTI-ISR (21) (Missile Defense System Ground Test)	1	2022	1	2022
FTX-43 (OTHER, DT Tracking Exercise Flight Test)	1	2022	1	2022
(EX) AIR AND MISSILE DEFENSE EXERCISE 22	1	2022	3	2022
FTT-21 (TH, DT Intercept Flight Test)	2	2022	2	2022
(EX) EAGLE RESOLVE 22	2	2022	2	2022
GTI-08a (N/I) (Missile Defense System Ground Test)	3	2022	3	2022
GTI-09 Sprint 1 (E/C) (Missile Defense System Ground Test)	4	2022	4	2022
FTX-45	4	2022	4	2022
GTD-08a (N/I) (Missile Defense System Ground Test)	1	2023	1	2023
(EX) AIR AND MISSILE DEFENSE EXERCISE 23	1	2023	3	2023
GTI-09 Sprint 2 (E/C) (Missile Defense System Ground Test)	2	2023	2	2023
SICO-09-3 Ground Test	2	2023	2	2023
FTT-25 (TH, DT/OT Intercept Flight Test)	3	2023	3	2023
SICO 9-4 Ground Test	3	2023	3	2023
FTX-26 (OT) (SN, OT Target Only Flight Test)	4	2023	4	2023
GTI-08b (N/I)	4	2023	4	2023
GTI-101 (E/C)	1	2024	1	2024
FTG-12 (GM, DT/OT Intercept Flight Test)	1	2024	1	2024
(EX) AIR AND MISSILE DEFENSE EXERCISE 24	1	2024	3	2024
GTI-ASI (24) (Missile Defense System Ground Test)	2	2024	2	2024
GTD-08b (N/I)	2	2024	2	2024
FTX-28 E2 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>		Project (Number/Name) MD11 / <i>BMDS Radars</i>	
		Start		End	
Events	Quarter	Year	Quarter	Year	
FTX-28 E1 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024	
FTX-28 E3 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024	
GTI-102 (I)	3	2024	3	2024	
GTI-ISR (23) (Missile Defense System Ground Test)	3	2024	3	2024	
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)	1	2025	1	2025	
GTI-ISR (25) (Missile Defense System Ground Test)	2	2025	2	2025	
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)	3	2025	3	2025	
JFTX-01 E1 (JAPAN, DT Tracking Exercise Flight Test)	3	2025	3	2025	
JFTX-01 E2 (JAPAN, DT Tracking Exercise Flight Test)	3	2025	3	2025	
FTT-26 (MRBM T1)	3	2025	3	2025	
GTD-13 (N/I) (Missile Defense System Ground Test)	4	2025	4	2025	
GTI-12 (E/C)	1	2026	1	2026	
GTD-12 (E/C) (Missile Defense System Ground Test)	2	2026	2	2026	
GTI-ASI (26) (Missile Defense System Ground Test)	3	2026	3	2026	
TH CTV-03 (TH, DT Interceptor Only Flight Test)	3	2026	3	2026	
GTI-14 Sprint 1 (N/I)	4	2026	4	2026	
GTI-24 (N/I)	4	2026	4	2026	
FTG-16 (GM, DT Intercept Flight Test)	2	2027	2	2027	
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)	2	2027	2	2027	
SICO-24 (N/I)	3	2027	3	2027	
GTI-15 Sprint 1 (E/C)	3	2027	3	2027	
FTT-22 (TH, DT/OT Intercept Flight Test)	3	2027	3	2027	
FTG-17 (GM, DT/OT Intercept Flight Test)	4	2027	4	2027	
GTD-14 (N/I) ((Missile Defense System Ground Test)	4	2027	4	2027	
GTI-ISR (27) (Missile Defense System Ground Test)	4	2027	4	2027	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors	Project (Number/Name) MD11 / BMDS Radars	
		Start		End
Events		Quarter	Year	Quarter Year
GTI-15 Sprint 2 (E/C)		1	2028	1 2028
GTD-15 (E/C)		2	2028	2 2028
FTG-18 (DT/OT)		3	2028	3 2028
GTI-25 (N/I)		3	2028	3 2028
GTI-ASI (28)		4	2028	4 2028
GTI-16 Sprint 1 (N/I)		4	2028	4 2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Se nsors				Project (Number/Name) MC11 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC11: Cyber Operations	54.599	19.504	21.339	20.727	-	20.727	20.421	21.694	20.709	21.124	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

Sustain the Department of Defense Instruction (DoDI) 8510.01 Risk Management Framework (RMF) for DoD Information Technology (IT) requirement for the Missile Defense Agency (MDA) Ground Sensors Directorate and conduct Security Control Assessments (SCA) activities, analysis of validation results, risk assessments, and reviews of proposed Program Manager/Information System Security Manager (PM/ISSM) Plans of Action and Milestones (POA&M) for MDA Ground Sensors mission and mission support systems. It also includes support for external cybersecurity assessments and penetration testing of the Ground Sensors mission systems, both in laboratory developmental testing and in ground test activities, in accordance with Director, Operational Test and Evaluation directives and the Integrated Master Test Plan. It maintains the Assessment and Authorization (A&A) data repository, capturing the RMF documentation (artifacts, validation results, Cybersecurity Risk Assessment results, cybersecurity scorecard, and Authorizing Official (AO) authorization decisions) and POA&M for all MDA information systems. It positions Ground Sensors assets to complete transition to National Institute of Standards and Technology (NIST) Special Publication 800-53 revision 5 requirements (i.e. RMF 2.0) once DoD requirements are released. This project supports the alignment, development, and implementation of an integrated Tier 2 Cyber Security Service Provider (CSSP) capability on the Ground Sensors mission systems in accordance with the DoD Cybersecurity Discipline Implementation Plan and DoDI 8530.01 Cybersecurity Activities Support to DoD Information Network Operations.

Provides the monitoring, prioritization, and tracking of Cybersecurity mitigation detailed in Information Technology security POA&Ms. The activities include preparation of A&A documentation and accreditation recommendations to the MDA Senior Information Security Officer/SCA and AO. Independent Verification and Validation team actions ensure the availability, integrity, authentication, confidentiality, and non-repudiation of the MDA mission; test; and administrative systems. These activities are necessary to comply with the Federal Information Security Management Act.

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

	FY 2022	FY 2023	FY 2024
Title: Network / System Certification and Accreditation (C&A)	19.504	21.339	20.727
Articles:	-	-	-
Description: Cyber Operations funds Ground Sensors Directorate Information System Security Manager and Information System Security Officer civilian salaries as well as cybersecurity engineering and architecture planning for program information technology systems. This project plans and tests the cybersecurity controls for the Missile Defense System and maintains RMF authorizations for Ground Sensors managed information systems, conducts Controls Validation Testing/SCA of Ground Sensors mission and support systems, and provides and maintains POA&M to mitigate cybersecurity deficiencies. Cyber Operations conducts annual			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MC11 / <i>Cyber Operations</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
<p>cybersecurity program reviews on the Sensors enclaves to assess compliance in implementing and maintaining controls. This effort supports the alignment, development, and implementation of an integrated Tier 2 CSSP capability on the Ground Sensors mission systems in accordance with the DoD Cybersecurity Discipline Implementation Plan and DoDI 8530.01 Cybersecurity Activities Support to DoD Information Network Operations. Develop and maintain the software bill of materials (SBOM) for all developed and delivered mission and mission support software as directed in the President's "Executive Order on Improving the Nation's Cybersecurity" dated May 12, 2021. Execution of developmental cybersecurity test events for Army Navy/Transportable Radar Surveillance and Control-2(AN/TPY-2), Sea-Based X-Band (SBX) radar, and Long Range Discrimination Radar (LRDR).</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> -Develop and maintain the SBOM for all developed and delivered mission and mission support software as directed in the President's Executive Order on Improving the Nation's Cybersecurity dated May 12, 2021. -Execution of four (4) developmental cybersecurity test events for AN/TPY-2 (2), SBX (1), and LRDR (1) and two (2) operational cybersecurity tests (SBX). <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Funds Ground Sensors assets to complete transition to NIST Special Publication 800-53 revision 5 requirements (i.e. RMF 2.0) once DoD requirements are released. - Execution of two (2) operational cybersecurity test events (LRDR). <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>			
Accomplishments/Planned Programs Subtotals	19.504	21.339	20.727

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	50.261	50.269	48.248	-	48.248	49.164	50.445	51.542	52.859	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency								Date: March 2023			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>				Project (Number/Name) MC11 / <i>Cyber Operations</i>			

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	44.188	49.367	50.549	-	50.549	56.624	58.020	59.193	60.615	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	147.241	164.668	177.868	-	177.868	196.952	176.633	162.632	162.578	Continuing	Continuing
• 0604672C: <i>Homeland Defense Radar-Hawaii</i>	75.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	75.000
• 0604873C: <i>Long Range Discrimination Radar (LRDR)</i>	129.552	75.120	103.517	-	103.517	100.114	68.815	69.219	65.521	Continuing	Continuing
• 0604879C: <i>Ballistic Missile Defense Sensor Test</i>	77.428	88.326	111.049	-	111.049	90.697	103.885	154.905	127.807	Continuing	Continuing
• 0901598C: <i>Management HQ - MDA</i>	24.102	25.259	28.363	-	28.363	29.039	29.601	30.174	30.760	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Ground Sensors Directorate will execute the DoDI 8510.01 RMF for DoD IT requirement on several existing Radar Prime Contracts to include the Radar Development Contract, the Radar Test Contract, LRDR, and the Contractor Logistics Support contract. Ground Sensors will also employ Contracted Service Support resources through the Technical, Engineering, Advisory, & Management (TEAMS) and TEAMS Next contracts, Federally Funded Research and Development (MITRE) support, and via Military Interdepartmental Purchase Request (MIPR) through Military Sealift Command. Ground Sensors will conduct SCA activities, developmental and operational cybersecurity testing, analyze validation results, accomplish risk assessments, and perform reviews of proposed PM/ISSM POA&M for MDA Ground Sensors mission and mission support systems.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors					Project (Number/Name) MC11 / Cyber Operations				
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - AN/TPY 2 Cybersecurity Compliance	SS/CPAF	RAYTHEON : MA	0.000	2.406	Oct 2021	3.057	Oct 2022	2.502	Oct 2023	-		2.502	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Cybersecurity Compliance	SS/CPAF	RAYTHEON : Various	0.000	0.000		0.428	Nov 2022	0.000		-		0.000	0.000	0.428	0.000
Network / System Certification and Accreditation (C&A) - LRDR Cybersecurity Compliance	SS/FPIF	LOCKHEED MARTIN CORPORATION : NJ	0.000	1.152	Aug 2022	1.739	Oct 2022	1.682	Oct 2023	-		1.682	Continuing	Continuing	Continuing
Subtotal			0.000	3.558		5.224		4.184		-		4.184	Continuing	Continuing	N/A
Remarks N/A															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - AN/TPY 2 CSSP Development and Implementation	SS/CPAF	Raytheon : MA	13.647	5.219	Oct 2021	0.000		0.000		-		0.000	0.000	18.866	0.000
Network / System Certification and Accreditation (C&A) - AN/TPY 2 Cybersecurity Compliance	SS/CPAF	RAYTHEON : MA	9.002	0.000		1.643	Mar 2023	1.676	Oct 2023	-		1.676	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>						Project (Number/Name) MC11 / <i>Cyber Operations</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services (Booz Allen) - Consolidated in Contract Support Services	C/CPFF	Booz Allen Hamilton : AL, CO, VA	5.134	0.000		0.000		0.000		-		0.000	0.000	5.134	0.000
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services (Torch Technologies) - Consolidated in Contract Support Services	C/CPFF	Torch Technologies : AL, CO, VA	2.641	0.000		0.000		0.000		-		0.000	0.000	2.641	0.000
Network / System Certification and Accreditation (C&A) - Civilian Salaries/Travel	Allot	MDA : AL, CO, VA	2.082	0.519	Oct 2021	0.483	Oct 2022	0.500	Oct 2023	-		0.500	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Contract Support Services	Various	MDA : Various	5.597	0.000		0.000		0.000		-		0.000	0.000	5.597	0.000
Network / System Certification and Accreditation (C&A) - Contract Support Services - Cybersecurity Engineering - BAH	C/CPFF	BOOZ ALLEN HAMILTON INC. : VARIOUS	0.000	0.000		2.850	Nov 2022	3.377	Nov 2023	-		3.377	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Contract Support Services - Cybersecurity Engineering - DAC	C/CPFF	DECISIVE ANALYTICS CORPORATION : AL	0.000	1.025	Nov 2021	1.112	Nov 2022	0.765	Nov 2023	-		0.765	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>						Project (Number/Name) MC11 / <i>Cyber Operations</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - Contract Support Services - Cybersecurity Engineering - Parsons	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : VA	0.000	1.658	Nov 2021	1.959	Nov 2022	1.997	Nov 2023	-		1.997	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Contract Support Services - Cybersecurity Engineering - Serco	C/CPFF	SERCO INC. : VARIOUS	0.000	0.000		0.000		0.368	Nov 2023	-		0.368	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Contract Support Services - Cybersecurity Engineering - System High Corporation	SS/CPFF	SYSTEM HIGH CORPORATION : Various	0.000	2.053	Nov 2021	0.000		0.000		-		0.000	0.000	2.053	0.000
Network / System Certification and Accreditation (C&A) - Contract Support Services - Cybersecurity Engineering - Various	C/Various	Various : Various	0.000	0.865	Nov 2021	0.000		0.000		-		0.000	0.000	0.865	0.000
Network / System Certification and Accreditation (C&A) - Cybersecurity Supply Chain Compliance	SS/CPAF	Raytheon : MA	9.849	0.000		0.000		0.000		-		0.000	0.000	9.849	0.000
Network / System Certification and Accreditation (C&A) - LRDR Cybersecurity Compliance	SS/FPIF	Lockheed Martin : NJ	5.321	0.000		0.000		0.000		-		0.000	0.000	5.321	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>						Project (Number/Name) MC11 / <i>Cyber Operations</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - SBX Cybersecurity Compliance	MIPR	Military Sealift Command : VA	1.326	0.000		0.000		0.000		-		0.000	0.000	1.326	0.000
Network / System Certification and Accreditation (C&A) - SBX Cybersecurity Compliance - Gryphon	C/CPIF	GRYPHON TECHNOLOGIES, L.C. : VARIOUS	0.000	1.275	Nov 2021	1.293	Nov 2022	1.711	Nov 2023	-		1.711	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - SBX Cybersecurity Compliance - PRIME	SS/CPAF	RAYTHEON : MA	0.000	1.730	Nov 2021	3.253	Nov 2022	2.903	Nov 2023	-		2.903	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Sensors Test Cybersecurity Compliance	Various	Various : Various	0.000	0.000		1.874	Nov 2022	1.500	Nov 2023	-		1.500	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Systems Engineering Cybersecurity	Various	Various : VARIOUS	0.000	1.381	Nov 2021	1.158	Feb 2023	1.247	Nov 2023	-		1.247	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Systems Engineering Cybersecurity - MITRE	MIPR	DOD - USA - COMMUNICATIONS ELECTRONICS COMMAND (CECOM) : MD	0.000	0.221	Nov 2021	0.490	Nov 2022	0.499	Nov 2023	-		0.499	Continuing	Continuing	Continuing
Subtotal			54.599	15.946		16.115		16.543		-		16.543	Continuing	Continuing	N/A
Remarks N/A															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency											Date: March 2023			
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors					Project (Number/Name) MC11 / Cyber Operations				
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	54.599	19.504		21.339		20.727		-		20.727	Continuing	Continuing	N/A	

Remarks

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

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PE 0603884C: *Ballistic Missile Defense Sensors* **UNCLASSIFIED** **Volume 2a - 140**
 Missile Defense Agency Page 36 of 43 R-1 Line #80

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors	Project (Number/Name) MC11 / Cyber Operations	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Risk Management Framework (RMF) Assessment and Authorization (A&A) package preparation and submission	1	2022	4	2028
Cyber Security Program Policy / Risk Management	1	2022	4	2028
Cyber Security Mitigation Monitoring and Tracking	1	2022	4	2028
Missile Defense System Cyber Security Policy Development	1	2022	4	2028
Integrated Cyber Security Service Provider	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program-Wide Support	136.803	9.731	8.393	8.501	-	8.501	7.637	9.450	9.844	11.142	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Wide Support (PWS) is allocated on a pro-rata basis across multiple Agency program elements (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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	9.731	8.393	8.501
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p><i>FY 2023 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2024 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> N/A</p>			
Accomplishments/Planned Programs Subtotals		9.731	8.393
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors				Project (Number/Name) MD40 / Program-Wide Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations and Support Services #2	C/CPFF	HUNTSVILLE REHABILITATION FOUNDATION : Various	0.000	0.000		0.000		0.902	Nov 2023	-		0.902	Continuing	Continuing	Continuing
Program Wide Support - Agency Facilities and Maintenance	MIPR	Various Multi: : AL, CO, CA, VA	14.100	0.000		0.000		0.000		-		0.000	0.000	14.100	0.000
Program Wide Support - Agency Operations Management	C/CPAF	Various : Multi: AL, CA, CO, VA	8.600	0.000		0.000		0.000		-		0.000	0.000	8.600	0.000
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	Various : AK, AL, CO, CA, HI, MD, VA	13.481	0.000		0.000		0.000		-		0.000	0.000	13.481	0.000
Program Wide Support - Agency Operations and Support Services	C/CPFF	VENTURI, INC. : Multi: AK, AL, CO, CA, HI, MD, VA	85.491	9.731	Nov 2021	8.393	Nov 2022	3.095	Nov 2023	-		3.095	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services #3	C/CPFF	Various : Various	0.000	0.000		0.000		0.171	Nov 2023	-		0.171	Continuing	Continuing	Continuing
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various : Various	15.131	0.000		0.000		0.000		-		0.000	0.000	15.131	0.000
Subtotal			136.803	9.731		8.393		4.168		-		4.168	Continuing	Continuing	N/A
Remarks															
In accordance with the Financial Management Regulation cost category definitions, some items have transferred to appropriate cost categories.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors						Project (Number/Name) MD40 / Program-Wide Support			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations and Support Services	C/CPFF	VENTURI, INC. : AL	0.000	0.000		0.000		4.333	Nov 2023	-		4.333	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		4.333		-		4.333	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			136.803	9.731		8.393		8.501		-		8.501	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023														
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors										Project (Number/Name) MD40 / Program-Wide Support									
Significant Event Complete ▲					Milestone Decision Complete ★					Element Test Complete ◆					System Level Test Complete ●					Complete Activity ◆									
Significant Event Planned △					Milestone Decision Planned ☆					Element Test Planned ◇					System Level Test Planned ○					Planned Activity ◇									
										FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
MD40 Program-Wide Support										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇			

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / Ballistic Missile Defense Sensors	Project (Number/Name) MD40 / Program-Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	4,383.847	616.800	588.847	597.720	-	597.720	620.823	639.398	648.954	650.432	Continuing	Continuing
MD24: System Engineering & Integration	1,514.135	158.835	175.122	171.129	-	171.129	178.396	182.240	185.922	176.333	Continuing	Continuing
MD21: Homeland Cruise Missile Defense Architecture	3.050	13.263	10.852	0.783	-	0.783	0.000	0.000	0.000	0.000	Continuing	Continuing
MT23: Enabling - Test	219.609	41.520	44.245	44.248	-	44.248	48.151	48.040	48.972	49.952	Continuing	Continuing
MD28: Intelligence & Security	365.255	39.102	42.036	56.654	-	56.654	59.093	59.964	60.933	61.932	Continuing	Continuing
MD30: BMD Information Management Systems	735.046	88.568	87.822	91.609	-	91.609	92.439	96.898	95.602	97.511	Continuing	Continuing
MC30: Cyber Operations	336.532	100.256	80.519	89.111	-	89.111	91.655	95.931	97.852	99.809	Continuing	Continuing
MD31: Modeling & Simulation	532.457	78.389	71.045	65.702	-	65.702	67.222	67.717	69.247	70.614	Continuing	Continuing
MC31: Engineering Cyber Operations	88.396	40.913	24.978	25.854	-	25.854	29.379	30.010	30.663	31.319	Continuing	Continuing
MD32: Quality, Safety, and Mission Assurance	354.246	32.852	30.737	31.383	-	31.383	32.145	32.763	33.432	34.115	Continuing	Continuing
MD40: Program-Wide Support	235.121	23.102	21.491	21.247	-	21.247	22.343	25.835	26.331	28.847	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Increase in funding from Fiscal Year (FY) 2023 to FY 2024 provides increased cyber contractor support for Missile Defense System Cyber Security Service Provider Tier II expansion, Development Security Operations (DEVSECOPS) software services, and new definitions, analytical tools and phenomenologies for complex and advanced threats.

A. Mission Description and Budget Item Justification

The Missile Defense System 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 Missile Defense System functional requirements, conduct Analyses of Alternatives for the Department of Defense, and provide engineering requirements, execution support, and pre- and post-mission analysis for System-level tests
- Provide validated models and simulations for System assessment
- Assess and document System performance (through data collection and analysis) and deliver capabilities to the Warfighter

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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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>I BMD Enabling Programs</i>
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- Provide multi-disciplinary security and intelligence support for acquisition, development, test, and deployment of current and future Missile Defense System capabilities
- Identify potential threats and vulnerabilities to the Missile Defense Agency (MDA) and the Missile Defense System and develop and implement strategies to mitigate those risks
- Provide Information Management tools and products supporting the development of Missile Defense System 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 Missile Defense System threat discrimination capability development to enhance System effectiveness against the evolving adversary threat. The end result will be a Missile Defense System architecture more capable of identifying and destroying reentry vehicles with a higher degree of confidence, improving Warfighter shot doctrine, and using interceptor inventory more efficiently. Missile Defense System threat discrimination development is budgeted for in 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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	623.644	591.847	613.589	-	613.589
Current President's Budget	616.800	588.847	597.720	-	597.720
Total Adjustments	-6.844	-3.000	-15.869	-	-15.869
• Congressional General Reductions	0.000	-3.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-10.187	0.000			
• Other Adjustment	3.343	0.000	-15.869	-	-15.869

Change Summary Explanation

The decrease in FY 2024 reflects alignment of resources to support higher Agency priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD24: System Engineering & Integration	1,514.135	158.835	175.122	171.129	-	171.129	178.396	182.240	185.922	176.333	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

System Engineering & Integration (SE&I) defines, designs, tests and integrates the Missile Defense System, 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 Missile Defense System that provides the required performance
- Provide system-level engineering support to Missile Defense System 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 Missile Defense System capabilities and limitations
- Develop performance assessment requirements, verify Missile Defense System 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 Missile Defense System 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 Missile Defense System is complementary to and interoperable with North Atlantic Treaty Organization (NATO) and other theater systems
- Develop anti-tamper approaches to enable international fielding

The Missile Defense System 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 Missile Defense System functional, performance, and interface requirements for achieving the improved capabilities.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
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 2022	FY 2023	FY 2024
Title: Requirements and Design			39.956	37.295	43.842
Articles:			-	-	-
<p>Description: The Requirements and Design effort develops Missile Defense System-level requirements and specifications and drives the integration of the System. Requirements and Design allocates System-level requirements to the Elements and adjudicates Element level specifications to provide required capabilities for the Warfighter.</p> <ul style="list-style-type: none"> - Define Missile Defense System 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 Missile Defense System 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 - 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 Missile Defense System design - Develop Specification Change Notices 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 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 Missile Defense System Lethality Program Plan <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Conduct Next Generation Interceptor lethality modeling and simulation to support performance assessment and test requirements development <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Provide engineering support and analysis for Next Generation Interceptor development efforts leading from Preliminary Design Review to Critical Design Review - Continue Next Generation Interceptor lethality modeling and simulation <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
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 2022	FY 2023
Increase from FY 2023 to FY 2024 provides lethality modeling and engineering analysis for Next Generation Interceptor development efforts.			FY 2024
Title: Integrated Air and Missile Defense (IAMD) <p align="right">Articles:</p> <p>Description: The IAMD effort provides a consistent, disciplined systems engineering process using a joint service system 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 into 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 Modeling and Simulation (M&S) model improvements, support for accurate representation of IAMD capabilities in 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 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 the Joint Tactical Integrated Fire Control (JTIFC) architecture (including its associated capabilities) and the development of a Joint Integrated Fire Control Network to enable the capability to provide fire control quality data, at the measurement level, from the right sensor to the right shooter to engage the right target. This includes ensuring that all activities are in alignment with the DoD 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.</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 Joint Track Management Capability (JTMC) Bridge, and demonstration in increasingly realistic environments and scenarios by leveraging live demonstrations and tracking events. - 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 - Enhance M&S to support participation in annual Nimble Fire exercises - Continue engineering activities supporting critical Joint Command and Control and interoperability needs 		16.926 -	21.576 -
			21.250 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
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 2022	FY 2023
<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 DoD and other Services with respect to JADC2 capabilities</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <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 programs of record (POR) integration efforts to evaluate optimal solutions for distributed Joint Multi-Platform Advanced Combat Identification (JMAC) Architecture - 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 against the advanced threat - 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 - Support integration of IAMD Technical Authority efforts into JADC2, as well as 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 the 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 Technical Authority (TA) efforts 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
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 2022	FY 2023	FY 2024
<p>- Enable maturation and fielding of ABMAs for participation with the JTIFC architecture. This is a new effort which will enable the use of automated battle management aides to support the operators with cross service engagements.</p> <p>FY 2024 Plans:</p> <p>- Continue MSCT software and integration with CEC/IFCN and Air Force and Marine Corps systems - integrate fire control networks with tactical level Command and Control nodes for battle management</p> <p>- Mature and incorporate hypersonic missile tracking into the JTMC Bridge for cross-Service integrated fire control</p> <p>- Implementation of contracting across the JTMC Bridge for integrated fire control sensor to weapon support across Services</p> <p>- Fully integrate JMAC into Army IBCS, Navy CEC, LTAMDS, G/ATOR, CAC2S, E-2D, USAF F-15/16 and other POR integration efforts and optimize solutions for distributed JMAC Architecture</p> <p>- Refine and optimize the distributed JMAC capabilities in an integrated JTIFC scenario for demonstration in LVC environment</p> <p>- Find opportunities for collaboration and demonstration of delivered multi-sensor Advanced Track Filters and Advanced Association Algorithms to improve overall Joint IAMD Tracking Capabilities</p> <p>- Leverage FY23 demonstrations and live tracking events to show performance in more realistic IAMD environments; start transition planning into requisite Programs of Record (PoR)</p> <p>- Evolve and update IAMD Lab for Joint Analysis Team (JAT) to analyze existing and emerging IAMD capabilities to ensure they are appropriately represented during wargames/exercises</p> <p>- Step up collaboration and integration of IAMD Technical Authority efforts into JADC2 and end-to end-capability development, including working more closely with all of the JADC2 OPTs/IPTs as well as Project Convergence, Project Overmatch and ABMS.</p> <p>- Provide impact assessments for the JADC2 Reference Architecture and subsequent architecture and capability development efforts</p> <p>- 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.</p> <p>- Operate, maintain and update JTIFC Node, which is the 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</p> <p>- 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</p> <p>- Narrow down ABMA options and start the maturation, demonstration and fielding of ABMAs for participation with JTIFC.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>				
Title: System-Level Verification and Assessment		21.646	26.591	26.049
Articles:		-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
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 2022	FY 2023	FY 2024
<p>Description: This activity funds Missile Defense System Assessment and Verification, Validation, and Accreditation (VV&A) activities to support Operational Capability Baseline delivery decisions, and anchor System modeling and simulation.</p> <ul style="list-style-type: none">- Develop and manage assessment plans and requirements for Missile Defense System capability increments:<ul style="list-style-type: none">-- Map assessment requirements to data collection venues (i.e., ground tests, flight tests, and exercises)-- Evaluate current Modeling & Simulation (M&S) capability to address assessment requirements, and provide recommendations for new or improved M&S- Maintain assessment documentation per the R-4 summary- Conduct extensive analysis of data collected in Missile Defense System ground and flight test events to characterize System 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 M&S 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 Systems capabilities and limitations prior to capability delivery decisions- Produce independent assessments of each incremental Missile Defense System Capability Delivery to support fielding readiness determinations- Verify Missile Defense System performance against specified requirements, and produce System 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 2023 Plans:</p> <ul style="list-style-type: none">- SEE ABOVE. <p>FY 2024 Plans:</p> <ul style="list-style-type: none">- SEE ABOVE. <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>N/A.</p>				
Title: Knowledge Centers		11.860	12.055	9.148
Articles:		-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
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 2022	FY 2023
<p>Description: Knowledge Centers serve as independent technical advisors to MDA program offices in the Command, Control, Battle Management and Communications, 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: -- 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 the Missile Defense Agency (MDA) - Perform independent technical assessments of critical System and Element program issues: -- Define element knowledge points, 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 2023 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Decrease from FY 2023 to FY 2024 reflects a reduction in Knowledge Center support.</p>			
<p>Title: Future Concepts and Planning</p> <p align="right">Articles:</p> <p>Description: This activity funds Missile Defense System architecture and future concept development, and efforts and studies to address the emergent threat, including DoD Analyses of Alternatives if directed.</p> <ul style="list-style-type: none"> - Participate in designated Office of the Secretary of Defense activities or analyses, as directed by Congress - Perform Missile Defense System 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 Architecture Requirements Packages to establish functional, performance and integration planning requirements for next generation weapons and sensors to counter future threats 		15.829 -	13.853 -
		21.033 -	

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
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 2022	FY 2023	FY 2024
<div>- Identify architecture alternatives that improve Missile Defense System performance and are complementary to and interoperable with NATO systems and theaters around the world</div> <div>- Conduct technology development reviews for future/follow-on Missile Defense System Element development efforts</div> <div>- Update concept capability documentation based on architectural options, trade studies, and technology development experiments</div> <div>- Maintain a dialog with the Warfighter community for all Missile Defense System engineering and technical issues:<div><div>-- Inform Warfighter development of the Joint IMAND Portfolio Priority List (JIPPL) by providing relevant System data</div><div>-- Develop updates to the digital version of the Achievable Capabilities List as required</div><div>-- Support MDA Wargame planning, execution, and analysis</div></div></div> <div>- Develop updates to the digital version of the Future Architecture Roadmap as required</div> <div>- Provide prioritized strategic architecture thrusts to inform Agency Science and Technology (S&T) investments</div> <div>- Maintain the MDA Director's Strategic Planning War-Room and the Strategic Vision for the Agency</div> <div>- Lead collaborative effort to improve foreign partners' understanding of existing system capabilities, architectural performance and operational concepts of the Missile Defense System</div> <div>Specific and/or unique accomplishments to each FY are as follows:</div> <div>FY 2023 Plans:</div> <div>- SEE ABOVE.</div> <div>FY 2024 Plans:</div> <div>- SEE ABOVE.</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>Increase from FY 2023 to FY 2024 provides additional architecture assessment to include future threat analysis, address capability gaps, mitigation assessment, architecture analysis tool development/execution, and future architect roadmap updates.</div>				
Title: System Engineering, Engineering Analysis and Quick Response Team		10.535	10.712	11.588
Articles:		-	-	-
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: <div>- Conduct system level analyses to support ongoing Missile Defense System Architecture and Systems Engineering efforts</div> <div>- Analyze expected performance of Missile Defense System Architecture options:<div><div>-- Analyze and predict the performance of future Missile Defense System capabilities</div><div>-- Provide technical assessments, and collaborate with Missile Defense System Elements to define and track technical performance measures</div></div></div> <div>- Respond to Warfighter, Combatant Command and congressional requests for information and analysis</div>				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
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 2022	FY 2023	FY 2024
<div><div>- Provide analytical support for real-world events</div><div>- Maintain analysis parameters database and standards per the R4 summary to ensure consistency</div><div>- Develop analytical data to respond to information requests from MDA and Department of Defense leadership</div></div> <div>Specific and/or unique accomplishments to each FY are as follows:</div> <div><div>FY 2023 Plans:</div><div>SEE ABOVE.</div><div>FY 2024 Plans:</div><div>SEE ABOVE.</div><div>FY 2023 to FY 2024 Increase/Decrease Statement:</div><div>N/A.</div></div>					
<div>Title: Discrimination</div> <div>Articles:</div> <div>Description: MDA designs, develops, tests, and delivers Missile Defense System 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 within a threat missile complex in the presence of decoys and with advanced capabilities to address other countermeasures.</div> <div>SE&I will lead and integrate the Threat Discrimination program across the entire Missile Defense System, 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:</div> <div><div>- Perform systems engineering support for threat discrimination and counter-countermeasures analysis and assessments</div><div>- Conduct Threat Discrimination Program integration across the entire Missile Defense System</div><div>- Perform threat discrimination systems engineering support for counter-countermeasures analysis and assessments</div><div>- Conduct analysis on predicted performance of advanced capability development for definition of initial requirements for the Missile Defense System</div><div>- Develop Electronic Attack and Electronic Protection models to support Missile Defense System requirements definition for Electronic Protection techniques</div><div>- Define operational concepts for improved counter-countermeasure techniques and technologies</div><div>- Support Ground/Flight test data collection planning efforts</div><div>- 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</div></div>			26.807 -	16.658 -	18.950 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
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 2022	FY 2023
<ul style="list-style-type: none"> - Develop updated high fidelity threat models - Provide technical support for fielding improved threat discrimination capabilities <p>Specific and/or unique accomplishments to each FY are as follows:</p> <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 2024 Plans:</p> <ul style="list-style-type: none"> - Develop techniques for Electronic Protection and Objective Debris Mitigation capabilities - Investigate high fidelity scene generation and electronic attack models and simulations for Systems Engineering analysis and concept development - Develop various threat-based models representing anticipated advisory countermeasures capabilities for use in engineering trade studies and analysis <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Increase from FY 2023 to FY 2024 provides further development of Electronic Protection techniques for various radar systems and the associated M&S to support both development and testing activities.</p>			
<p>Title: Risk Management</p> <p align="right">Articles:</p> <p>Description: The Risk Management task identifies Missile Defense System 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 2023 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2024 Plans:</p>		6.550 -	7.755 -
		8.331 -	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
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 2022	FY 2023
- SEE ABOVE.			
FY 2023 to FY 2024 Increase/Decrease Statement: N/A.			
Title: Anti-Tamper & Engineering Manufacturing Readiness Level Development Articles: 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. - 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 Missile Defense System 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 Missile Defense System elements, systems, and components - Assess and report readiness of MDA development efforts for transition to production Specific and/or unique accomplishments to each FY are as follows: FY 2023 Plans: - SEE ABOVE. FY 2024 Plans: - SEE ABOVE. FY 2023 to FY 2024 Increase/Decrease Statement: N/A.		5.429 -	5.282 -
		5.446 -	
Title: Manufacturing and Producibility Articles: 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. - Assess Missile Defense industrial base and determine critical manufacturing technologies: -- Conduct assessments of critical component supply base and update critical technologies database -- Collaborate with national security space components on investment strategies for critical technologies		3.297 -	5.345 -
			5.492 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
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 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> -- 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 - 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 2023 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>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 JTMC Bridge to establish an independent integrated fire control architecture in support of the Defense of Guam. This activity pulls from ongoing IAMD 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 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 CEC networks for Live testing - Provide cyber security and accreditation packages 			0.000 -	18.000 -	0.000 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency									Date: March 2023			
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 2022	FY 2023	FY 2024	
<div>- Mature the JTMC Bridge for Ballistic and Hypersonic Missile tracking and Combat Identification</div> <div>- Provide integration activities for existing JTMC Bridge into Integrated Air Defense System (IADS) architecture</div> <div>- Conduct integration of sensors and weapons into IBCS and interface of IBCS to Battle Control System - Fixed / command and control (BCS-F/C2) Pathfinder</div> <div>FY 2024 Plans: N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects transfer of integration activities to the Command, Control, Battle Management, and Communications PE (0603896C).</div>												
									Accomplishments/Planned Programs Subtotals			
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• 0603881C: Ballistic Missile	209.004	195.216	220.311	-	220.311	239.705	334.977	384.992	292.629	Continuing	Continuing	
Defense Terminal Defense Segment												
• 0603882C: Ballistic	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing	
Missile Defense Midcourse												
Defense Segment												
• 0603884C: Ballistic	250.123	230.502	239.159	-	239.159	212.191	233.877	242.623	251.226	Continuing	Continuing	
Missile Defense Sensors												
• 0603892C: AEGIS BMD	628.014	595.572	693.727	-	693.727	639.678	706.974	699.611	733.909	Continuing	Continuing	
• 0603896C: Ballistic Missile	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing	
Defense Command and												
Control, Battle Management												
& Communication												
• 0603914C: Ballistic	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing	
Missile Defense Test												
• 0604102C: Guam	110.611	393.201	397.578	-	397.578	291.301	272.227	238.348	232.115	Continuing	Continuing	
Defense Development												
• 0604181C: Hypersonic Defense	281.886	517.977	208.997	-	208.997	218.939	294.326	366.951	644.996	Continuing	Continuing	
Remarks												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
<p>D. Acquisition Strategy</p> <p>In order to optimize the performance of the Missile Defense System, 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.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Requirements and Design - Reqts & Design - Lethality Spt - FFRDC/ UARC	FFRDC	Various : CA	5.391	0.631	Nov 2021	0.785	Nov 2022	1.526	Nov 2023	-		1.526	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Lethality Spt - CSS	C/CPFF	TEAMS : NC	4.023	1.499	Nov 2021	0.694	Nov 2022	0.713	Nov 2023	-		0.713	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Next Generation Interceptor Lethality Analysis	Various	TBD : TBD	0.000	0.000		5.697	Dec 2022	8.582	Dec 2023	-		8.582	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	58.994	5.654	Nov 2021	6.949	Nov 2022	6.368	Nov 2023	-		6.368	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - FFRDC/UARC	FFRDC	Various : Various	14.856	1.768	Nov 2021	1.382	Nov 2022	1.419	Nov 2023	-		1.419	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Industry	C/CPFF	Boeing : AL	137.073	5.162	Nov 2021	10.394	Nov 2022	9.473	Nov 2023	-		9.473	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - MDA	Allot	MDA : AL, VA	78.762	11.082	Oct 2021	8.935	Oct 2022	11.016	Oct 2023	-		11.016	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Next Generation Interceptor CSS support	Various	Various : AL	0.000	3.315	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Next Generation Interceptor Lab support	Various	Various : NM, CA, TX	0.000	3.929	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Next	MIPR	Various : AL, TN	0.000	2.292	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Generation Interceptor OGA support															
Requirements and Design - Reqts & Design - OGA	MIPR	CCDC : AL	15.585	0.000		0.000		0.000		-		0.000	0.000	15.585	0.000
Requirements and Design - Reqts & Design - Post Intercept Assessment	Various	Various : Various	25.514	1.687	Nov 2021	2.459	Nov 2022	4.745	Nov 2023	-		4.745	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - S&T	Various	Various : Various	0.000	2.937	Sep 2022	0.000		0.000		-		0.000	0.000	2.937	0.000
Integrated Air and Missile Defense (IAMD) - IAMD - CCDC	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	24.390	9.233	Dec 2021	10.129	Nov 2022	10.598	Dec 2023	-		10.598	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - CS Support	C/CPFF	YORKTOWN SYSTEMS GROUP, INC. : AL	0.000	0.000		0.000		1.940	Nov 2023	-		1.940	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		1.210	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - JHU/APL	C/CPFF	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	0.000	1.484	Nov 2021	2.445	Nov 2022	1.986	Nov 2023	-		1.986	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - MDA	Allot	MDA : AL, VA, CO	0.739	0.523	Oct 2021	0.805	Oct 2022	0.832	Oct 2023	-		0.832	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - NSMA	MIPR	DOD - USN - NAVY SYSTEMS MANAGEMENT	0.000	0.000		0.000		1.083	Dec 2023	-		1.083	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		ACTIVITY (NSMA) : VARIOUS													
Integrated Air and Missile Defense (IAMD) - IAMD - Northrop Grumman	C/CPFF	NORTHROP GRUMMAN : VARIOUS	0.000	1.536	Jan 2022	2.100	Nov 2022	1.721	Nov 2023	-		1.721	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - Support	C/CPFF	TEAMS : AL, VA, CO	7.901	1.327	Nov 2021	1.439	Nov 2022	0.000		-		0.000	0.000	10.667	0.000
Integrated Air and Missile Defense (IAMD) - IAMD - Various	Various	Various : VARIOUS	71.168	2.823	Nov 2021	3.448	Nov 2022	3.090	Nov 2023	-		3.090	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	PARSONS GOVERNMENT SERVICES INC. : AL	18.465	2.930	Nov 2021	2.604	Nov 2022	2.737	Nov 2023	-		2.737	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC - Aerospace	FFRDC	Aerospace : CA	24.953	1.879	Nov 2021	1.825	Nov 2022	1.231	Nov 2023	-		1.231	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC - JHU/APL	FFRDC	JHU/APL : MD, VA	12.888	1.687	Nov 2021	1.282	Nov 2022	1.321	Nov 2023	-		1.321	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - FFRDC/UARC - Mitre	FFRDC	MITRE : VA	24.711	1.960	Nov 2021	1.645	Nov 2022	1.110	Nov 2023	-		1.110	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 - Various	FFRDC	Various : Various	27.526	0.896	Nov 2021	2.047	Nov 2022	1.386	Nov 2023	-		1.386	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - M&S Accreditation	Various	CCDC : AL	23.482	6.705	Nov 2021	6.901	Nov 2022	7.081	Nov 2023	-		7.081	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - MDA	Allot	MDA : VA, AL	23.410	2.684	Oct 2021	6.652	Oct 2022	7.381	Oct 2023	-		7.381	Continuing	Continuing	Continuing
System-Level Verification and Assessment - Sys V&A - OGA	MIPR	CCDC : AL	19.109	2.455	Nov 2021	3.134	Nov 2022	3.291	Nov 2023	-		3.291	Continuing	Continuing	Continuing
System-Level Verification and Assessment - V&A Industry Support	C/CPFF	Boeing : AL	23.059	0.450	Nov 2021	0.501	Nov 2022	0.511	Nov 2023	-		0.511	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC - Aerospace	FFRDC	Aerospace : CA	17.668	0.000		0.000		0.000		-		0.000	0.000	17.668	0.000
Knowledge Centers - KC - FFRDC/UARC - Mitre	FFRDC	MITRE : VA	13.124	1.977	Nov 2021	0.864	Nov 2022	0.876	Nov 2023	-		0.876	Continuing	Continuing	Continuing
Knowledge Centers - KC - Industry	C/CPFF	BOEING : AL	0.974	0.000		0.000		0.000		-		0.000	0.000	0.974	0.974
Knowledge Centers - KC - MDA	Allot	MDA : AL, VA	45.431	3.401	Oct 2021	2.828	Oct 2022	2.921	Oct 2023	-		2.921	Continuing	Continuing	Continuing
Knowledge Centers - KC - TEAMS	C/CPFF	TEAMS : AL	10.767	0.766	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Knowledge Centers - KC - Various	Various	Various : Various	14.136	5.716	Nov 2021	8.363	Nov 2022	5.351	Nov 2023	-		5.351	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 - Architecture	MIPR	USA CCDC AVIATION AND MISSILE CENTE : AL	10.000	0.000		0.000		0.000		-		0.000	0.000	10.000	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
target simulation development															
Future Concepts and Planning - Future Concepts - Architecture CS Support	Various	TBD : TBD	0.000	0.000		0.000		6.483	Nov 2023	-		6.483	0.000	6.483	0.000
Future Concepts and Planning - Future Concepts - Architecture CSS	C/CPFF	TEAMS : AL, VA	29.112	1.205	Apr 2022	0.000		0.000		-		0.000	0.000	30.317	0.000
Future Concepts and Planning - Future Concepts - Architecture Support	Various	Various : VARIOUS	16.604	1.647	Oct 2021	3.238	Nov 2022	0.422	Nov 2023	-		0.422	0.000	21.911	0.000
Future Concepts and Planning - Future Concepts - FFRDC / UARC 1	FFRDC	SNL : CA	4.097	0.000		0.000		0.000		-		0.000	0.000	4.097	0.000
Future Concepts and Planning - Future Concepts - FFRDC / UARC 2	C/CPFF	GTRI (Georgia Tech Research Institute) : GA	0.000	1.856	Mar 2022	2.804	Dec 2022	4.366	Dec 2023	-		4.366	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 3	FFRDC	MIT/LL : MA	5.130	0.000		0.000		0.000		-		0.000	0.000	5.130	0.000
Future Concepts and Planning - Future Concepts - FFRDC / UARC 4	MIPR	DOE - DEPARTMENT OF ENERGY (DOE) : CA	0.000	0.180	Jun 2022	0.000		0.370	Dec 2023	-		0.370	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 5	FFRDC	DOD - USA - COMMUNICATIONS ELECTRONICS COMMAND (CECOM) : MD	5.430	2.379	Dec 2021	1.487	Nov 2022	2.285	Nov 2023	-		2.285	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 6	MIPR	DOD - USAF - AIR FORCE LIFE CYCLE MANAGEMENT CENTER (AFLCMC) : MA	5.996	0.487	Jan 2022	0.000		0.572	Nov 2023	-		0.572	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - Support	Allot	MDA : VA / AL	32.116	8.006	Oct 2021	6.324	Oct 2022	6.535	Oct 2023	-		6.535	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - WHS	MIPR	RAND CORPORATION : Various	0.000	0.069	Mar 2022	0.000		0.000		-		0.000	0.000	0.069	0.000
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	PARSONS GOVERNMENT SERVICES INC. : AL	44.915	2.988	Nov 2021	2.652	Nov 2022	3.329	Nov 2023	-		3.329	Continuing	Continuing	Continuing
System Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - CSS 2	C/CPFF	SAIC : VA, AL	45.320	7.109	Nov 2021	7.577	Nov 2022	7.766	Nov 2023	-		7.766	Continuing	Continuing	Continuing
System Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - Industry Spt	C/CPFF	Boeing : VA, AL	1.715	0.438	Nov 2021	0.483	Nov 2022	0.493	Nov 2023	-		0.493	Continuing	Continuing	Continuing
Discrimination - Discrimination - CSS	C/CPFF	TEAMS : AL	38.137	3.074	Nov 2021	5.498	Nov 2022	5.635	Nov 2023	-		5.635	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 - Industry	C/CPAF	Boeing : AL, VA	64.856	5.537	Nov 2021	8.729	Nov 2022	10.813	Nov 2023	-		10.813	Continuing	Continuing	Continuing
Discrimination - Discrimination - Industry 2	C/CPAF	NORTHROP GRUMMAN : AL	0.000	1.928	May 2022	0.000		0.000		-		0.000	0.000	1.928	0.000
Discrimination - Discrimination - Sensors	C/CPFF	IERUS TECHNOLOGIES, LLC : AL	0.000	1.368	Dec 2021	0.000		0.000		-		0.000	0.000	1.368	0.000
Discrimination - Discrimination - Support	Allot	MDA : AL, VA	40.360	2.837	Oct 2021	1.930	Oct 2022	1.992	Oct 2023	-		1.992	Continuing	Continuing	Continuing
Discrimination - Discrimination - Various	Various	Various : Various	5.628	5.463	Nov 2021	0.501	Nov 2022	0.510	Nov 2023	-		0.510	Continuing	Continuing	Continuing
Discrimination - Discrimination – Advanced Technology	IA	DOE - DEPARTMENT OF ENERGY (DOE) : Various	0.000	6.600	Sep 2022	0.000		0.000		-		0.000	0.000	6.600	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	45.872	5.733	Oct 2021	5.975	Oct 2022	6.525	Oct 2023	-		6.525	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 : Various	12.040	0.817	Nov 2021	1.780	Nov 2022	1.806	Nov 2023	-		1.806	Continuing	Continuing	Continuing
Anti-Tamper & Engineering Manufacturing Readiness Level Development - AT & EMRL - Anti-Tamper	Various	Various : AL, VA, CO	10.373	0.693	Nov 2021	0.831	Nov 2022	0.848	Nov 2023	-		0.848	Continuing	Continuing	Continuing
Anti-Tamper & Engineering Manufacturing Readiness Level Development - AT & EMRL - MDA	Allot	MDA : AL, VA	38.375	4.736	Oct 2021	4.451	Oct 2022	4.598	Oct 2023	-		4.598	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Anti-Tamper & Engineering Manufacturing Readiness Level Development - 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 - Manufacturing and Producibility – Advanced Technology	Various	Various : Various	0.000	1.226	May 2022	0.000		0.000		-		0.000	0.000	1.226	0.000
Manufacturing and Producibility - Mfg and Producibility	Allot	MDA : AL	9.674	1.945	Oct 2021	3.002	Oct 2022	3.103	Oct 2023	-		3.103	Continuing	Continuing	Continuing
Manufacturing and Producibility - Mfg and Producibility - CSS	C/CPFF	TEAMS : AL, VA	3.212	0.126	Nov 2021	2.343	Nov 2022	2.389	Nov 2023	-		2.389	Continuing	Continuing	Continuing
Manufacturing and Producibility - Mfg and Producibility - OGA Support	MIPR	CCDC : AL	13.463	0.000		0.000		0.000		-		0.000	0.000	13.463	0.000
Manufacturing and Producibility - Mfg and Producibility - Various	Various	Various : AL	2.000	0.000		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	5.996	0.000		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
JEON Capability - Framework, Truth Models	Various	Various : CO, AL	4.043	0.000		0.000		0.000		-		0.000	0.000	4.043	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
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		0.996	Dec 2022	0.000		-		0.000	0.000	0.996	0.000
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		2.675	Dec 2022	0.000		-		0.000	0.000	2.675	0.000
Guam Defense Integrated Air and Missile Defense (IAMD) - Guam Defense IAMD - Lockheed Martin	C/CPFF	LOCKHEED MARTIN CORPORATION : Various	0.000	0.000		0.835	Dec 2022	0.000		-		0.000	0.000	0.835	0.000
Guam Defense Integrated Air and Missile Defense (IAMD) - Guam Defense IAMD - MDA	Allot	DOD - MISSILE DEFENSE AGENCY (MDA) : Various	0.000	0.000		0.817	Oct 2022	0.000		-		0.000	0.000	0.817	0.000
Guam Defense Integrated Air and Missile Defense (IAMD) - Guam Defense IAMD - NSWC Corona	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) CORONA DIVISION : CA	0.000	0.000		0.484	Dec 2022	0.000		-		0.000	0.000	0.484	0.000
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		0.392	Dec 2022	0.000		-		0.000	0.000	0.392	0.000
Guam Defense Integrated Air and Missile Defense (IAMD) - Guam Defense IAMD - Northrop Grumman	C/CPFF	NORTHROP GRUMMAN : Various	0.000	0.000		6.727	Dec 2022	0.000		-		0.000	0.000	6.727	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency **Date:** March 2023

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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Guam Defense Integrated Air and Missile Defense (IAMD) - Guam Defense IAMD - Numerica	C/CPFF	NUMERICA CORPORATION : CO	0.000	0.000		0.974	Dec 2022	0.000		-		0.000	0.000	0.974	0.000
Guam Defense Integrated Air and Missile Defense (IAMD) - Guam Defense IAMD 0 Raytheon	C/CPFF	RAYTHEON : Various	0.000	0.000		4.100	Dec 2022	0.000		-		0.000	0.000	4.100	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	9.133	0.000		0.000		0.000		-		0.000	0.000	9.133	0.000
JEON Capability - OGA	MIPR	CCDC : AL	6.044	0.000		0.000		0.000		-		0.000	0.000	6.044	0.000
JEON Capability - Systems Engineering	Various	MDA Various : VA, AL, CO	6.539	0.000		0.000		0.000		-		0.000	0.000	6.539	0.000
JEON Capability - Test & Performance Analysis	Various	Various : VA, AL	11.268	0.000		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
Subtotal			1,514.135	158.835		175.122		171.129		-		171.129	Continuing	Continuing	N/A

Remarks

N/A

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,514.135	158.835	175.122	171.129	-	171.129	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.

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency		Date: March 2023
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
Design and deliver integrated Missile Defense System technical baseline	1	2022	4	2028
Conduct Missile Defense System assessments and System-level Verification, Validation, and Accreditation (VV&A) to support operational capability delivery	1	2022	4	2028
Update digital Achievable Capabilities List	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD21: Homeland Cruise Missile Defense Architecture	3.050	13.263	10.852	0.783	-	0.783	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from Fiscal Year (FY) 2023 to FY 2024 reflects the execution of the Joint Tactical Integrated Fire Control (JTIFC) demonstration in 4Q FY 2023.

A. Mission Description and Budget Item Justification

In response to United States Northern Command's requirements for Cruise Missile Defense of the Homeland (CMD-H), the Missile Defense Agency (MDA) will develop systems architecture and conduct a 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 the Joint Tactical Integrated Fire Control (JTIFC) demonstration in 4Q FY 2023, completion of related demo analysis in FY 2024 and support Department CMD-H systems engineering as required in FY 2024 and outyears.

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

		FY 2022	FY 2023	FY 2024
Title: Homeland Cruise Missile Defense Architecture		13.263	10.852	0.783
Articles:		-	-	-
Description: Develop and demonstrate a Joint Tactical Integrated Fire Control (JTIFC) capability in 4Q FY 2023 and complete demo analysis in FY 2024. Support Department CMD-H systems engineering as required in FY 2024 and outyears.				
Specific and/or unique accomplishments to each FY are as follows:				
FY 2023 Plans:				
- Complete engineering and design of a JTIFC demonstration to integrate Joint sensors and weapons into an integrated fire control network.				
- 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				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
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 2022	FY 2023
- Conduct the JTIFC demonstration. FY 2024 Plans: - Conduct a review and analysis of JTIFC demonstration results and write final report to integrate Joint sensors and weapons into an integrated fire control network. - Support Department CMD-H systems engineering as required. FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects the execution of the JTIFC demonstration in 4Q FY 2023 along with an accompanying reduction of CMD efforts as MDA moves from a primary to a support role.			
Accomplishments/Planned Programs Subtotals		13.263	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, Federally Funded Research and Development Centers, University Affiliated Research Centers, 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.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Homeland Cruise Missile Defense Architecture - CMD-H Architecture Design	Various	Various : VA, MD, MA, CO	3.050	6.443	Dec 2021	2.983	Nov 2022	0.000		-		0.000	0.000	12.476	0.000
Homeland Cruise Missile Defense Architecture - CMD-H Architecture Engineering	C/CPFF	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : Various	0.000	0.957	Dec 2021	0.000		0.000		-		0.000	0.000	0.957	0.000
Homeland Cruise Missile Defense Architecture - CMD-H Demonstration (CCDC)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	0.000	0.000		2.010	Oct 2022	0.000		-		0.000	0.000	2.010	0.000
Homeland Cruise Missile Defense Architecture - CMD-H Demonstration (Northrop Grumman)	C/CPFF	Northrop Grumman : AL	0.000	1.402	Nov 2021	2.369	Apr 2023	0.000		-		0.000	0.000	3.771	0.000
Homeland Cruise Missile Defense Architecture - CMD-H Demonstration (Raytheon)	C/CPFF	Raytheon : MD, FL, CA, MA	0.000	2.400	May 2022	0.000		0.000		-		0.000	0.000	2.400	0.000
Subtotal			3.050	11.202		7.362		0.000		-		0.000	0.000	21.614	N/A
Remarks															
Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Homeland Cruise Missile Defense Architecture -	C/CPFF	PARSONS GOVERNMENT	0.000	2.061	Nov 2021	3.490	Nov 2022	0.783	Nov 2023	-		0.783	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Homeland Cruise Missile Defense Architecture - CMD-H Architecture Design - CS Support		SERVICES INC. : VARIOUS													
Subtotal			0.000	2.061		3.490		0.783		-		0.783	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			3.050	13.263		10.852		0.783		-		0.783	Continuing	Continuing	N/A
Remarks N/A															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency							Date: March 2023											
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028	
IFC CMD-H Demonstration					◇◇◇◇		◇◇◇◇◇		◇		◇		◇		◇		◇	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
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	1	2022	1	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MT23: Enabling - Test	219.609	41.520	44.245	44.248	-	44.248	48.151	48.040	48.972	49.952	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 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.

Enabling-Test allocates test requirements to individual test events, designs test architectures, defines target requirements, and generates 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 Missile Defense System events to ensure the incremental capability being transferred to the Warfighter will be operationally effective, suitable, and survivable. The resulting data ensures Missile Defense System 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; 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 Missile Defense System 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 and digital models of the test configuration to exercise system interfaces, calculate expected System performance, and gauge readiness for test execution. Post-mission, the Missile Defense Agency (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 Missile Defense System 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

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MT23 / Enabling - Test		
product testing follows the test program outlined in MDA's Integrated Master Test Plan (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.					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
Title: Engineering and Analysis			27.516	26.978	44.248
Articles:			-	-	-
Description: The Engineering and Analysis effort provides essential System ground and flight test event planning, execution, and analysis activities for each test event: - Design test architecture, define test objectives and evaluation criteria, define target requirements, and generate test scenarios appropriate to the data collection requirements to assess System performance and anchor M&S - Coordinate with Missile Defense System 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 Missile Defense System 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 Verification, Validation, and Accreditation of M&S architectures - - Plan, conduct, and report system-level pre-mission predictive analysis for IMTP FTs that provides risk reduction and likelihood of mission success - Conduct test data reduction and processing of test event data; archive analysis products for reference by assessment community, warfighters, the Government Accountability Office, and Congressional staffers - Perform quick-look and detailed post-test analysis and reporting for IMTP flight tests that shows if test objectives were achieved and reveals potential issues that can only be discovered in live flight tests - Plan, conduct, and report system level performance analysis for IMTP ground tests that provides assessment of system performance in simple and worst-case real-world scenarios, identifies limitations and issues that need to be corrected prior to fielding					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
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 2022	FY 2023
<p>- Document test observations for System-level test anomalies and coordinate the resulting Discrepancy Reports within the Failure Reporting, Analysis, and Corrective Action System</p> <p>- Design, develop, deploy, maintain, test, accredit, and modernize test analysis tools (e.g., Modular Analysis and Reporting Suite) to enhance analysis capability and efficiency.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <p>- SEE ABOVE.</p> <p>FY 2024 Plans:</p> <p>- 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 (CDI), and M&S engineering activities</p> <p>- Support execution of agency ground test plan in accordance with approved IMTP and maintain integration across concurrent ground test and flight test activities</p> <p>- Provide M&S technical expertise and risk reduction process for Missile Defense System Element integration activities and event planning within a 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 Missile Defense System capability increment upgrades; and cybersecurity monitoring and automation to the CDI environment</p> <p>- Conduct early integration activities such as scenario refinement and early checkout of Element software for GT sprints</p> <p>- Conduct continuous test requirements management for the IMTP at the test campaign and test event levels</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Increase from Fiscal Year (FY) 2023 to FY 2024 provides for the consolidation of efforts previously budgeted for in the Continuous Integration / Agile Test and CDI Environment accomplishments (Budget Project MT23) into the Engineering and Analysis accomplishment, in accordance with current ground testing Concept of Operations. Also includes consolidation of Engineering & Analysis efforts from the Aegis-Test PE (0604878C).</p>			
<p>Title: Continuous Integration and Agile Test (CI/CAT)</p> <p align="right">Articles:</p> <p>Description: Provide test planning, analysis, M&S integration, M&S execution, 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</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p>		11.323	11.499
		-	-
			0.000
			-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
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 2022	FY 2023	FY 2024
- SEE ABOVE.												
FY 2024 Plans: N/A												
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects consolidation of Continuous Integration / Agile Test activities under the Engineering and Analysis Accomplishment, in accordance with current ground testing Concept of Operations.												
Title: Continuous Development & Integration (CDI) Environment										2.681	5.768	0.000
Articles:										-	-	-
Description: Provide technical expertise and risk reduction process for Missile Defense System Element integration activities and event planning within a CDI environment, to include support to IMTP testing and M&S engineering activities; and a venue for integrating new Elements, interfaces, connectivity and functionality to support Missile Defense System capability increment upgrades. Specific and/or unique accomplishments to each FY are as follows:												
FY 2023 Plans: - SEE ABOVE.												
FY 2024 Plans: - N/A												
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects consolidation of CDI activities under the Engineering and Analysis Accomplishment, in accordance with current ground testing Concept of Operations.												
Accomplishments/Planned Programs Subtotals										41.520	44.245	44.248
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• 0603914C: Ballistic Missile Defense Test	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing	
Remarks												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MT23 / Enabling - Test
<p>D. Acquisition Strategy</p> <p>In order to optimize System performance, MDA leverages the nation's engineering Centers of Excellence at government agencies and Military Services, Federally Funded Research Development Centers, University Affiliated Research Centers, 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.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Engineering and Analysis - Engineering & Analysis - CSS Support	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : AL	16.124	3.662	Nov 2021	5.132	Nov 2022	8.977	Nov 2023	-		8.977	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - FEM-02 Support	C/CPFF	TBD : AL	0.000	0.000		0.000		0.441	Nov 2023	-		0.441	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - FFRDC	MIPR	GEORGIA TECH RESEARCH CORPORATION : AL	2.227	1.252	May 2022	0.000		1.631	Nov 2023	-		1.631	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - Industry	C/CPAF	BOEING : Various	32.157	3.170	Jan 2022	2.978	Nov 2022	6.415	Nov 2023	-		6.415	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - Integration Support CSS	C/CPAF	COLSA CORPORATION : AL	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 : Various	11.231	0.000		0.000		0.000		-		0.000	0.000	11.231	0.000
Engineering and Analysis - Engineering & Analysis - OGA Support	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	77.750	8.275	Nov 2021	17.532	Nov 2022	16.747	Nov 2023	-		16.747	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - OGA Support - NME & RASP	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	4.287	11.075	Nov 2021	0.000		0.000		-		0.000	0.000	15.362	0.000
Engineering and Analysis - Engineering & Analysis - Technical Support	C/CPAF	NORTHROP GRUMMAN : Various	5.554	0.000		0.000		0.000		-		0.000	0.000	5.554	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Engineering and Analysis - Engineering & Analysis - Test Engineering Support	Various	Various : Various	4.675	0.082	Nov 2021	1.336	Nov 2022	0.500	Nov 2023	-		0.500	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering and Test Analysis - OGA Support	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : Various	0.000	0.000		0.000		9.537	Nov 2023	-		9.537	Continuing	Continuing	Continuing
Continuous Integration and Agile Test (CI/CAT) - CI/ CAT Analysis (OGA)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	0.000	6.877	Dec 2021	6.463	Dec 2022	0.000		-		0.000	0.000	13.340	0.000
Continuous Integration and Agile Test (CI/CAT) - CI/ CAT M&S Integration	Various	Various : Various	15.485	2.105	Jan 2022	3.141	Dec 2022	0.000		-		0.000	0.000	20.731	0.000
Continuous Integration and Agile Test (CI/CAT) - CI/ CAT Test & Performance Analysis	Various	Various : Various	6.931	0.000		0.778	Dec 2022	0.000		-		0.000	0.000	7.709	0.000
Continuous Integration and Agile Test (CI/CAT) - CI/ CAT Test Requirements Engineering - TEAMS CSS	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : AL	4.372	2.341	Nov 2021	1.117	Nov 2022	0.000		-		0.000	0.000	7.830	0.000
Continuous Integration and Agile Test (CI/CAT) - Hardware	C/CPFF	TELEDYNE BROWN ENGINEERING, INC. : 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	1.284	1.747	Nov 2021	0.000		0.000		-		0.000	0.000	3.031	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Continuous Development & Integration (CDI) Environment - Test Case Development & Continuous Development and Integration Environment	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : Various	14.099	0.934	Dec 2021	5.768	Dec 2022	0.000		-		0.000	0.000	20.801	0.000
Subtotal			219.609	41.520		44.245		44.248		-		44.248	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			219.609	41.520		44.245		44.248		-		44.248	Continuing	Continuing	N/A
Remarks Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year. Beginning in FY 2024, CDI and CI/CAT Accomplishment activities are realigned to the Engineering and Analysis Accomplishment, in accordance with current ground testing Concept of Operations.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency		Date: March 2023
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	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD28: <i>Intelligence & Security</i>	365.255	39.102	42.036	56.654	-	56.654	59.093	59.964	60.933	61.932	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from Fiscal Year (FY) 2023 to FY 2024 provides new threat definitions, analytical tools and threat phenomenologies for complex and advanced threats.

A. Mission Description and Budget Item Justification

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

- Ensure the Intelligence Community (IC) understands and fulfills the Missile Defense Agency's (MDA's) current and future prioritized intelligence requirements; advocate Missile Defense test intelligence requirements; and work closely with the IC.
- Leverage available National and Department of Defense (DoD) Counterintelligence resources. Ensure counterintelligence products and services are fully integrated into all Research, Development, Test, and Evaluation programs and activities to protect classified information and critical technologies and to protect MDA and Missile Defense System personnel, facilities, information and activities.
- Define cybersecurity systems engineering requirements for Missile Defense System assets. Identify cybersecurity systems engineering and infrastructure intelligence requirements to focus IC collection, analysis and production to target MDA/Missile Defense System cyber vulnerabilities. Incorporate cybersecurity engineering requirements into the Missile Defense System systems engineering process.
- Provide cross-Agency acquisition security oversight and support for the identification and protection of Critical Program Information. Provide physical security for Missile Defense System 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 Missile Defense System vulnerabilities.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
Title: Intelligence			9.354	8.030	8.477
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 IC					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
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 2022	FY 2023	FY 2024
<p>-- Maintain a focused dialogue with members of the Intelligence Community to ensure understanding, urgency and context of MDA intelligence requirements</p> <p>- Provide Current, Technical, Acquisition, Collection and Cyber intelligence to the Missile Defense System throughout the acquisition life cycle</p> <p>- 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</p> <p>- 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 Missile Defense System</p> <p>- Maintain Missile Intelligence Secure Link classified portal (full operational capability)</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <p>- SEE ABOVE.</p> <p>FY 2024 Plans:</p> <p>- SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>N/A.</p>				
<p>Title: Counterintelligence</p> <p>Articles:</p> <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> <p>- 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</p> <p>-- Engage National, Combatant Command and DoD CI resources to share and obtain threat information impacting MDA personnel, facilities, information, technologies, programs and activities, worldwide</p> <p>-- Provide CI, technical and cyber threat support to MDA flight tests, conferences, and 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</p>		8.150 -	7.216 -	7.248 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
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 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Execute life cycle replacement of outdated technical surveillance countermeasures and equipment 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 - Conduct CI 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 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 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 2023 Plans: - SEE ABOVE.</p> <p>FY 2024 Plans: - SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A.</p>					
<p>Title: Cybersecurity Engineering Program</p> <p align="right">Articles:</p> <p>Description: Cybersecurity Engineering is focused on developing designs and solutions to protect the Missile Defense Agency 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 Missile Defense System -- Develop requirements for building cybersecurity into incremental Missile Defense System 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, the DoD, and the Federal Government 			3.655 -	4.541 -	4.909 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
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 2022	FY 2023	FY 2024
<div>-- Perform cybersecurity systems engineering assessments for proposed System Specification and interface changes and additions</div> <div>- Provide and recommend updates to cybersecurity systems engineering policy and guidance for Missile Defense System design and acquisition to enhance resiliency against cyber threats</div> <div>- Implement cybersecurity engineering resiliency techniques</div> <div>- Provide objectives and requirements for Cybersecurity testing</div> <div>- Provide independent cybersecurity reviews at critical engineering milestones</div> <div>- Provide information system security engineering by assessing cybersecurity requirements, design, and implementations and provide recommendations to address architecture gaps or shortfalls</div> <div>- Implement cyber threat mitigation strategies within Missile Defense System architecture, design, system requirements, and specifications documentation to ensure traceability to necessary components and interfaces that make up the Missile Defense System</div> <div>- Coordinate evaluation of cybersecurity capability during System tests</div> <div>- Develop verification and assessment strategies for System cybersecurity requirements</div> <div>Specific and/or unique accomplishments to each FY are as follows:</div> <div>FY 2023 Plans:</div> <div>- SEE ABOVE.</div> <div>FY 2024 Plans:</div> <div>- SEE ABOVE.</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>N/A.</div>					
<div>Title: Program Protection</div> <div>Articles:</div> <div>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 Missile Defense System. Program Protection also coordinates MDA intelligence, counterintelligence and security for Missile Defense System test activities. Program goals include:</div> <div>- Perform reviews required for all Agency public release, security classification, and Freedom of Information Act and Mandatory Declassification Reviews to ensure sensitive Missile Defense information is not inadvertently released into the public domain</div> <div>- Perform Information Security program management and oversee implementation by MDA programs:</div>			9.902 -	11.766 -	12.076 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
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 2022	FY 2023	FY 2024
<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 - 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 Missile Defense System 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 - Continue continuous monitoring to determine security clearance eligibility - 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 2023 Plans:</p> <ul style="list-style-type: none"> - Implement and conduct continuous monitoring to determine continued security clearance eligibility <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>N/A.</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 Missile Defense System-level targets and countermeasures requirements to define target capabilities required to meet System flight test objectives. Program goals include:</p>			8.041 -	10.483 -	23.944 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
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 2022	FY 2023
<ul style="list-style-type: none"> - Develop threat definitions for system specifications -- Produce threat / scenario data for Missile Defense System 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 - 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 Missile Defense System 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 Instruction 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 2023 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Provide threat space and definitions for 2030 and beyond - Develop new representations for complex threat characteristics (e.g. wake models, ablation models, dynamic threat models) - Provide threat models and scenario data to support Warfighter Requests for Analysis and Analysis of Alternatives - Respond to quick reaction tasks and provide traceability of models in coordination with the IC - Innovate threat prediction tools and processes to increase threat production throughput - Increase threat data production supporting program and element design, development and verification activities - Increase production rate of target requirements and certification reports for FY 2024 <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Increase from FY 2023 to FY 2024 provides new threat definitions, analytical tools and threat phenomenologies for complex advanced and emerging threats.</p>			
Accomplishments/Planned Programs Subtotals		39.102	42.036

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency								Date: March 2023		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD28 / Intelligence & Security		

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

Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To	Total Cost
			Base	OCO	Total					Complete	
• 0305103C: Cyber Security Initiative	1.118	1.165	2.760	-	2.760	2.826	2.893	2.963	3.025	Continuing	Continuing

Remarks

D. Acquisition Strategy

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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Intelligence - Intelligence Analysis & Support	Allot	MDA : VA, AL, CO	38.815	5.360	Oct 2021	3.697	Oct 2022	3.822	Oct 2023	-		3.822	Continuing	Continuing	Continuing
Intelligence - Intelligence Analysis & Support - Special Prog	Various	Various : Various	1.948	0.000		0.000		0.000		-		0.000	0.000	1.948	0.000
Intelligence - Intelligence Support	C/CPFF	TEAMS : AL, VA, CO	40.693	3.469	Nov 2021	4.333	Nov 2022	4.655	Nov 2023	-		4.655	Continuing	Continuing	Continuing
Intelligence - Intelligence Support (OGA)	MIPR	Various : Various	0.000	0.525	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Intelligence - Intelligence Support - IT Maintenance	C/CPFF	Northrop Grumman : AL, CO	3.282	0.000		0.000		0.000		-		0.000	0.000	3.282	0.000
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	21.574	4.072	Oct 2021	2.702	Oct 2022	2.793	Oct 2023	-		2.793	Continuing	Continuing	Continuing
Counterintelligence - CI Analysis and Support	C/CPFF	TEAMS : AL, CO, VA	32.127	3.974	Nov 2021	4.064	Nov 2022	3.996	Nov 2023	-		3.996	Continuing	Continuing	Continuing
Counterintelligence - CI Surveillance Gear	Various	Various : Various	1.833	0.104	Jun 2022	0.450	Nov 2022	0.459	Nov 2023	-		0.459	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 Engineering - Hardware (OGA)	MIPR	DOD - USA - PROGRAM EXECUTIVE OFFICE ENTERPRISE INFORMATION SYSTEMS (PEO EIS) : AL	0.000	0.624	Mar 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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	19.144	1.332	Oct 2021	1.555	Oct 2022	1.876	Oct 2023	-		1.876	Continuing	Continuing	Continuing
Cybersecurity Engineering Program - Cybersecurity Engineering - Hardware	C/CPFF	JACOBS TECHNOLOGY INC. : AL, CO, VA	1.605	0.000		1.649	Nov 2022	1.963	Nov 2023	-		1.963	Continuing	Continuing	Continuing
Cybersecurity Engineering Program - Cybersecurity Engineering CSS	C/CPFF	TEAMS : VA, AL	6.958	1.699	Nov 2021	1.337	Nov 2022	1.070	Nov 2023	-		1.070	Continuing	Continuing	Continuing
Program Protection - Prior Year Program Protection Support no longer funded in FYDP	Various	Various : Various	18.452	0.000		0.000		0.000		-		0.000	0.000	18.452	0.000
Program Protection - Program Protection Analysis	Allot	MDA : VA, AL	37.851	4.557	Oct 2021	4.694	Oct 2022	4.851	Oct 2023	-		4.851	Continuing	Continuing	Continuing
Program Protection - Program Protection Analysis & Support	C/CPFF	TEAMS : AL, AK, CA, CO, VA	35.887	4.470	Nov 2021	5.930	Nov 2022	6.455	Nov 2023	-		6.455	Continuing	Continuing	Continuing
Program Protection - Program Protection Support	MIPR	DOD - DEFENSE INTELLIGENCE AGENCY (DIA) : VARIOUS	0.000	0.000		0.000		0.459	Nov 2023	-		0.459	Continuing	Continuing	Continuing
Program Protection - Program Protection Support - FFRDC	Various	Various : AL, VA, CO	0.000	0.875	Nov 2021	1.142	Nov 2022	0.311	Nov 2023	-		0.311	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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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	Allot	MDA : VA, AL, CO	27.825	1.389	Oct 2021	3.415	Oct 2022	3.526	Oct 2023	-		3.526	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - CSS	C/CPFF	TEAMS, Various : VA, AL	15.291	1.265	Nov 2021	4.155	Nov 2022	4.022	Nov 2023	-		4.022	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - CSS 2	C/CPFF	SEG (Systems Engineering Group, Inc.) : VA, AL	0.000	0.505	Nov 2021	2.271	Nov 2022	3.520	Nov 2023	-		3.520	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - CSS 3	C/CPFF	TBD : TBD	0.000	0.000		0.642	Jan 2023	6.500	Nov 2023	-		6.500	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - FFRDC	FFRDC	MIT/LL : MA	5.931	0.000		0.000		2.125	Nov 2023	-		2.125	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - FFRDC 2	FFRDC	SNL (Sandia National Laboratory) : MA	0.000	0.519	Dec 2021	0.000		0.638	Nov 2023	-		0.638	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - FFRDC 3	FFRDC	LLNL (Lawrence Livermore National Laboratory) : MA	0.000	1.275	Nov 2021	0.000		0.850	Nov 2023	-		0.850	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - OGA	MIPR	Various : CA, VA, AL	12.030	3.088	Nov 2021	0.000		0.000		-		0.000	0.000	15.118	0.000
Threat Systems Engineering - Threat Systems Engineering - UARC	FFRDC	JHU/APL : MD	8.424	0.000		0.000		2.763	Nov 2023	-		2.763	Continuing	Continuing	Continuing
Subtotal			365.255	39.102		42.036		56.654		-		56.654	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			365.255	39.102		42.036		56.654		-		56.654	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.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency

Date: March 2023

[illegible]

0400 / 4

[illegible]

PE 0603890C / BMD Enabling Programs

Project (Number/Name)	Start Date	End Date	Duration (Days)	Project Manager	Status	Notes
101	2023-01-01	2023-01-15	14	John Doe	Completed	Project completed successfully.
102	2023-01-16	2023-02-01	16	Jane Smith	In Progress	Project is currently in progress.
103	2023-02-02	2023-02-15	13	John Doe	Completed	Project completed successfully.
104	2023-02-16	2023-03-01	15	Jane Smith	In Progress	Project is currently in progress.
105	2023-03-02	2023-03-15	13	John Doe	Completed	Project completed successfully.
106	2023-03-16	2023-03-31	15	Jane Smith	In Progress	Project is currently in progress.
107	2023-04-01	2023-04-15	14	John Doe	Completed	Project completed successfully.
108	2023-04-16	2023-05-01	15	Jane Smith	In Progress	Project is currently in progress.
109	2023-05-02	2023-05-15	13	John Doe	Completed	Project completed successfully.
110	2023-05-16	2023-05-31	15	Jane Smith	In Progress	Project is currently in progress.

MD28 / Intelligence & Security

Significant Event Complete ▲



Milestone Decision Complete ★



Element Test Complete



System Level Test Complete



Complete Activity ♦



Significant Event Planned Δ



Milestone Decision Planned ☆



Element Test Planned



System Level Test Planned



Planned Activity ✦

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
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	2022	4	2028
Declassification Reviews	1	2022	4	2028
Development and delivery of Adversary Data Package (ADP)	1	2022	4	2028
MDA OPSEC Reporting to USD(I)	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD30: BMD Information Management Systems	735.046	88.568	87.822	91.609	-	91.609	92.439	96.898	95.602	97.511	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from Fiscal Year (FY) 2023 to FY 2024 provides for the addition of Development Security Operations (DEVSECOPS) software services to improve efficiencies and reduce redundancies.

A. Mission Description and Budget Item Justification

The Missile Defense System Information Management Systems budget project funds information technology mission critical functions necessary for the efficient operations and safeguarding of Missile Defense System information in compliance with Department of Defense (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, North Atlantic Treaty Organization partners, and other industry partners. Communication among these organizations facilitates the MDA mission of developing and fielding an integrated Missile Defense System 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. Missile Defense System 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, Non-secure Internet Protocol Router Network, 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. SPPNs
3. IT Planning and Solutions
4. Unified Communications

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems		
5. Portal and Data Services 6. Business Automation Services				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
Title: End User Support		23.657	12.605	16.349
Articles:		-	-	-
Description: Provides 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 Missile Defense System 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. Increase Joint Worldwide Intelligence Communications System capability to provide connectivity and interoperability with intelligence community via Common Operating Environment. Provides Workplace Next standard IT setup and collaborative software and tools to MDA users transitioned to full time telework. Provides hotel-style cubicles with standard IT setup, which can be reserved by teleworkers via an automated scheduling tool. Deliver Development Security Operations (DEVSECOPS) software services for continuous improvement and development to the Agency in an Agile methodology to improve efficiencies and reduce redundancies.				
Specific and/or unique accomplishments to each FY are as follows:				
FY 2023 Plans: - SEE ABOVE.				
FY 2024 Plans: - SEE ABOVE.				
FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides for the addition of DEVSECOPS for software services and Enterprise Licensing upgrade for improved Zero Trust capabilities.				
Title: Special Purpose Processing Nodes (SPPN)		4.097	6.779	5.210
Articles:		-	-	-
Description: Provides for the developmental/specialty engineering and operational strategies and concepts; and planning, design, implementation and maintenance for MDA RDT&E SPPNs in Huntsville, AL and Colorado Springs, CO. The SPPN				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
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>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>infrastructure consists of routers, switches, firewalls, compute, storage and intrusion detection systems that provide IT support to over 10,500 MDA classified/unclassified users worldwide, including Defense Industrial Base, Federally Funded Research Development Center/University Affiliated Research Center, and Other Government Agency partners in missile defense. 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 rehearsals; Internet access management; and web filtering. Sustains core communications distribution services 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 2023 Plans: - SEE ABOVE.</p> <p>FY 2024 Plans: - SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY2023 to FY2024 reflects decrease in investments in equipment at end-of-life.</p>			
<p>Title: Information Technology (IT) Planning and Solutions</p> <p align="right">Articles:</p> <p>Description: Provides 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 policies. Supports the MDA Chief Information Officer (CIO) 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, and the Office of Management and Budget IT budget reporting policies. Integrate CIO staff in strategic planning and complete 4th Estate IT Reform, agile capability delivery governance, capability and architecture modeling. Integrate monitoring and performance tools into a single pane of glass having drill down capabilities to device meta data and applications improving operations, incident resolution, test event configurations, and reducing schedules for capability enhancements to the Warfighter.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p>		15.553 -	16.444 -
		16.903 -	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
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 2022	FY 2023	FY 2024
FY 2023 Plans: - SEE ABOVE.				
FY 2024 Plans: - SEE ABOVE.				
FY 2023 to FY 2024 Increase/Decrease Statement: N/A				
Title: Unified Communications		20.139	23.333	24.015
Articles:		-	-	-
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 RDT&E mission for classified and unclassified voice services and interfaces with the Defense Information System Network Video Services Global, the DREN, and commercial vendors. Includes maintenance agreements and licenses for MDA Enterprise telecommunications equipment classified and unclassified mobile and desktop telephony devices. Integrate CISCO Jabber into the MDA Workplace Next operational environment to support the seamless integration of voice, video and data and enhance the workforce ability to communicate and function without limitations. Support the growing demand for remote (telework) access and collaborations services with the deployment of Jabber allowing for the reduction of communication hardware, systems services (i.e. physical phones, video teleconferences (VTCs), etc.).				
Specific and/or unique accomplishments to each FY are as follows:				
FY 2023 Plans: - SEE ABOVE.				
FY 2024 Plans: - SEE ABOVE.				
FY 2023 to FY 2024 Increase/Decrease Statement: N/A				
Title: Portal and Data Services		12.759	12.763	13.035
Articles:		-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
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 2022	FY 2023	FY 2024
<p>Description: Provides for the management, operation and maintenance support for the classified and unclassified MDA Portal application and the 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 2023 Plans: - SEE ABOVE.</p> <p>FY 2024 Plans: - SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>					
<p>Title: Business Automation Services</p> <p align="right">Articles:</p> <p>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 seven 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. Integrate Business intelligence and Data Management to streamline and formalize the activities associated with data storage, access, and handling. Provide comprehensive data governance, data cataloging and analytics to blend processes and technologies to significantly improve data quality, data security, and data accessibility. Improved data management leads to Machine Learning and Artificial Intelligence. Provide an opportunity for additional efficiencies and automation to support Missile Defense System processes, products, and decision forums with Artificial Intelligence capabilities.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p>			12.363 -	15.898 -	16.097 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023
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 2022	FY 2023	FY 2024
- SEE ABOVE.			
FY 2024 Plans: - SEE ABOVE.			
FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals	88.568	87.822	91.609

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603176C: <i>Advanced Concepts and Performance Assessment</i>	39.678	39.737	17.825	-	17.825	18.301	18.752	19.134	19.596	Continuing	Continuing
• 0603180C: <i>Advanced Research</i>	51.270	85.323	21.461	-	21.461	22.024	22.571	23.031	23.591	Continuing	Continuing
• 0603881C: <i>Ballistic Missile</i>	209.004	195.216	220.311	-	220.311	239.705	334.977	384.992	292.629	Continuing	Continuing
<i>Defense Terminal Defense Segment</i>											
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	250.123	230.502	239.159	-	239.159	212.191	233.877	242.623	251.226	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	628.014	595.572	693.727	-	693.727	639.678	706.974	699.611	733.909	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	50.261	50.269	48.248	-	48.248	49.164	50.445	51.542	52.859	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	44.188	49.367	50.549	-	50.549	56.624	58.020	59.193	60.615	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	147.241	164.668	177.868	-	177.868	196.952	176.633	162.632	162.578	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency									Date: March 2023		
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603913C: Israeli Cooperative Programs	300.000	300.000	300.000	-	300.000	300.000	300.000	300.000	300.000	Continuing	Continuing
• 0603914C: Ballistic Missile Defense Test	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing
• 0603915C: Ballistic Missile Defense Targets	560.445	579.075	570.258	-	570.258	583.747	642.329	664.683	510.063	Continuing	Continuing
• 0604880C: Land Based SM-3 (LBSM3)	42.156	27.678	22.163	-	22.163	20.479	21.193	21.620	21.736	Continuing	Continuing
• 0901598C: Management HQ - MDA	24.102	25.259	28.363	-	28.363	29.039	29.601	30.174	30.760	Continuing	Continuing
Remarks											
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 provides IT design, engineering, implementation and sustainment services. The Research and Development Enterprise Collaboration Services provides VTC, 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.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
End User Support - End User Civilian Pay	Allot	MDA : Various	26.201	3.789	Oct 2021	2.324	Oct 2022	2.578	Oct 2023	-		2.578	Continuing	Continuing	Continuing
End User Support - End User Consolidated Support Logistics/Asset Mgmt	C/CPFF	VENTURI, INC. : VARIOUS	1.354	0.525	Nov 2021	0.310	Nov 2022	0.372	Nov 2023	-		0.372	Continuing	Continuing	Continuing
End User Support - End User DoD365 Migration	MIPR	DOD - DEFENSE INFORMATION SYSTEMS AGENCY (DISA) : VARIOUS	0.000	0.000		0.000		1.387	Sep 2024	-		1.387	Continuing	Continuing	Continuing
End User Support - End User JWICS	MIPR	DOD - DEFENSE INTELLIGENCE AGENCY (DIA) : Various	0.000	0.000		0.659	Nov 2022	0.643	Nov 2023	-		0.643	Continuing	Continuing	Continuing
End User Support - End User Operational Support	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	144.104	19.343	Nov 2021	9.312	Nov 2022	11.369	Nov 2023	-		11.369	Continuing	Continuing	Continuing
Special Purpose Processing Nodes (SPPN) - SPPN Civilian Pay	Allot	MDA : Various	10.128	1.443	Oct 2021	3.501	Oct 2022	3.618	Oct 2023	-		3.618	Continuing	Continuing	Continuing
Special Purpose Processing Nodes (SPPN) - SPPN Operational Support	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	195.827	1.636	Nov 2021	2.035	Nov 2022	1.092	Nov 2023	-		1.092	Continuing	Continuing	Continuing
Special Purpose Processing Nodes (SPPN) - SPPN SWDC PNT	C/CPFF	NORTHROP GRUMMAN : VARIOUS	6.896	0.738	Nov 2021	0.753	Nov 2022	0.000		-		0.000	0.000	8.387	0.000
Special Purpose Processing Nodes (SPPN) - SPPN Specialty Engineering	C/CPFF	MODERN TECHNOLOGY SOLUTIONS, INC. : VA	0.000	0.280	Mar 2022	0.490	Nov 2022	0.500	Nov 2023	-		0.500	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Civilian Pay/Travel/PCS	Allot	DOD - MISSILE DEFENSE AGENCY (MDA) : Various	11.590	2.675	Oct 2021	3.806	Oct 2022	4.059	Oct 2023	-		4.059	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 Technology (IT) Planning and Solutions - IT Planning and Solutions Consolidated Support	C/Various	Various : Various	0.000	0.277	Nov 2021	0.577	Nov 2022	0.473	Nov 2023	-		0.473	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Consolidated Support - 5SRC	C/CPAF	FIVE STONES RESEARCH CORPORATION : Various	37.861	6.440	Aug 2022	5.748	Aug 2023	5.862	Aug 2024	-		5.862	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Operational Support	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	44.004	3.988	Mar 2022	4.510	Mar 2023	3.098	Mar 2024	-		3.098	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions SWDC PNT	C/CPFF	NORTHROP GRUMMAN : Various	0.000	2.173	Nov 2021	1.803	Nov 2022	3.411	Nov 2023	-		3.411	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Civilian Pay	Allot	MDA : Various	10.434	1.407	Oct 2021	1.076	Oct 2022	1.202	Oct 2023	-		1.202	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Leased Communication DREN	MIPR	DOD - USA - ENGINEER RESEARCH AND DEVELOPMENT CENTER (ERDC) : VARIOUS	0.000	1.534	Jan 2022	1.582	Jan 2023	1.598	Jan 2024	-		1.598	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Leased Communications/ Licenses	MIPR	Various : Various	38.856	0.854	Oct 2021	1.688	Oct 2022	0.518	Nov 2023	-		0.518	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Leased Communications/ Licenses - DISA	MIPR	DOD - DEFENSE INFORMATION SYSTEMS AGENCY (DISA) : VARIOUS	0.000	5.981	Oct 2021	6.764	Oct 2022	7.088	Oct 2023	-		7.088	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Unified Communications - Unified Communications Operational Support	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	20.468	2.855	Nov 2021	3.247	Nov 2022	3.224	Nov 2023	-		3.224	Continuing	Continuing	Continuing
Unified Communications - Unified Communications VTC Operations Support	C/CPIF	NETWORK MANAGEMENT RESOURCES, INC. : VARIOUS	52.260	5.909	Apr 2022	7.567	Apr 2023	8.962	Apr 2024	-		8.962	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Wireless Services	C/FFP	AT&T MOBILITY LLC : VARIOUS	10.913	1.599	Oct 2021	1.409	Oct 2022	1.423	Oct 2023	-		1.423	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Civilian Pay	Allot	MDA : Various	8.574	1.160	Oct 2021	0.497	Oct 2022	0.514	Oct 2023	-		0.514	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Operational Support- IRES	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	18.224	5.787	Jan 2022	5.718	Jan 2023	6.862	Jan 2024	-		6.862	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Operational Support- RECS	C/FFP	NETWORK MANAGEMENT RESOURCES, INC. : VARIOUS	36.786	5.471	Apr 2022	6.191	Apr 2023	5.352	Apr 2024	-		5.352	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Operational Support- Various	Various	Various : VARIOUS	3.668	0.341	Oct 2021	0.357	Oct 2022	0.307	Oct 2023	-		0.307	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Civilian Pay	Allot	MDA : Various	4.681	0.253	Oct 2021	0.665	Oct 2022	0.687	Oct 2023	-		0.687	Continuing	Continuing	Continuing
Business Automation Services - Business Automation DoD365 Migration	MIPR	DOD - DEFENSE INFORMATION SYSTEMS AGENCY (DISA) : Various	0.000	0.000		1.855	Nov 2022	0.000		-		0.000	0.000	1.855	0.000
Business Automation Services - Business	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	47.418	11.579	Nov 2021	8.502	Nov 2022	11.267	Nov 2023	-		11.267	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Automation Operational Support- IRES															
Business Automation Services - Business Automation Operational Support- RECS	C/CPAF	NETWORK MANAGEMENT RESOURCES, INC. : VARIOUS	0.000	0.531	Nov 2021	4.383	Nov 2022	3.634	Nov 2023	-		3.634	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Tools and Support	MIPR	Various : Various	0.124	0.000		0.493	Oct 2022	0.509	Oct 2023	-		0.509	Continuing	Continuing	Continuing
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			735.046	88.568		87.822		91.609		-		91.609	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			735.046	88.568		87.822		91.609		-		91.609	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency																Date: March 2023							
Appropriation/Budget Activity 0400 / 4								R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs								Project (Number/Name) MD30 / BMD Information Management Systems							
Significant Event Complete ▲				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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028			
Operate, monitor and sustain Information Technology Infrastructure across the MDA Enterprise								◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency		Date: March 2023
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 Information Technology Infrastructure across the MDA Enterprise	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC30: Cyber Operations	336.532	100.256	80.519	89.111	-	89.111	91.655	95.931	97.852	99.809	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 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.

Increase from Fiscal Year (FY) 2023 to FY 2024 provides cyber contractor support funding to reach full capacity of Missile Defense System Cyber Security Service Provider (CSSP) Tier II.

A. Mission Description and Budget Item Justification

A number of key Information Technology (IT) strategies were identified in the Department of Defense (DoD) IT 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. The Missile Defense Agency (MDA) must meet the National Command Authority Directives for rapid deployment of the Missile Defense System while complying with the key principles of Cybersecurity standards to ensure MDA remains a secure member of the DoD Information Network.

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 data and systems from rapidly evolving internal and external threats.

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 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).

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.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC30 / Cyber Operations		
The MDA's Tier II Cybersecurity Service Provider- Computer Emergency Response Team (CSSP-CERT), monitors the MDA classified and unclassified information technology research, development, test and evaluation (RDT&E) and common-use IT networks and reports vulnerabilities. The MDA CSSP 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. In FY 2020, the MDA CSSP began taking over CSSP responsibilities from United States Strategic Command 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 Cybersecurity 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, electronic security systems, industrial control systems, and supervisory control and data acquisition 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 2022	FY 2023	FY 2024
Title: Preventing Malicious Cybersecurity Activity		29.142	17.646	17.818
Articles:		-	-	-
Description: Provide: FISMA-related activities; Intrusion Prevention Systems; Trusted Internet Connections; Identity Management and Authentication; Supply Chain Management; Network & Data Protection and Insider Threat Mitigation Activities. 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 Missile Defense System locations.				
Recurring Activities for Preventing Malicious Cyber Attacks: - Maintain a current Cybersecurity risk and residual risk assessment of the Missile Defense System. - Coordinate Cybersecurity compliance for all IT projects and remote sites. - Implement measures to prevent unauthorized access to MDA Information Systems based on analysis of threat vectors. - Evaluate known threats against vulnerabilities to determine mitigation strategies. - Expand User Activity Monitoring and implement technology protection to improve cybersecurity, insider threat, and software assurance posture of the Missile Defense System; and provide increased ability to detect insider threats. - Recapitalization of Data Center/IT, addition of server/storage capability to support Top Secret level processing. - Implement Mission and RDT&E Software Assurance and Development Security and Operations (DEVSECOPS) tools and processes. - Conduct Cyber Threat Hunting for classified Defense Industry Base (DIB) and Missile Defense System environments. - Optimization of MDA Integration and Operations Center Infrastructure Special Use Space - Coordinate with private partnerships to ensure the DIB protects MDA data.				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
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 2022	FY 2023	FY 2024
Specific and/or unique accomplishments to each FY are as follows: FY 2023 Plans: - SEE ABOVE. FY 2024 Plans: - SEE ABOVE. FY 2023 to FY 2024 Increase/Decrease Statement: N/A					
Title: Planning, Policy Development, Workforce Training & Force Management Articles: Description: Provide National Initiative for Cybersecurity Education; Workforce Development; Security Training for Employees with Significant Security Responsibilities; and Cybersecurity Strategic Planning, Policy, Oversight and Management. Recurring Activities for the Planning, Policy Development, Workforce Training and Force Management Accomplishment: -Document and maintain Standard Operating Instructions/Procedures for consistent interface with the MDA Missile Defense System Network Operations Support Center and the Missile Defense System elements. -Publish MDA policies to incorporate new requirements stated in DoDI 8510.01 RMF to comply with 237 new controls and 817 control enhancements into controls validation testing of Missile Defense System elements and networks. -Manage the Cyberspace Workforce Management Program to certify Cybersecurity professionals and report compliance in accordance with FISMA and DoD Directive 8140.01 (Cyberspace Workforce Management), achieving the DoD certification goal; reports Cybersecurity Risk Assessments, Primary RMF artifacts. -Interface with other combatant commands to provide Missile Defense System Mission RMF package. -Conduct an annual Cybersecurity review of the Missile Defense System in accordance with DoDI 8510.01 and provide an analysis of changes in Cybersecurity posture. -Collect, analyze, and report vulnerability and cyber warfare attack metrics to the MDA Chief Information Officer, MDA leadership, and U.S. Cyber Command. -Provide Cybersecurity engineering and planning guidance and vulnerability assessment for all MDA Information Technology acquisition programs. Specific and/or unique accomplishments to each FY are as follows: FY 2023 Plans:			7.872 -	4.873 -	5.090 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
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 2022	FY 2023
- SEE ABOVE.			
FY 2024 Plans: - SEE ABOVE.			
FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Title: Continuous Monitoring		9.664	8.282
Articles:		-	-
Description: Provide IT Security Tools and Other Continuous Monitoring.			
Recurring Activities for the Continuous Monitoring Accomplishment: -Manage data-at-rest encryption to ensure compliance with DoD mandated policies. -Procure/renew cybersecurity software licensing agreements for IT Security Tools. -Procure/renew cybersecurity hardware maintenance for hardware.			
Specific and/or unique accomplishments to each FY are as follows:			
FY 2023 Plans: - SEE ABOVE.			
FY 2024 Plans: - SEE ABOVE.			
FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Title: Detect, Analyze and Mitigate Intrusions		52.560	47.921
Articles:		-	-
Description: Provide cybersecurity activities including: Federal Incident Response Centers; National Institute of Standards for Technology (NIST) SP 800.53 Rev 5 Implementation; Cyber Threat Analysis; Cyber Continuity of Operations; Incident Response and Remediation; Forensics and Damage Assessment; and Computer Emergency Response Teams.			
Recurring Activities for the Detect, Analyze and Mitigate Intrusions Accomplishment: - Test RMF controls on all IT supporting research, development, test and evaluation and DoD-controlled IT operated by a contractor or other entity on behalf of DoD and reported.			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
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 2022	FY 2023
<ul style="list-style-type: none"> - Conduct RMF analysis and reporting for the Missile Defense System such as evaluation of residual risk by incorporating current and proposed Missile Defense System monitoring and mitigations. - Maintain MDA and Missile Defense System Cybersecurity Service Provider - Computer Emergency Response Team (CSSP-CERT) as a fully accredited Tier II CSSP in accordance with CJCSI 6510.01F and DoD O-8530.1, and the DoD Cybersecurity Discipline Implementation Plan. - 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 monthly cybersecurity vulnerability audits. - Issue and track implementation of Information Assurance Vulnerability Alerts, Bulletins and Technical Advisories. - 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. - Compile and validate Missile Defense System Mission Element-level authorization and assessment documents to include Missile Defense System Element-level System Security Plans, Security Controls Traceability Matrix, POA&M artifacts and support conduct of CVT. Execute controls validation integration testing as part of developmental testing efforts for the Missile Defense System. - Ensure MDA mission, test, and common-use IT systems are operated securely in accordance with DoD RMF policies. - Prepare and maintain current RMF documentation for MDA networks and systems reported to DoD and OMB. <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <p>- SEE ABOVE.</p> <p>FY 2024 Plans:</p> <p>- SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Increase from FY 2023 to FY 2024 provides additional cyber contractors for Missile Defense System CSSP Tier II expansion.</p>			
<p>Title: Outside Federal Outreach - Defense Industrial Base</p> <p align="right">Articles:</p> <p>Description: Review current Cybersecurity Policies and coordinate with MDA Missile Defense System Programs to ensure all applicable Cybersecurity clauses are included into MDA contracts with MDA Industry partners in the DIB to ensure protection of</p>		0.140 -	0.832 -
		0.853 -	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
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 2022	FY 2023
Missile Defense System Controlled Unclassified Information. Resource Government Cybersecurity Maturity Model Certification (CMMC) Assessment Teams to conduct CMMC Level 3 assessments on identified MDA Tier 1 contracts.			
Specific and/or unique accomplishments to each FY are as follows:			
FY 2023 Plans: - SEE ABOVE.			
FY 2024 Plans: - SEE ABOVE.			
FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Title: Facility Related Control Systems (FRCS)		0.878	0.965
Articles:		-	-
Description: Provide 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 RMF throughout the life cycle of each FRCS. - Manage the cybersecurity activities to protect the FRCS, including vulnerability assessment and management, malware protection, information system continuous monitoring, 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 in accordance with Unified Facilities Criteria 4-010-06 Cybersecurity Of Facility-Related Control Systems to reduce cybersecurity risk and ensure compliance with applicable NIST Special Publication (SP) 800-53 Rev. 5 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.			
Specific and/or unique accomplishments to each FY are as follows:			
FY 2023 Plans: - SEE ABOVE.			
FY 2024 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023	
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 2022	FY 2023	FY 2024
- SEE ABOVE.				
FY 2023 to FY 2024 Increase/Decrease Statement: N/A				
Accomplishments/Planned Programs Subtotals		100.256	80.519	89.111
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy The Integrated Research and Development for Enterprise Solutions provides IT design, engineering, implementation and sustainment services.				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Preventing Malicious Cybersecurity Activity - Civilian Pay	Allot	MDA : Various	6.249	2.400	Oct 2021	1.502	Oct 2022	1.550	Oct 2023	-		1.550	Continuing	Continuing	Continuing
Preventing Malicious Cybersecurity Activity - Cyber CSS	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	63.360	26.097	Nov 2021	15.442	Nov 2022	15.389	Nov 2023	-		15.389	Continuing	Continuing	Continuing
Preventing Malicious Cybersecurity Activity - Cyber MDS CSM/CND and COMSEC	C/Various	Various : VARIOUS	2.175	0.645	Mar 2022	0.702	Nov 2022	0.879	Nov 2023	-		0.879	Continuing	Continuing	Continuing
Planning, Policy Development, Workforce Training & Force Management - A&AS Cyber MDS CSM/CND	C/CPFF	SYSTEM HIGH CORPORATION : VARIOUS	7.878	5.754	Nov 2021	2.842	Nov 2022	1.887	Nov 2023	-		1.887	Continuing	Continuing	Continuing
Planning, Policy Development, Workforce Training & Force Management - Civilian Pay	Allot	MDA : Various	4.584	1.627	Oct 2021	1.573	Oct 2022	1.716	Oct 2023	-		1.716	Continuing	Continuing	Continuing
Planning, Policy Development, Workforce Training & Force Management - Cyber CSS	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	0.000	0.000		0.000		1.020	Nov 2023	-		1.020	0.000	1.020	0.000
Planning, Policy Development, Workforce Training & Force Management - FFRDC	MIPR	DOD - USA - COMMUNICATIONS ELECTRONICS COMMAND (CECOM) : VARIOUS	0.000	0.491	Nov 2021	0.458	Nov 2022	0.467	Nov 2023	-		0.467	Continuing	Continuing	Continuing
Continuous Monitoring - Continuous Monitoring - IT Security Tools	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	37.261	9.664	Jan 2022	8.282	Jan 2023	8.385	Jan 2024	-		8.385	Continuing	Continuing	Continuing
Detect, Analyze and Mitigate Intrusions - A&AS Cyber MDS CSM/CND	C/CPFF	SYSTEM HIGH CORPORATION : VARIOUS	6.471	0.000		2.107	Aug 2023	2.553	Aug 2024	-		2.553	0.000	11.131	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Detect, Analyze and Mitigate Intrusions - A&AS Cyber Risk Mgmt	C/CPFF	DECISIVE ANALYTICS CORPORATION : VARIOUS	14.661	2.854	Mar 2022	4.146	Mar 2023	4.229	Mar 2024	-		4.229	Continuing	Continuing	Continuing
Detect, Analyze and Mitigate Intrusions - Civilian Pay/Travel/PCS	Allot	DOD - MISSILE DEFENSE AGENCY (MDA) : Various	10.800	3.053	Oct 2021	4.640	Oct 2022	5.301	Oct 2023	-		5.301	Continuing	Continuing	Continuing
Detect, Analyze and Mitigate Intrusions - Cyber CSS	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	169.364	37.095	Jan 2022	26.492	Jan 2023	36.944	Jan 2024	-		36.944	0.000	269.895	0.000
Detect, Analyze and Mitigate Intrusions - Cyber Customer Support	C/CPAF	NETWORK MANAGEMENT RESOURCES, INC. : Various	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 : Various	0.000	0.200	Aug 2022	0.000		0.600	Aug 2024	-		0.600	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
Detect, Analyze and Mitigate Intrusions - Tier II CSSP	C/FFP	FOUR POINTS TECHNOLOGY, L.L.C. : CO	0.000	9.358	Apr 2022	10.536	Apr 2023	6.340	Apr 2024	-		6.340	Continuing	Continuing	Continuing
Outside Federal Outreach - Defense Industrial Base - Civilian Pay	Allot	MDA : Various	0.504	0.140	Oct 2021	0.832	Oct 2022	0.853	Oct 2023	-		0.853	Continuing	Continuing	Continuing
Facility Related Control Systems (FRCS) - Cyber Security and Cyber Resiliency	MIPR	BOOZ ALLEN HAMILTON INC. : Various	0.000	0.878	Nov 2021	0.965	Nov 2022	0.998	Nov 2023	-		0.998	Continuing	Continuing	Continuing
Subtotal			336.532	100.256		80.519		89.111		-		89.111	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			336.532	100.256		80.519		89.111		-		89.111	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																							
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs										Project (Number/Name) MC30 / Cyber Operations																	
Significant Event Complete ▲					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 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
Operate, monitor, and sustain Cyberspace Activities Infrastructure across the MDA Enterprise.										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
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
Operate, monitor, and sustain Cyberspace Activities Infrastructure across the MDA Enterprise.	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD31: Modeling & Simulation	532.457	78.389	71.045	65.702	-	65.702	67.222	67.717	69.247	70.614	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from Fiscal Year (FY) 2023 to FY 2024 reflects completed delivery of initial versions of GTISS and EDISS, alignment to the Missile Defense System ground test schedule, and realignment of funding to higher Agency priorities.

A. Mission Description and Budget Item Justification

The Missile Defense Agency's (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, North Atlantic Treaty Organization, 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 Missile Defense System 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 2022	FY 2023	FY 2024
Title: M&S Requirements, Design Support, Scenario Optimization	9.332	8.865	10.958
Articles:	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
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 2022	FY 2023	FY 2024
<p>Description: This activity provides the integrated program life cycle planning and requirements definition of all Missile Defense System 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 Missile Defense System development, testing, and assessment. The following actions are required on a continuing basis to accomplish the M&S life cycle planning and requirements definition mission:</p> <ul style="list-style-type: none">- Maintain traceability between the M&S Systems Requirements Documents and M&S product development- Support Missile Defense System-level and element-level engineering, including M&S planning, assessment, and requirements definition, and performing developmental integration activities- Conduct integration, testing and system-level verification per the digital System Requirements Document and the Digital Concept of Operations- 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 Missile Defense System capability deliveries- Provide integrated program life cycle 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; core truth model development; threat model development, verification, and analysis; and integration and deployment of MDA's distributed real-time HWIL and digital M&S simulation capabilities- Develop/sustain models and simulations tailored to the specific needs of the Agency's test events; match Missile Defense System components in their various stages of development or sustainment as required for the test venue <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2024 Plans: - SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides for consolidation of M&S planning and requirements definition.</p>				
Title: BMDS Simulations & Tools		10.584	11.381	10.650
Articles:		-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
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 2022	FY 2023	FY 2024
<p>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:</p> <p>Event Integration/Support Operations:</p> <ul style="list-style-type: none">- Deliver integrated architecture instantiations of the Missile Defense System 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- Provide simulation capability for System and Element M&S development laboratories- 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), Satellite TADIL-J, and Link-16) and network analysis support via the Tactical Communications Environment Segment for M&S, threat, and Element developmental integration activities- Perform operational planning for planned Missile Defense System 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 Missile Defense System elements/components using MDA's International Simulation (I-SIM) in support of CCMD and International Wargames, conceptual planning, visualizations, training/orientation, M&S demonstrations, and the Warfighter's Modification & Fielding Requirements List 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 code base for use in Warfighter exercises, training venues, and Combatant Command planning tools- Provide, maintain, and operate a secure M&S execution infrastructure for digital system simulations- Upgrade models and develop new designs or software as required to support System simulations					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
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 2022	FY 2023
<ul style="list-style-type: none"> - 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 Department of Defense - Develop products that meet digital and HWIL requirements and allow M&S participation across multiple intended uses - Update and provide new M&S capabilities to support development of: <ul style="list-style-type: none"> -- Develop signature, environment, and lethality models to include debris environment -- Adapt M&S framework and interfaces to accommodate new Missile Defense System assets -- Develop threat representations and provide threat data for Missile Defense System test, analysis, and assessment <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2024 Plans: - SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>			
<p>Title: M&S Objective Simulation Framework (OSF)</p> <p align="right">Articles:</p> <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 - Develop, sustain and enhance framework, other M&S tools, and products to maintain capabilities to support stakeholders and to keep pace with evolving requirements to support Ground Test, Flight Test and Digital venues or any specified IMTP event. - 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 		12.273 -	12.510 -
		12.261 -	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
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 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - 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 - 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 2023 Plans: - SEE ABOVE.</p> <p>FY 2024 Plans: - SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>					
<p>Title: M&S Core Truth Modeling</p> <p align="right">Articles:</p> <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 Missile Defense System capability needs for tracking, discrimination and engagement - Maintain legacy truth representations (e.g., Parametric Endoatmospheric-Exoatmospheric Lethality Simulation, Kinetic Intercept Debris Distribution and Optical Signatures Code/Optical Signature Inline Generator) 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) - Deliver updated vehicle characteristics during flight utilizing mature production processes - Deliver infrared (IR) Hardbody and Ballistic Missile Defense System OPIR Architecture data production essential to future Missile Defense System testing - Provide validation and verification evidence for radio frequency (RF) and IR Signatures to support accreditation decisions 			11.475 -	12.182 -	12.461 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
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 2022	FY 2023
<ul style="list-style-type: none"> - 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> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>N/A</p>			
<p>Title: M&S Improvements</p> <p align="right">Articles:</p> <p>Description: This effort funds Missile Defense System Enterprise-wide M&S improvements that will enhance flight, ground, and digital test capabilities. This effort designs and develops simulation capabilities that provide assessment data (supplemental to Ground- and Flight tests) in areas that those venues cannot address. The effort includes two components: End-to-end Digital Integrated System-level Simulation (EDISS) and Ground Test Integrated System-level Simulation (GTISS). The EDISS supports digital predictive pre-mission analysis. MDA is also implementing Ground Test Re-architecture to address accreditation and assessment limitations, increased HWIL complexity and reduced available integration times. The GTISS effort 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. Accomplishing these improvements includes the following:</p> <ul style="list-style-type: none"> - Execute agile software development of incremental versions for continuous deliveries of enhanced EDISS/GTISS capabilities - Conduct Model Based Systems Engineering for requirements analysis, functional analysis, design and implementation - Conduct continuous integration, test and verification of incremental software versions - Conduct continuous developmental checkout of incremental software builds - Conduct in-progress reviews to assess addition of new capability and provision of project status - Perform M&S data production to support Missile Defense System Increment builds - Conduct integrated end-to-end analysis of software capabilities - Assess and implement courses of action for advanced and emerging capabilities as appropriate <p>Specific and/or unique accomplishments to each FY are as follows:</p>		34.725 -	26.107 -
		19.372 -	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023
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 2022	FY 2023	FY 2024
<i>FY 2023 Plans:</i> - Complete development and delivery of EDISS initial version, including engineering, integration, and testing - Continue software development of EDISS next instantiation: -- Continue systems engineering -- Conduct integration and testing -- Perform M&S data production to support Missile Defense System Increment builds - Complete initial GTISS improvements to the MDA Ground Test Architecture: -- Complete software development -- Provide Threat Data Production improvements -- Complete M&S integration, test and verification, and checkout -- Deliver improvements to the MDA Ground Test architecture - Continue engineering and development of GTISS next instantiation: -- Continue software development, including in-progress technical reviews -- Conduct, integrate, test and verify, and checkout <i>FY 2024 Plans:</i> - SEE ABOVE. <i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Decrease from FY 2023 to FY 2024 reflects completed delivery of initial versions of GTISS and EDISS, alignment to the Missile Defense System ground test schedule, and realignment of funding to higher Agency priorities.			
Accomplishments/Planned Programs Subtotals	78.389	71.045	65.702

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603881C: <i>Ballistic Missile</i>	209.004	195.216	220.311	-	220.311	239.705	334.977	384.992	292.629	Continuing	Continuing
<i>Defense Terminal Defense Segment</i>											
• 0603882C: <i>Ballistic</i>	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing
<i>Missile Defense Midcourse</i>											
<i>Defense Segment</i>											
• 0603892C: <i>AEGIS BMD</i>	628.014	595.572	693.727	-	693.727	639.678	706.974	699.611	733.909	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency							Date: March 2023		
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)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
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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 Federally Funded Research Development Centers (FFRDCs) and University Affiliated Research Centers (UARCs).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
M&S Requirements, Design Support, Scenario Optimization - FFRDC & UARC	MIPR	Various : CO, AL	10.701	0.518	Nov 2021	0.632	Nov 2022	0.603	Nov 2023	-		0.603	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	PARSONS GOVERNMENT SERVICES INC. : CO, AL	43.365	5.581	Nov 2021	8.233	Nov 2022	10.355	Nov 2023	-		10.355	Continuing	Continuing	Continuing
M&S Requirements, Design Support, Scenario Optimization - Requirements & Design - Industry	Various	Various : Various	1.134	3.233	Dec 2021	0.000		0.000		-		0.000	0.000	4.367	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	7.569	1.750	Nov 2021	1.568	Nov 2022	1.598	Nov 2023	-		1.598	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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	16.803	8.461	Nov 2021	8.463	Nov 2022	8.926	Nov 2023	-		8.926	Continuing	Continuing	Continuing
BMDS Simulations & Tools - M&S / Digital Framework Support	Various	MDA : CO, AL	3.559	0.087	Feb 2022	0.000		0.000		-		0.000	0.000	3.646	0.000
BMDS Simulations & Tools - M&S / Digital Framework Support - CSS	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : CO	6.494	0.286	Nov 2021	1.350	Nov 2022	0.126	Nov 2023	-		0.126	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	3.402	0.000		0.000		0.000		-		0.000	0.000	3.402	0.000
M&S Objective Simulation Framework (OSF) - Continuous Integration Requirements Development	Various	Various : CO, AL	3.778	0.000		0.000		0.000		-		0.000	0.000	3.778	0.000
M&S Objective Simulation Framework (OSF) - M&S HWIL - CSS	C/CPFF	JACOBS TECHNOLOGY INC. : CO, AL	8.751	1.769	Nov 2021	6.656	Nov 2022	4.060	Nov 2023	-		4.060	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/CPAF	LOCKHEED MARTIN CORPORATION : AL, CO	46.150	8.582	Nov 2021	0.000		2.525	Nov 2023	-		2.525	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
M&S Objective Simulation Framework (OSF) - M&S HWIL Simulations / Models - Various	Various	Various : CO, AL	5.957	1.539	Dec 2021	1.721	Dec 2022	0.936	Dec 2023	-		0.936	Continuing	Continuing	Continuing
M&S Objective Simulation Framework (OSF) - M&S HWIL Simulations / Models Development	MIPR	CCDC : AL	28.911	0.383	Nov 2021	4.133	Nov 2022	4.740	Nov 2023	-		4.740	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	Various : Various	4.100	0.540	Nov 2021	0.700	Nov 2022	0.700	Nov 2023	-		0.700	Continuing	Continuing	Continuing
M&S Core Truth Modeling - Core Truth Modeling - Engineering	C/CPAF	PEOPLETEC, INC. : AL	4.282	0.000		0.000		0.000		-		0.000	0.000	4.282	0.000
M&S Core Truth Modeling - Core Truth Models Validation	Various	MDA : CO, AL	10.665	0.000		0.000		0.000		-		0.000	0.000	10.665	0.000
M&S Core Truth Modeling - M&S Core Truth Modeling	C/CPAF	DECIBEL RESEARCH, INC : AL	4.479	5.740	Nov 2021	5.844	Nov 2022	6.525	Nov 2023	-		6.525	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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
M&S 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
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	11.402	5.195	Nov 2021	5.638	Nov 2022	5.236	Nov 2023	-		5.236	Continuing	Continuing	Continuing
M&S Improvements - Enterprise-wide ground test re-architecture improvements	Various	Various : CO, AL	40.864	12.963	Dec 2021	11.284	Dec 2022	0.647	Dec 2023	-		0.647	Continuing	Continuing	Continuing
M&S Improvements - M&S Improvement - Enterprise-wide digital capability development	Various	Various : CO, AL	91.932	21.762	Nov 2021	14.823	Nov 2022	18.725	Nov 2023	-		18.725	Continuing	Continuing	Continuing
Subtotal			532.457	78.389		71.045		65.702		-		65.702	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			532.457	78.389		71.045		65.702		-		65.702	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.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency																Date: March 2023															
Appropriation/Budget Activity								R-1 Program Element (Number/Name)								Project (Number/Name)															
0400 / 4								PE 0603890C / BMD Enabling Programs								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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028											
Deliver Initial EDISS												▲																			
EDISS Updates / New Capability Development for MDS Increments												◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇								
Deliver Initial GTISS												△																			
GTISS Updates / New Capability Development for MDS Increments													◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇								
M&S Framework Updates / New Capability Development for MDS Increments								◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇						
Threat Model Updates / New Capability Development								◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇					
Missile Defense Advanced Simulation Updates / New Capability Development								◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇				
MDST Updates / New Capability Development								◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇				

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
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>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Deliver Initial EDISS	1	2023	1	2023
EDISS Updates / New Capability Development for MDS Increments	2	2023	4	2028
Deliver Initial GTISS	2	2023	2	2023
GTISS Updates / New Capability Development for MDS Increments	3	2023	4	2028
M&S Framework Updates / New Capability Development for MDS Increments	1	2022	4	2028
Threat Model Updates / New Capability Development	1	2022	4	2028
Missile Defense Advanced Simulation Updates / New Capability Development	1	2022	4	2028
MDST Updates / New Capability Development	1	2022	4	2028

Note

International Simulation (I-Sim) renamed Missile Defense Advanced Simulation (MDASim) beginning in FY 2023.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC31: Engineering Cyber Operations	88.396	40.913	24.978	25.854	-	25.854	29.379	30.010	30.663	31.319	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

Engineering and Cyber Operations 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 Missile Defense Agency (MDA) Senior Information Assurance Officer/Certification Authority and Designated Approving Authority. Independent Verification and Validation team actions ensure the availability, integrity, authentication, confidentiality and non-repudiation of the MDA mission, test and administrative systems. Activities are necessary to comply with the Federal Information Security Management Act.

Engineering and Cyber Operations implements Risk Management Framework (RMF) system engineering principles as specified within the Department of Defense (DoD) Instruction 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 800-53a security controls as applicable to systems categorized as National Security Systems.

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

Engineering and Cyber Operations also includes 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 2022	FY 2023	FY 2024
Title: Information Assurance / Cyber Network Defense	40.913	24.978	25.854
Articles:	-	-	-
Description: This activity includes network defense and Information System Security Manager 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023
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 2022	FY 2023	FY 2024
<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 - Execute System-level Supply Chain and Cyber Risk Management (SC2RM) program - Continue MDA Insider Threat Mitigation Team efforts - Perform engagements with MDA Defense Industrial Base partners to detect and increase understanding of cyber threats <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Execute an effective SC2RM program to prevent unmitigated risks from degrading the performance of components and systems across the supply chain. <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>N/A.</p>			
Accomplishments/Planned Programs Subtotals	40.913	24.978	25.854

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0305103C: Cyber Security Initiative	1.118	1.165	2.760	-	2.760	2.826	2.893	2.963	3.025	Continuing	Continuing

Remarks

D. Acquisition Strategy

This program 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 Assistance Team Leads	MIPR	MITRE : VA, AL	6.225	2.057	Nov 2021	2.000	Nov 2022	1.653	Nov 2023	-		1.653	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cyber Assistance Teams - CSS & H/W	Various	Various : VA, AL	20.138	10.541	Nov 2021	6.866	Nov 2022	6.899	Nov 2023	-		6.899	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cyber Assistance Teams - Hardware	MIPR	Program Executive Office (PEO) Enterprise Information Systems (EIS) : VA, AL	4.199	0.000		0.000		0.000		-		0.000	0.000	4.199	0.000
Information Assurance / Cyber Network Defense - Cyber Assistance Teams - Intelligence Reporting	C/CPAF	DELOITTE CONSULTING LLP : AL, VA	4.961	0.000		0.000		0.000		-		0.000	0.000	4.961	0.000
Information Assurance / Cyber Network Defense - Cyber Assistance Teams - Software/Licenses	MIPR	Program Executive Office (PEO) Enterprise Information Systems (EIS) : AL, VA	5.220	2.600	Jan 2022	2.700	Nov 2022	2.741	Nov 2023	-		2.741	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cyber Engineering	Various	Various : AL, VA	6.792	1.378	Dec 2021	0.275	Dec 2022	0.981	Dec 2023	-		0.981	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cyber Engineering - CSS	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : VA, AL	4.602	1.593	Dec 2021	0.000		0.000		-		0.000	0.000	6.195	0.000
Information Assurance / Cyber Network Defense - Cyber Engineering - FFRDC/UARC	MIPR	Various : Various	2.303	2.102	Apr 2022	0.000		0.000		-		0.000	0.000	4.405	0.000
Information Assurance / Cyber Network Defense	MIPR	THE MITRE CORPORATION : AL	5.291	0.000		1.080	Dec 2022	0.923	Dec 2023	-		0.923	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
- Cyber Engineering - VISUM															
Information Assurance / Cyber Network Defense - Cyber Program Protection	C/CPFF	TEAMS : CO, AL, VA	0.000	0.560	Nov 2021	0.725	Nov 2022	1.230	Nov 2023	-		1.230	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Cyber SW Engineering & Assessment	MIPR	USA CCDC AVIATION AND MISSILE CENTE : AL	5.210	1.520	Apr 2022	0.000		0.000		-		0.000	0.000	6.730	0.000
Information Assurance / Cyber Network Defense - Cybersecurity - Systems Engineering - OGA	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	0.000	2.552	Apr 2022	0.000		0.000		-		0.000	0.000	2.552	0.000
Information Assurance / Cyber Network Defense - Cybersecurity - Systems Engineering & Anti-tamper	Various	Various : Various	0.000	4.219	May 2022	0.000		0.000		-		0.000	0.000	4.219	0.000
Information Assurance / Cyber Network Defense - Cybersecurity - User Activity Monitoring	C/CPAF	JACOBS TECHNOLOGY INC. : Various	0.000	2.814	Jun 2022	0.000		0.000		-		0.000	0.000	2.814	0.000
Information Assurance / Cyber Network Defense - Cybersecurity Resiliency Strategy Implementation	Various	Various : Various	0.000	2.334	Jun 2022	0.000		0.000		-		0.000	0.000	2.334	0.000
Information Assurance / Cyber Network Defense - IT / CND Support	C/CPFF	TEAMS : CO, AL, VA	7.733	1.858	Nov 2021	2.790	Nov 2022	2.846	Nov 2023	-		2.846	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Insider Threat - SSO / Mitigation Cell	C/CPFF	TEAMS : CO, AL, VA	5.021	1.175	Dec 2021	1.050	Dec 2022	1.958	Dec 2023	-		1.958	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 - Insider Threat Mitigation Cell - IT	C/CPAF	Northrop Grumman : CO	4.042	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Software Assurance	C/CPFF	TEAMS : CO, AL	6.659	1.049	Dec 2021	1.726	Dec 2022	1.780	Dec 2023	-		1.780	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Supply Chain and Cyber Risk Management (SC2RM)	MIPR	Various : Various	0.000	0.921	Nov 2021	0.950	Nov 2022	1.011	Nov 2023	-		1.011	Continuing	Continuing	Continuing
Information Assurance / Cyber Network Defense - Supply Chain and Cyber Risk Management (SC2RM) - TEAMS Analysis	C/CPFF	Various : AL	0.000	1.640	Jun 2022	2.250	Dec 2022	0.000		-		0.000	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		2.566	Dec 2022	3.832	Dec 2023	-		3.832	Continuing	Continuing	Continuing
Subtotal			88.396	40.913		24.978		25.854		-		25.854	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			88.396	40.913		24.978		25.854		-		25.854	Continuing	Continuing	N/A
Remarks Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																							
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs										Project (Number/Name) MC31 / Engineering Cyber Operations																	
Significant Event Complete ▲					Milestone Decision Complete ★					Element Test Complete ◆					System Level Test Complete ●					Complete Activity ◆																	
Significant Event Planned △					Milestone Decision Planned ☆					Element Test Planned ◇					System Level Test Planned ○					Planned Activity ◇																	
										FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
Engineering Cyber Operations										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC31 / Engineering Cyber Operations

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Engineering Cyber Operations	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD32: Quality, Safety, and Mission Assurance	354.246	32.852	30.737	31.383	-	31.383	32.145	32.763	33.432	34.115	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 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 Missile Defense System 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 Missile Defense Agency (MDA) Assurance Representatives 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 Missile Defense System elements.

Safety: Responsible for ensuring the safe design, test and operation of the Missile Defense System 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. Missile Defense System Safety Officers provide on-site support at the Missile Defense Integration and Operations Center 24 hours a day, 7 days a week, and 365 days a year to ensure operational safety of the Missile Defense System.

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

	FY 2022	FY 2023	FY 2024
Title: Quality, Safety & Mission Assurance	32.852	30.737	31.383
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 2023 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MD32 / <i>Quality, Safety, and Mission Assurance</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
-SEE ABOVE.			
FY 2024 Plans: -SEE ABOVE.			
FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals		32.852	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, Contract Support Services, and Industry.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Quality, Safety & Mission Assurance - Audits & Quality On-site Support	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) CORONA DIVISION : CA	32.878	2.823	Nov 2021	3.024	Nov 2022	3.209	Nov 2023	-		3.209	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	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	4.037	0.471	Nov 2021	0.504	Nov 2022	0.523	Nov 2023	-		0.523	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Mission Assurance Subject Matter Experts	C/CPFF	APT, INC. : AL	9.083	0.000		0.000		0.000		-		0.000	0.000	9.083	0.000
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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Quality, Safety & Mission Assurance - Parts, Materials and Processes (PMP) Program	MIPR	Various Multi : AL, CA, DC, IN	20.969	3.199	Nov 2021	0.992	Nov 2022	0.619	Nov 2023	-		0.619	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 - Parts, Materials, and Processes (PMP) Engineering	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) CRANE DIVISION : IN	0.000	1.312	Nov 2021	1.443	Nov 2022	1.483	Nov 2023	-		1.483	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Pedigree & Design Certification - FFRDC	MIPR	DOD - USSF - SPACE AND MISSILE SYSTEMS CENTER (SMC) : CA	33.825	2.859	Nov 2021	2.930	Nov 2022	3.039	Nov 2023	-		3.039	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Quality and Mission Assurance Support	C/CPFF	AI SOLUTIONS, INC. : AL	19.111	6.906	Nov 2021	6.999	Nov 2022	7.347	Nov 2023	-		7.347	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Safety Support	C/CPFF	ARES CORPORATION : AL	4.549	0.392	Jan 2022	0.679	Jan 2023	0.781	Jan 2024	-		0.781	Continuing	Continuing	Continuing
Subtotal			194.485	17.962		16.571		17.001		-		17.001	Continuing	Continuing	N/A
Remarks N/A															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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				
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
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	125.762	14.395	Oct 2021	13.607	Oct 2022	13.583	Oct 2023	-		13.583	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Quality, Safety & Mission Assurance Operations Support (NMR/Jacobs/Yorktown/Travel/PCS)	Various	Various : Various	33.999	0.495	Oct 2021	0.559	Oct 2022	0.799	Oct 2023	-		0.799	Continuing	Continuing	Continuing
Subtotal			159.761	14.890		14.166		14.382		-		14.382	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			354.246	32.852		30.737		31.383		-		31.383	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 Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023								
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028	
MD32 Quality, Safety, and Mission Assurance										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency		Date: March 2023
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	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program-Wide Support	235.121	23.102	21.491	21.247	-	21.247	22.343	25.835	26.331	28.847	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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	23.102	21.491	21.247
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
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>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
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.			
FY 2023 Plans: - SEE ABOVE.			
FY 2024 Plans: - SEE ABOVE.			
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 provides the PWS allocation 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.			
Accomplishments/Planned Programs Subtotals		23.102	21.491
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Facilities and Maintenance	MIPR	Various Multi: : AL, CO, CA, VA	32.854	0.000		0.063	Nov 2022	0.000		-		0.000	0.000	32.917	0.000
Program Wide Support - Agency Facilities and Maintenance SRM	MIPR	Army Corps of Engineers : Multi: AL, CA, AL, AK	1.752	0.033	May 2022	0.000		0.000		-		0.000	0.000	1.785	0.000
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	Allot	MDA : AK, AL, CA, CO, VA	64.743	17.624	Oct 2021	17.849	Oct 2022	21.247	Oct 2023	-		21.247	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	8.519	0.000		0.000		0.000		-		0.000	0.000	8.519	0.000
Program Wide Support - Agency Operations and Support Services	C/Various	STRATEGIC ALLIANCE BUSINESS GROUP LLC : Multi: AK, AL, CO, CA, HI, MD, VA	115.139	5.427	Dec 2021	3.579	Nov 2022	0.000		-		0.000	0.000	124.145	0.000
Program Wide Support - Agency Operations, Sustainment and GPC	C/CPFF	Various Multi: : AK, AL, CA, HI, NY, VA	0.000	0.018	Nov 2021	0.000		0.000		-		0.000	0.000	0.018	0.000
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			235.121	23.102		21.491		21.247		-		21.247	Continuing	Continuing	N/A
Remarks N/A															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency											Date: March 2023		
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	235.121	23.102		21.491		21.247		-		21.247	Continuing	Continuing	N/A

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

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																							
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs										Project (Number/Name) MD40 / Program-Wide Support																	
Significant Event Complete ▲					Milestone Decision Complete ★					Element Test Complete ◆					System Level Test Complete ●					Complete Activity ◆																	
Significant Event Planned △					Milestone Decision Planned ☆					Element Test Planned ◇					System Level Test Planned ○					Planned Activity ◇																	
										FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
MD40 Program-Wide Support										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
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	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603891C / <i>Special Programs - MDA</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	3,429.423	443.503	316.977	552.888	-	552.888	496.365	451.156	411.698	381.138	Continuing	Continuing
MD27: <i>Special Programs</i>	3,429.423	443.503	316.977	552.888	-	552.888	496.365	451.156	411.698	381.138	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

A. Mission Description and Budget Item Justification

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

B. Program Change Summary (\$ in Millions)	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	413.374	316.977	276.846	-	276.846
Current President's Budget	443.503	316.977	552.888	-	552.888
Total Adjustments	30.129	0.000	276.042	-	276.042
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	40.000	0.000			
• SBIR/STTR Transfer	-9.871	0.000			
• Other Adjustment	0.000	0.000	276.042	-	276.042

Change Summary Explanation

Further details are reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603892C / <i>AEGIS BMD</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	5,818.908	628.014	595.572	693.727	-	693.727	639.678	706.974	699.611	733.909	Continuing	Continuing
MD09: <i>Aegis BMD</i>	3,680.053	336.371	344.810	446.480	-	446.480	354.561	332.425	328.853	368.774	Continuing	Continuing
MM09: <i>Aegis BMD SM-3 Development</i>	849.412	119.798	85.633	42.323	-	42.323	78.754	151.302	129.335	117.755	Continuing	Continuing
MC09: <i>Cyber Operations</i>	45.948	3.661	4.431	5.972	-	5.972	6.236	6.263	6.430	6.602	Continuing	Continuing
MX09: <i>Aegis BMD Development Support</i>	837.174	136.589	138.909	173.105	-	173.105	177.638	188.903	207.636	212.658	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	406.321	31.595	21.789	25.847	-	25.847	22.489	28.081	27.357	28.120	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Increase from FY 2023 to FY 2024 provides for Technology maturation and prototyping for Army/Navy Surface Radar Surveillance and Control (AN/SPY)-1 Digital Receive Upgrade (DRU) (formerly Digital Low Noise Amplifier (dLNA)); additional Guam Defense Weapon System Development activities in support of the Guam Architecture and Milestone schedule; increased development, testing and certification of BMD 6.0.1 development to include additional raid evaluation capability and performance improvements for larger Integrated Air and Missile Defense (IAMD) scenarios; Model Based System Engineering computing needs for Aegis BMD baseline development as well as expansion of prototyping and development of Electronic Protection mitigations to address the advancing threat; and software upgrades for Standard Missile (SM)-3 (SM-3) Block IB Radio Frequency Links missile enhancement in conjunction with the Aegis Weapon System (AWS).

A. Mission Description and Budget Item Justification

The Sea-Based Weapon Systems mission is to deliver an enduring, operationally effective and supportable BMD capability to defend the nation, deployed forces, friends and allies, and to increase this capability by delivering evolutionary improvements as part of Missile Defense System upgrades. The Sea-Based Weapon Systems element of the Missile Defense System capitalizes upon and evolves from the existing U.S. Navy AWS and SM infrastructures. Sea-Based Weapon Systems provides a forward-deployable, mobile capability to detect and track Ballistic Missiles of all ranges, and the ability to destroy Short-Range Ballistic Missiles, Medium-Range Ballistic Missiles, and Intermediate-Range Ballistic Missiles in the midcourse phase of flight, and shorter range missiles in the terminal phase of flight. Sea-Based Weapon Systems also provides a Long Range Surveillance and Track capability to the Missile Defense System. Upgrades to both the Aegis BMD Weapon System and the SM-3 configuration enable Sea-Based Weapon Systems to provide effective, supportable defensive capability against longer range, threats and an enduring Aegis Ashore defensive capability.

This Program Element also provides the development of the Aegis Weapon System Software configuration for the Aegis portion of the Defense of Guam, including capabilities for defense against advanced ballistic threats and integration of Land Based Radar configuration.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603892C / <i>AEGIS BMD</i>
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This Program Element includes Missile Defense System threat discrimination improvements, which will enhance Missile Defense System effectiveness against the evolving adversary threat. The result will be a Missile Defense System architecture more capable of discriminating and destroying reentry vehicles with a higher degree of confidence, improving Warfighter shot doctrine, and more efficiently using interceptor inventory. Missile Defense System threat discrimination improvements are funded from the Enabling (0603890C), Midcourse (0603882C), BMD Sensors (0603884C), Command and Control, Battle Management, and Communications (0603896C), and Aegis BMD (0603892C) PEs.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	639.549	600.072	658.798	-	658.798
Current President's Budget	628.014	595.572	693.727	-	693.727
Total Adjustments	-11.535	-4.500	34.929	-	34.929
• Congressional General Reductions	0.000	-1.000			
• Congressional Directed Reductions	0.000	-9.500			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	6.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-11.535	0.000			
• Other Adjustment	0.000	0.000	34.929	-	34.929

Change Summary Explanation

FY 2023 Congressional Add of \$6.0 million in Project MD09 Aegis BMD for Lightweight telescope for advanced AEGIS interceptor.

FY 2023 Congressional Directed Reductions Total \$9.5 million:

Project: MD09 Aegis BMD for Program growth (\$5.429 million)

Project: MX09 AEGIS BMD Development Support for Program growth (\$2.571 million) and Program operation growth (\$1.5 million)

Increase in FY 2024 provides additional funding to support Guam architecture and timelines.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MD09 / Aegis BMD			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD09: Aegis BMD	3,680.053	336.371	344.810	446.480	-	446.480	354.561	332.425	328.853	368.774	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The Increase from FY 2023 to FY 2024 provides the following:

-Aegis BMD 5.x Development: Increased technology maturation and prototyping support for Army/Navy Surface Radar Surveillance and Control (AN/SPY)-1 Digital Receive Upgrade (DRU) (formerly Digital Low Noise Amplifier (dLNA))

-Guam Defense Aegis BMD Development: Increased weapon system development activities in support of the Guam Architecture and Milestone schedule.

-Aegis BMD 6.x Development: Additional development, testing and certification of BMD 6.0.1 development to include additional raid evaluation capability and performance improvements for larger Integrated Air and Missile Defense (IAMD) scenarios.

-Aegis Ballistic Missile Defense Technology and design Model Based Systems Engineering computing needs for Aegis BMD baseline development as well as expansion of prototyping and development of Electronic Protection mitigations to address the advancing threat.

-RF Link Improvements: Continued software upgrades for Standard Missile (SM)-3 (SM-3) Block IB Radio Frequency (RF) Links missile enhancement in conjunction with the Aegis Weapon System (AWS).

A. Mission Description and Budget Item Justification

Sea-Based Weapon Systems continues development of a Sea-Based BMD capability in support of the Missile Defense Agency's (MDA's) mission to protect the homeland, deployed forces, friends and allies from ballistic missile threats of all ranges and in all stages of flight.

Systems Engineering & Integration performs requirements development, engineering analysis, capability integration, and performance verification for Aegis BMD development and Missile Defense System integration.

Aegis BMD Technology Design and Insertion enables cross-baseline specification management and capability assessments to ensure consistent application of technical standards, processes, and procedures across the Aegis BMD program. Aegis BMD specific efforts include: systems engineering and architecture (process and execution); modeling and simulation (M&S); Verification and Validation (V&V) test and evaluation support; ship integration; quality; safety and mission assurance M&S. V&V efforts in this accomplishment are performed at the Aegis BMD element level, which feed into the overall Missile Defense System level.

Aegis Baseline (BL) 5.4.1 (BMD 4.2) is a joint effort with the U.S. Navy that refurbishes existing ship AN/SPY-1 radar arrays with the installation of antenna Low Noise Amplifiers (LNAs). As a result of cost growth and schedule MDA and Navy jointly realigned the LNA program to include software upgrades only with no LNA hardware procurements. The restructured program referred to as BMD 4.1.3 will develop spiral capability for the non-LNA upgrades beginning in FY 2024 to include SBT Increment 2 Capability Upgrade, Hypersonic Tracking and Reporting, Mission Planner Console update, and Threat Database re-architecture. This capability will deliver to 21 Flight I/II DDGs beginning in FY 2025.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD		
Aegis BL 9 (BMD 5.1.5) software spiral aligns with U.S. Navy Aegis Baseline 9 Capability Package 2024. The software spiral provides enhanced detection, track, report, and defeat capabilities of additional medium, intermediate, and long-range threats with increasingly complex engagement scenes and increased raid sizes. Through a series of unique Capability Insertion Packages, BMD 5.X capability spirals provide continuous software updates to the original BMD 5.1.0 architecture to incorporate emerging Missile Defense System capabilities, War fighter improvements, SM-3 software updates, and improved Weapon System performance necessary to pace the threat. Aegis BL 9 (BMD 5.1.5) software spiral includes support for AN/SPY-1 Radar sensitivity improvements, technology maturation, and prototyping that will demonstrate enhanced Missile Defense tracking performance against longer range and more sophisticated threats in challenging and complex environments.				
Aegis BL 10 (BMD 6.0 and BMD 6.0.1) incorporates the solid state Air and Missile Defense Radar (AMDR), now designated AN/SPY-6(v)1, for introduction on the first Flight III DDG. Aegis BL 10 (BMD 6.0) will provide deployed assets enhanced IAMD capability, while enabling Missile Defense System element utilization of SPY-6 data for remote engagement. Enhancements include significant improvements in Integrated Air and Missile Defense (IAMD) planning, search, track, discrimination and force level (multi-asset) raid defense. Aegis BL 10 (BMD 6.0) will enable U.S. Navy ships to maintain greater stand-off range while increasing performance against complex threats. Aegis BL 10.1 (BMD 6.0.1) provides the next software spiral for capability and performance improvements to IAMD and raid defense.				
This Program Element also provides the development of the Aegis Weapon System Software configuration for the Aegis portion of the Defense of Guam, including capabilities for defense against advanced ballistic threats and integration of the Land Based Radar configuration.				
M&S Objective Simulation Framework (OSF) effort develops, maintains and deploys the framework hardware and software for use at element laboratories and Combatant Command (CCMD) locations to support Integrated Master Test Plan (IMTP) events, Missile Defense System capability delivery assessments, War fighter training, exercises, and wargames.				
M&S Missile Defense System Simulations & Tools effort provides development and sustainment of digital products and the architecture framework, and delivery/ maintenance of infrastructure for Missile Defense System performance assessments.				
Missile Defense System Assessment and Verification, Validation & Assessment (VV&A) includes activities to support Missile Defense System Operational Capability Baseline (OCB) delivery decisions and Technical Capability Declarations, and anchor System M&S.				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
Title: Systems Engineering & Integration		20.788	19.818	20.430
Articles:		-	-	-
Description: Perform requirements development, engineering analysis, capability integration, and performance verification for Aegis BMD development and Missile Defense System integration, including Aegis BMD compliance with the Missile Defense System Specification and Missile Defense System Description Document.				
Recurring Accomplishments:				
- Conduct system level performance analyses to support ongoing Missile Defense System Architecture and Systems Engineering efforts				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / <i>AEGIS BMD</i>	Project (Number/Name) MD09 / <i>Aegis BMD</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> - Support Ground Test Campaign for Missile Defense System to achieve OCB declaration - Execute V&V activities and provide results to MDA System Verification Team and the Operational Test Agency (OTA) in support of System-level accreditation for Ballistic Missile Defense System (BMDS) events - Provide M&S Requirements Management and Development - Conduct further development of Aegis BMD System Architecture and overarching system concepts - Conduct Missile Defense System level requirements allocation and Aegis BMD system requirements development, trace, validation and verification, and configuration management for coordination with all participating external agencies and organizations - Perform Command, Control, Computer, Communications and Intelligence (C4I) systems engineering to further develop Aegis BMD requirements, and to identify and resolve Missile Defense System interoperability issues - Define and coordinate development and implementation of C4I capabilities in U.S. Navy C4I programs of record to meet Aegis BMD requirements - Conduct Threat Engineering analysis and Requirements Assessment - Conduct Systems Engineering for Aegis BMD system-level M&S development and interfaces to the Missile Defense System architecture - Provide verified, validated, accredited models in support of U.S. Navy certification, MDA characterization of system-level performance, OTA assessment of operational capabilities, and representation of Aegis BMD capabilities in Missile Defense System test and exercise venues - Provide target engineering, test planning activities, and IMTP process/inputs for Aegis BMD - Conduct Performance Assessment and Verification processes which assess the sufficiency of Objective Quality Evidence (OQE) to provide a traceable evidence to verify Element Specification requirements traced to Missile Defense System requirements - Provide oversight of all Aegis BMD analysis in support of systems assessment and verification supporting test and analysis requirements and test planning inputs to align with MDA and U.S. Navy test programs - Provide consolidated analysis and reporting for firing events <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Continue providing residual capability analysis of deployed Aegis Ballistic Missile Defense Systems and SM-3 versus threats not covered in design requirements, specifically to improve response time to Combatant Command (COCOM) and Fleet requests for analysis - Integrate and improve threat data development tools with Prime contractor M&S - Maintain and expand dedicated analysis work force to support large-scale global analysis case matrix execution - Expand infrastructure to support large data library of performance analysis for read access upon request by COCOM and the Fleet while maximizing use of tactical code 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> - Develop and deploy Artificial Intelligence/Machine Learning (AI/ML) tools in a swarm learning environment to manage M&S input parameters and post-processing of large data sets - Continue Combat System Test Bed (CSTB) IAMD capability integration for M&S planning and VV&A of SM-3 Block IIA, SM-3 Block IB and SM-6 missile models using Aegis BMD 5.x performance assessment as risk reduction for Aegis BMD 6.x efforts - Fabricate and test the advanced telescope assembly and compare with SM-3 baseline program capabilities to inform the program on capability roadmap improvements against advanced threats. - Congressional add: Lightweight telescope for advanced AEGIS interceptor (\$6.0 million). <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Provide Digital Engineering improvements to ensure access to cloud based high-speed network communications, data, and tools for increased collaboration, analysis support, and fidelity across the development, analysis, test, and systems engineering efforts - Begin transitioning baseline development from current methodologies to Digital Engineering (Model Based Systems Engineering and AI/ML) practices - Continue providing residual capability analysis of deployed Aegis BMDS and SM-3 versus threats not covered in design requirements, specifically to improve response time to COCOM and Fleet requests for analysis - Expand prototyping and development of Electronic Protection mitigations; includes models and simulation development to support testing activities - Conduct studies for parametric threat space expansion based upon the updated Homeland Defense Ballistic Missile Threat Space for Aegis BMD engagements - Develop Feature Aided Track Correlation capability to support Interceptors ability to address complex threats - Investigate AI/ML feature extraction and new sensor architectures - Integrate and improve threat data development tools with Prime contractor M&S - Maintain and expand dedicated analysis workforce to support large-scale global analysis case matrix execution - Expand infrastructure to support large data library of performance analysis for read access upon request by COCOM and the Fleet while maximizing use of tactical code - Continue CSTB IAMD capability integration for M&S planning and VV&A of SM-3 Block IIA, SM-3 Block IB and SM-6 missile models using Aegis BMD 5.x performance assessment as risk reduction for Aegis BMD 6.x efforts <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides Model Based Systems Engineering computing needs for Aegis BMD baseline development as well as expansion of prototyping and development of Electronic Protection mitigations to address the advancing threat.</p>			
Title: Aegis BMD 4.x Development		54.633	26.199
Articles:		-	-
		28.093	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>Description: Aegis Baseline 5.4.0 (BMD 4.1.2) incorporates the BMD 5.0 Capability Upgrade of European Phased Adaptive Approach (EPAA) Phase II Endo-atmospheric/Exo-atmospheric (ENDO/EXO) requirements including EPAA Phase II EXO threats, integration of the SM-3 Block IB Threat Upgrade, and reintroduction of other Aegis capabilities integrated with the SM-6 Dual I (ENDO only). It provides Aegis Modernization capabilities comparable to the BMD 4.0 ships with legacy computer processing architecture. BMD 4.1.3 will develop spiral capability for the non-LNA upgrades beginning in FY 2024 to include SBT Increment 2 Capability Upgrade, Hypersonic Tracking and Reporting, Mission Planner Console update, and Threat Database re-architecture. This capability will deliver to 21 Flight I/II DDGs beginning in FY 2025.</p> <p>Recurring Accomplishments:</p> <ul style="list-style-type: none"> - Update Critical Item Development (CIDS), Interface Description Specifications (IDS) and all supporting engineering documents and plans - Conduct design studies and concepts supporting development and integration - Conduct Aegis BMD performance analysis supporting In-Process Reviews (IPR) - Participate in program leadership and technical forums including Program Management Team, System Engineering Team, and Cross Product Teams for Integration and Test, M&S, Test, Evaluation & Certification, and Fleet Integration and Design - Provide Weapon System updates to include MIL-SPEC UYK-43, Commercial Off-The-Shelf (COTS) BMD Signal Processor, and COTS adjunct processor updates - MDA / U.S. Navy co-funded effort to provide BMD capability on Flight I/II DDGs <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <p>For Aegis Baseline 5.4.1 (BMD 4.2) with LNA:</p> <ul style="list-style-type: none"> - Begin system Integration Testing at Surface Combat System Center, Wallops Island - Continue prototype Install on first ship to finalize Ship Change Notice development in support of future ship installs in preparation of At-Sea testing and tracking event - Develop final baseline updates , Engineering Test and Evaluation, and Multi-Element Integration and Test with regression testing to support: - AEGIS BL 5.4.1 Engineering Evaluation - AEGIS BL 5.4.1 (BMD 4.2) Engineering Assessment (EA) - Continue increased threat sensitivity runs in MEDUSA to account for new additional threats - Complete the incorporation of new baseline requirements as a result of an FY 2020 System Requirements Review (SRR) <p>FY 2024 Plans:</p> <p>Begin development of Aegis Baseline 5.4.X (BMD 4.1.3):</p> <ul style="list-style-type: none"> - Conduct In Process Review to establish baseline schedule and development plans. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD		Project (Number/Name) MD09 / Aegis BMD	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Initiate system development and testing. - Begin Ship Change Document (SCD) updates. <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>					
<p>Title: Aegis BMD 5.x Development</p> <p align="right">Articles:</p> <p>Description: In alignment with U.S. Navy Aegis Baseline 9 Capability Packages (2022 and 2024), Aegis BMD 5.X will develop a series of unique Capability Insertion Packages (CIP) and AN/SPY-1 Radar sensitivity technology maturation and prototyping that expand detection, track, report, and defeat capabilities of emerging threat systems with increasingly complex engagement scenes and raid sizes. Aegis BMD capability packages are focused towards Aegis Baseline 9 DDGs and Aegis Ashore Missile Defense Systems. Annual capability upgrades are necessary to pace the evolving threat, improve system reliability, and incorporate technological growth.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: Continues Aegis BMD 5.1.5 (Aligned with Navy Aegis Baseline 9 2024): CIP Includes:</p> <ul style="list-style-type: none"> - Expanded Hypersonic Track and Report (Increment 2): Continues development and delivery of Hypersonic tracking and reporting with Missile Defense System performance requirements - Expanded Aegis BMD Threat Space: Provides integration of additional threats to the Aegis weapon system (aligns with SM-3 Block IIA Build 8.2/8.3 software updates and threat set) - Aegis BMD Warfighter Improvements: Incorporates/Integrates Warfighter feedback through enhancements to existing functionality <p>AN/SPY-1 RADAR sensitivity improvement technology maturation and prototyping of dLNA:</p> <ul style="list-style-type: none"> - Demonstrate improved tracking performance, resource utilization, and performance against longer range and more sophisticated threats through implementation of digital receive technologies <p>Support includes:</p> <ul style="list-style-type: none"> - Maturation of critical RADAR technologies necessary to digitize receive chain of in-service AN/SPY-1 Radar - Procure prototype hardware and assemble prototype array - Develop RADAR calibration techniques 			42.663 -	78.247 -	126.808 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>- Assess System performance against existing and emerging threat systems</p> <p>FY 2024 Plans: Deliver Aegis BMD 5.1.5 (Aligned with Navy Aegis Baseline 9 CP 2024): CIP Includes: Support includes the design, development, integration, and developmental test of BMD 5.1.5 capabilities listed above. FY2022 and FY2023 efforts included development in Technical Insertion 2012 Hybrid (TI-12H) and TI-16 Mod 0 hardware. In coordination with Navy, MDA is adding TI-16 Mod 1 hardware integration with U.S. Navy including updated system operating environment necessary to address cyber requirements. The addition of new hardware architecture and in an effort to maintain alignment with the U.S. Navy CP 2024 schedule, BMD 5.1.5 milestones (with integrated Sea-Based Terminal Increment 3) are adjusted from what was reported in PB23 (see R4).</p> <p>Perform AN/SPY-1 Radar sensitivity improvement technology maturation and prototyping of DRU (formerly dLNA):</p> <ul style="list-style-type: none"> - Conduct software code and test activities - Maturation of critical RADAR technologies necessary to digitize receive chain of in-service AN/SPY-1 Radar to be demonstrated at Preliminary Design Review (PDR) for IPR #3 - Assemble prototype array - RADAR calibration techniques - Conduct near-field testing activities - Commence Multi-element Integration testing - Assessment of System performance against existing and emerging complex threat systems <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides additional technology maturation and prototyping development for AN/SPY-1 DRU (formerly dLNA) including software test activities, assembling of the prototype array, and near-field testing.</p>			
<p>Title: Aegis BMD 6.x Development</p> <p align="right">Articles:</p> <p>Description: The U.S. Navy is developing the Advance Capability Build (ACB) 20 CS and the AMDR, now designated SPY-6(V)1, for introduction on the first DDG Flight III. Aegis BMD 6.0 and Aegis BMD 6.0.1 will integrate Aegis BMD 5.1 capability with the ACB 20 Combat System, to include new SPY-6 requirements. Aegis BMD 6.0 and 6.0.1 exploit SPY-6 radar improvement to enhance Engagement and Search and Track capabilities to include discrimination, raid defense and expanded threat space. This will enable Missile Defense System element utilization of AN/SPY-6(V)1 data for remote engagements and will supplement deployed assets with simultaneous multi-mission capabilities (e.g. IAMD). AMDR will support a force-level (multi-asset) approach to raid defense and will enable U.S. Navy ships to have a greater stand-off range from threat environments.</p> <p>Recurring Accomplishments:</p>		85.551 -	59.954 -
		68.691 -	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> - CIDS, IDS and all supporting engineering documents and plans - Conduct design studies and concepts supporting development and integration - Conduct Aegis BMD performance analysis supporting IPR - Participate in program leadership and technical forums including Program Management Team, System Engineering Team, and Cross Product Teams for Integration and Test, M&S, Test, Evaluation & Certification, and Fleet Integration and Design - Develop computer program for Aegis BMD 6.0 supporting Software Increment Reviews - MDA/Navy co-funded effort to provide BMD capability on Flight III DDGs - Expanded BMD Tracking and reporting updates <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Aegis BMD 6.0 software development (Aligned with AEGIS baseline 10.0) <p>Capabilities include:</p> <ul style="list-style-type: none"> - Improved Mission Planner - Provides an Integrated Air and Missile Defense mission planner with increased accuracy, and engagement control functionality - Increased Organic Engagement Capacity - Provides increased ship operating areas by utilizing the increased radar performance of AN/SPY-6(V)1 - Kill Assessment Improvements - Provides improved analysis of intercept to better determine whether the intercept was successful - Increased IAMD Raid Performance - Exploits functionality of AN/SPY-6(V)1 to improve raid performance - BMD Coordinator Submode - Warfighter improvement consolidating all BMD related display functionality under a single submode - Increased IAMD performance with Sea Based Terminal Increment 2 Capability Upgrade - AN/SPY-6(V)1 integration efforts, capability development, and performance analysis with focus shifted to on-ship/at-sea - Aegis BMD 6.0 design, code, test and performance analysis across the BMD Mission area with focus shifted to on-ship/at-sea - Commence baseline certification preparation and mission readiness assessment - Support ship sailaway from building yard, arrival at homeport, and preparation for the start of test and evaluation activities. <p>- Commence Aegis BMD 6.0.1 software development (Aligned with AEGIS baseline 10.1)</p> <p>Capabilities include:</p> <ul style="list-style-type: none"> - BMD Engagement Control - Limit the number of simultaneous BMD engagements and weapons expended - Mobile Platform Planning - Off-ship IAMD plan development and on-ship mission plan import/export - Raid Evaluator - Capability to evaluate against raid and display predicted raid performance for a mission plan solution <p>FY 2024 Plans:</p>			

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>- Aegis BMD 6.0 software development (Aligned with Aegis Baseline 10.0):</p> <p>- AN/SPY-6(V)1 and Aegis BMD 6.0 test efforts, defect correction, and performance analysis with focus on-ship/at-sea</p> <p>- Support ship execution of test and evaluation activities leading to Baseline Certification, Flt III and AMDR Initial Operational Capability assessment, and BMD 6.0 Operational Capability Baseline decision.</p> <p>- Aegis BMD 6.0.1 software development (Aligned with AEGIS baseline 10.1) Capabilities include:</p> <p>- BMD Engagement Control - Limit the number of simultaneous BMD engagements and weapons expended</p> <p>- Mobile Platform Planning - Off-ship IAMD plan development and on-ship mission plan import/export</p> <p>- Raid Evaluator - Add capability to evaluate against raid and display predicted raid performance for a mission plan solution</p> <p>- Provide additional performance improvements - Incorporate further design updates identified during BMD 6.0 development and provide further performance improvement for larger IAMD scenarios</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Increase from FY 2023 to FY 2024 provides BMD 6.0 increased development, testing and certification of BMD 6.0.1 development to include additional raid evaluation capability and performance improvements for larger IAMD scenarios.</p>			
<p>Title: Modeling & Simulation Objective Simulation Framework</p> <p align="right">Articles:</p> <p>Description: This effort develops, maintains and deploys the framework hardware and software for use at element laboratories and CCMD locations to support IMTP events, Missile Defense System capability delivery assessments, Warfighter training, exercises, and Wargames.</p> <p>Recurring Accomplishments:</p> <p>- 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</p> <p>- Sustain and enhance framework products to maintain capabilities to support stakeholders</p> <p>- Develop plans, procedures and documentation for scheduled events including Wargames and Combatant Command Exercises and the Distributed, Focused and Integrated hardware in the loop (HWIL) Events as presented in the IMTP. Provide event architecture integration and checkout of Wargames for these same IMTP scheduled events</p> <p>- Provide the ground test architecture integration expertise to meet the testing requirements of the IMTP. Support delivery of integrated architectures for test across all test venues using the Missile Defense System test framework to integrate distributed architectures</p> <p>- Develop, maintain, test, field, and operate model representations for use in events and other MDA M&S stakeholder application areas. Deploy hardware and software updates to distributed sites. Perform regular maintenance and critical repairs of hardware and software.</p>		29.562 -	34.326 -
		36.285 -	

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Control and maintain the M&S Integration and Development Laboratories for Element M&S. Maintain venue for stakeholders to conduct early integration efforts and identification of issues prior to event architecture integration to support system development. - Maintain System-level M&S framework <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2024 Plans: - SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>					
<p>Title: M&S BMDS Simulations &Tools</p> <p align="right">Articles:</p> <p>Description: This effort includes: development and sustainment of digital products and the architecture framework, and delivery/ maintenance of infrastructure for Missile Defense System performance assessments.</p> <p>Recurring Accomplishments:</p> <ul style="list-style-type: none"> - Integrate, test, and verify the M&S enterprise supporting Missile Defense System testing, assessment, exercises, and wargaming, including testing infrastructure. Guide and facilitate integration testing of MDA's M&S frameworks and core truth models, and all M&S components into virtual representations of the Missile Defense System that are credible, affordable, and provide decision makers with the data needed - 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 - Continue the transition of real-time digital simulation capability to the OSF to support Intended Uses - Provide HWIL/M&S Benchmarking/Integration documentation and coordination - Conduct M&S system integration and verification to support M&S system architecture development. Provide developmental integration testing to support M&S system architecture integration <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2024 Plans:</p>			4.405 -	4.383 -	4.355 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
- SEE ABOVE.			
FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Title: BMDS Verification, Validation & Assessment (VV&A)		18.971	19.281
Articles:		-	-
Description: This activity includes Missile Defense System Assessment and VV&A activities to support OCB delivery decisions, and anchor System modeling and simulation. Recurring Accomplishments: - Verify Missile Defense System performance, and produce verification status reports - Conduct extensive analysis of data collected in System ground and flight test events, instrumental to understanding Missile Defense System operations and performance and anchoring models and simulations - Identify mitigation approaches for Missile Defense System performance issues uncovered during system level analysis and assessment - Maintain M&S VV&A database, and verification data for Missile Defense System Specification Change Notices - Develop, maintain, and update the M&S VV&A tool kit - Provide recommendations for improving assessment confidence, including M&S and testing issue resolutions - Conduct V&V in support of MDA System-level accreditation process in support of Missile Defense System Ground Test and performance assessment events - Conduct specified System-level post-flight reconstructions, element post-flight reconstructions, and pre-mission testing events so as to optimize the body of evidence and analysis supporting system-level Missile Defense System accreditation. Specific and/or unique accomplishments to each FY are as follows: FY 2023 Plans: - SEE ABOVE. FY 2024 Plans: - SEE ABOVE. FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Title: RF Link Improvements		26.469	2.257
Articles:		-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
<p>Description: Design, develop, and deliver Radio Frequency (RF) Link Security Improvements that implement advance communications between Aegis BMD Weapon System and SM-3 Block IB and IIA missile variants. Product development and implementation will enable missile hardware enhancements in order to achieve the full requisite Missile RF Link Security Improvements. Priority will be on the BL 9 and SM-3 BLK IIA followed by BL 9/10 and SM-3 BLK IB.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Complete final integration and test of RF Link updates between the Aegis BL 9 Weapon System (BMD 5.1.5) and the SM-3 Block IIA Missile <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Additional upgrades to Aegis BMD weapon system(s) and SM-3 BLK IB missile hardware and software to enhance missile-to-ship communications. - Replace Plate 3A (radio) & Computer Processing Unit Circuit Card Assembly with IIA Aegis Data Link to address obsolescence issues. <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Increase from FY 2023 to FY 2024 provides the SM-3 BLK IB RF Links missile enhancement in conjunction with the Aegis Weapon System software upgrade.</p>					
<p>Title: Guam Defense Aegis BMD Development</p> <p align="right">Articles:</p> <p>Description: Develop the Aegis Weapon System Software configuration for land based Defense of Guam (DoG) including capabilities for defense against advanced ballistic threats and integration of the Land Based SPY-7 Radar configuration.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> -Define DoG Architecture and develop requirements to support a distributed Aegis network (remote radars, remote launchers) -Conduct platform engineering studies and hardware/software prototyping required for a relocatable array -Develop new weapon system specifications for relocatable array and distributed weapon system/launchers -Conduct element level, as well as Multi-Element level integration testing -Develop Aegis compliance threat space and conduct early performance analysis to optimize Aegis system performance -Design and code new electronic protection techniques that take advantage of solid state radar technologies -Develop Aegis Guam system requirements compliant with Missile Defense System requirements and conduct a system requirements review 			0.000 -	45.000 -	80.400 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
<p>-Begin design and development of new radar adaptation data, fire control calculation changes to support remote launchers, encrypted communication methods between Aegis Guam System components, and modular Guam Defense System Operations Center components.</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Finalize development of new weapon system specifications and continue development of distributed weapon system with relocatable array and launchers - Complete Aegis Guam system requirements compliant with Missile Defense System requirements and participate in Defense of Guam requirements review - Conduct element level, as well as Multi-Element level integration testing - Continue Aegis compliance threat space and performance analysis to inform requirements development and optimize Aegis Guam System performance - Design and code new electronic protection techniques that take advantage of solid state radar technologies - Continue design and development of new radar adaptation data, fire control calculation changes to support remote launchers, encrypted communication methods between Aegis Guam System components, and modular Guam Defense System Operations Center components. - Develop training plan that optimizes existing capabilities and easily adapted for Lead Service use <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>The increase from FY 2023 to FY 2024 provides Pacific Deterrence Initiative (PDI) funding increase by \$35.4 million for advanced development of the Aegis Guam System architecture and program milestones and delivery schedules.</p>			
Accomplishments/Planned Programs Subtotals	336.371	344.810	446.480

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0208866C: MD09 <i>Aegis BMD Procurement</i>	334.621	402.235	374.756	-	374.756	372.639	528.486	537.124	550.011	0.000	3,099.872
• 0208866C: MD09: <i>Aegis BMD O&M</i>	77.170	69.071	72.224	-	72.224	85.696	99.209	96.412	93.554	Continuing	Continuing
• 0208866C: MD73: Aegis <i>Ashore Procurement</i>	27.866	30.056	2.390	-	2.390	0.976	0.000	0.000	0.000	0.000	61.288
• 0208866C: MD90: Aegis Hardware <i>and Software Procurement</i>	79.791	78.181	27.825	-	27.825	44.886	28.442	35.485	31.771	Continuing	Continuing

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To	
			Base	OCO	Total					Complete	Total Cost
• 0603898C: <i>Ballistic Missile</i>	50.261	50.269	48.248	-	48.248	49.164	50.445	51.542	52.859	Continuing	Continuing
<i>Defense Joint Warfighter Support</i>											
• 0604102C: <i>Guam</i>	110.611	393.201	397.578	-	397.578	291.301	272.227	238.348	232.115	Continuing	Continuing
<i>Defense Development</i>											
• 0604878C: <i>Aegis BMD Test</i>	111.206	175.619	193.484	-	193.484	135.473	183.024	203.676	135.080	Continuing	Continuing
• 0604880C: <i>Land</i>	42.156	27.678	22.163	-	22.163	20.479	21.193	21.620	21.736	Continuing	Continuing
<i>Based SM-3 (LBSM3)</i>											

Remarks

D. Acquisition Strategy

The Sea-Based Weapon Systems element acquisition approach supports evolutionary development, continuously building upon demonstrated capabilities to advance overall BMDS capability. After considering all the technical and management aspects of the program and to meet the requirements presented by an evolving ballistic missile threat, the Sea-Based Weapon Systems program awarded sole source contracts to Raytheon and Lockheed Martin to continue development of the SM-3 and the Aegis BMD Weapon System, respectively.

The M&S acquisition strategy utilizes full and open competition to develop, acquire and deliver the integrated architectures/frameworks, as well as develop and deliver models of Aegis 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 Aegis BMD prime contractors, with additional technical standards and engineering oversight provided by Federally Funded Research and Development Centers (FFRDCs) and University Affiliated Research Centers.

The acquisition strategy for Guam Defense consists of contract actions to industry, and agreements with Department of Defense organizations and FFRDCs to develop, demonstrate, and field a Missile Defense System on Guam.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MD09 / Aegis BMD					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Systems Engineering & Integration - Architecture TEAMS	C/CPFF	Various : Various	5.242	3.567	Nov 2021	3.307	Nov 2022	4.396	Nov 2023	-		4.396	Continuing	Continuing	Continuing
Systems Engineering & Integration - CSS	C/CPFF	Various : Various	26.864	1.646	Nov 2021	2.359	Nov 2022	2.313	Nov 2023	-		2.313	Continuing	Continuing	Continuing
Systems Engineering & Integration - FFRDC	FFRDC	Various : Various	0.000	1.372	Apr 2022	0.000		0.000		-		0.000	0.000	1.372	0.000
Systems Engineering & Integration - GTRI	C/CPFF	GEORGIA TECH APPLIED RESEARCH CORPORATION : Various	0.000	1.000	Nov 2021	0.000		0.000		-		0.000	0.000	1.000	0.000
Systems Engineering & Integration - Industry	C/CPAF	Boeing : VA	100.340	7.017	Nov 2021	13.272	Nov 2022	12.745	Nov 2023	-		12.745	Continuing	Continuing	Continuing
Systems Engineering & Integration - OGA	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	0.000	4.186	Apr 2022	0.000		0.000		-		0.000	0.000	4.186	0.000
Systems Engineering & Integration - Threat	C/CPFF	SEG (Systems Engineering Group, Inc.) : AL	0.000	2.000	May 2022	0.000		0.000		-		0.000	0.000	2.000	0.000
Systems Engineering & Integration - Various Systems Engineering	Allot	MDA Various : VA, AL	70.586	0.000		0.880	Nov 2022	0.976	Nov 2023	-		0.976	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - ABS NIWC Pacific	MIPR	NIWC PAC : San Diego, CA	22.230	8.346	Nov 2021	8.984	Nov 2022	9.200	Nov 2023	-		9.200	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - Advanced Concepts	MIPR	Various : Various	2.402	2.227	Aug 2022	0.000		0.000		-		0.000	0.000	4.629	0.000

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD						Project (Number/Name) MD09 / Aegis BMD			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - Discrimination	MIPR	Various - MDA : AL,VA	17.640	0.000		0.000		1.849	Nov 2023	-		1.849	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - M&S improvements	MIPR	Various - MDA : AL, VA	20.188	9.751	Nov 2021	2.290	Nov 2022	1.238	Nov 2023	-		1.238	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - ABY Telescope	SS/TBD	Various : TBD	0.000	6.000	Jun 2022	6.000	Jun 2023	0.000		-		0.000	0.000	12.000	0.000
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - C4I MITRE	MIPR	CECOM - MITRE : Dahlgren, VA	4.623	0.474	Nov 2021	0.000		0.000		-		0.000	0.000	5.097	0.000
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD APL	SS/CPAF	JHU/APL : Columbia, MD	54.043	8.580	Nov 2021	9.764	Nov 2022	12.143	Nov 2023	-		12.143	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD IDT	MIPR	INNOVATIVE DEFENSE TECHNOLOGIES, LLC : VA	0.000	0.804	Nov 2021	0.052	Nov 2022	3.274	Nov 2023	-		3.274	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD LM	C/CPFF	Lockheed Martin : Moorestown, NJ	46.470	4.317	Nov 2021	12.851	Nov 2022	7.495	Nov 2023	-		7.495	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD MIT	MIPR	Hanscom AFB - MIT/LL : Lexington, MA	29.011	2.969	Nov 2021	4.830	Nov 2022	4.965	Nov 2023	-		4.965	Continuing	Continuing	Continuing

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MD09 / Aegis BMD					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD NSWCDD	MIPR	NSWC DD : Dahlgren, VA	55.721	7.384	Nov 2021	10.574	Nov 2022	14.292	Nov 2023	-		14.292	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD Raytheon	SS/IDIQ	RAYTHEON : AZ	1.683	2.477	Nov 2021	0.000		5.079	Nov 2023	-		5.079	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - Various - MDA	MIPR	Various - MDA : AL,VA,CA	34.569	0.000		0.000		0.000		-		0.000	0.000	34.569	0.000
Aegis BMD 4.x Development - MD09 - Dahlgren	MIPR	NSWC/DD : DAHLGREN, VA	170.294	9.462	Nov 2021	4.925	Nov 2022	5.281	Nov 2023	-		5.281	Continuing	Continuing	Continuing
Aegis BMD 4.x Development - MD09 - Lockheed Martin	SS/CPIF	LOCKHEED MARTIN : MOORESTOWN, NJ	961.250	40.035	Nov 2021	18.419	Nov 2022	19.750	Nov 2023	-		19.750	Continuing	Continuing	Continuing
Aegis BMD 4.x Development - MD09- Aegis Techrep	MIPR	AEGIS Techrep : Moorestown, NJ	5.882	1.748	Nov 2021	1.543	Nov 2022	1.655	Nov 2023	-		1.655	Continuing	Continuing	Continuing
Aegis BMD 4.x Development - MD09- BMD 4.0 Dev-	Various	Various : Various	48.568	3.388	Nov 2021	1.312	Nov 2022	1.407	Nov 2023	-		1.407	Continuing	Continuing	Continuing
Aegis BMD 4.x Development - MD09-D	Allot	MDA : VA	33.053	0.000		0.000		0.000		-		0.000	0.000	33.053	0.000
Aegis BMD 5.x Development - MD09 - 5.x	SS/CPAF	LOCKHEED MARTIN : MOORESTOWN, NJ	772.826	26.819	Nov 2021	72.424	Nov 2022	91.303	Nov 2023	-		91.303	Continuing	Continuing	Continuing
Aegis BMD 5.x Development - MD09 - 5.x APL	SS/CPFF	JHU/APL/MD : COLUMBIA, MD	56.454	2.148	Nov 2021	0.685	Nov 2022	6.340	Nov 2023	-		6.340	Continuing	Continuing	Continuing

UNCLASSIFIED

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Aegis BMD 5.x Development - MD09 - 5.x DD	MIPR	NSWC/DD : DAHLGREN, VA	83.101	10.365	Nov 2021	3.768	Nov 2022	16.485	Nov 2023	-		16.485	Continuing	Continuing	Continuing
Aegis BMD 5.x Development - MD09 - 5.x PHD	MIPR	NSWC/PHD : PT HUENEME, CA	13.688	1.093	Nov 2021	0.514	Nov 2022	5.072	Nov 2023	-		5.072	Continuing	Continuing	Continuing
Aegis BMD 5.x Development - MD09 - Aegis Tech Rep	MIPR	Aegis Tech Rep : Moorestown, NJ	8.932	2.238	Nov 2021	0.856	Nov 2022	7.608	Nov 2023	-		7.608	Continuing	Continuing	Continuing
Aegis BMD 5.x Development - MD09 - Various	MIPR	Various : MA, MD, VA, NJ	209.059	0.000		0.000		0.000		-		0.000	0.000	209.059	0.000
Aegis BMD 6.x Development - D - Strategic Investment	MIPR	Various : Various	0.000	6.055	Nov 2021	0.000		0.000		-		0.000	0.000	6.055	0.000
Aegis BMD 6.x Development - JHU/APL	SS/CPFF	JHU/APL : MD	26.072	5.216	Nov 2021	4.974	Nov 2022	5.699	Nov 2023	-		5.699	Continuing	Continuing	Continuing
Aegis BMD 6.x Development - Lockheed Martin	C/CPFF	Lockheed Martin : NJ	180.304	55.496	Nov 2021	41.491	Nov 2022	47.537	Nov 2023	-		47.537	Continuing	Continuing	Continuing
Aegis BMD 6.x Development - MD09 - DD	MIPR	NSWC/DD : Dahlgren, VA	28.991	11.225	Nov 2021	6.840	Nov 2022	7.837	Nov 2023	-		7.837	Continuing	Continuing	Continuing
Aegis BMD 6.x Development - Raytheon Integrated Defense Systems	MIPR	DOD - USN - NAVAL SEA SYSTEMS COMMAND (NAVSEA) : VA	0.000	3.213	Nov 2021	3.251	Nov 2022	3.725	Nov 2023	-		3.725	Continuing	Continuing	Continuing
Aegis BMD 6.x Development - Various	MIPR	Various : MA, MD, VA, NJ, CA	45.573	4.346	Nov 2021	3.398	Nov 2022	3.893	Nov 2023	-		3.893	Continuing	Continuing	Continuing
Aegis Layered Homeland Defense Development - Aegis Engineering - APL	SS/CPFF	JHU/APL : MD	2.387	0.000		0.000		0.000		-		0.000	0.000	2.387	0.000
Aegis Layered Homeland Defense Development - Aegis Engineering - DD	MIPR	NSWC DD : Dahlgren VA	2.379	0.000		0.000		0.000		-		0.000	0.000	2.379	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
0400 / 4						PE 0603892C / AEGIS BMD				MD09 / Aegis BMD					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Aegis Layered Homeland Defense Development - Aegis Engineering - LM	SS/CPFF	Lockheed Martin : Moorestown NJ	5.922	0.000		0.000		0.000		-		0.000	0.000	5.922	0.000
Aegis Layered Homeland Defense Development - Aegis Engineering - MIT/LL	FFRDC	MIT/LL : Lexington MA	3.241	0.000		0.000		0.000		-		0.000	0.000	3.241	0.000
Aegis Layered Homeland Defense Development - Aegis Weapon System - MD09 - LM	SS/CPFF	Lockheed Martin : Moorestown NJ	2.128	0.000		0.000		0.000		-		0.000	0.000	2.128	0.000
Modeling & Simulation Objective Simulation Framework - M&S OSF Engineering	Various	Various : AL, VA	23.691	2.004	Nov 2021	3.888	Nov 2022	3.968	Nov 2023	-		3.968	Continuing	Continuing	Continuing
Modeling & Simulation Objective Simulation Framework - M&S OSF Engineering - CSS Support	C/CPFF	Various : Various	37.968	4.272	Nov 2021	5.319	Nov 2022	5.013	Nov 2023	-		5.013	Continuing	Continuing	Continuing
Modeling & Simulation Objective Simulation Framework - M&S OSF Engineering - Engineering Support	C/CPAF	Northrop Grumman : CO	41.660	7.561	Nov 2021	0.546	Nov 2022	1.490	Nov 2023	-		1.490	0.000	51.257	0.000
Modeling & Simulation Objective Simulation Framework - M&S OSF Engineering - Integration	MIPR	CCDC : AL	33.487	4.434	Nov 2021	3.385	Nov 2022	2.911	Nov 2023	-		2.911	Continuing	Continuing	Continuing
Modeling & Simulation Objective Simulation Framework - M&S OSF Engineering - Prime	C/CPAF	BOEING : AL, CO	173.883	2.119	Apr 2022	0.000		0.000		-		0.000	0.000	176.002	0.000
Modeling & Simulation Objective Simulation Framework - M&S OSF Engineering - Prime 2	C/CPFF	Lockheed Martin : AL	16.960	9.172	Nov 2021	21.188	Nov 2022	22.903	Nov 2023	-		22.903	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD						Project (Number/Name) MD09 / Aegis BMD			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Aegis Layered Homeland Defense Development - Standard Missile - 3 (SM-3) Block IIA Development - MD09 - Raytheon	SS/CPIF	Raytheon : AZ	5.454	0.000		0.000		0.000		-		0.000	0.000	5.454	0.000
Aegis Layered Homeland Defense Development - Strategic Investment	MIPR	Various : Various	0.106	0.000		0.000		0.000		-		0.000	0.000	0.106	0.000
M&S BMDS Simulations &Tools - Sims & Tools	C/CPFF	Teledyne Brown Engineering : AL, CO	3.558	0.000		0.000		0.000		-		0.000	0.000	3.558	0.000
M&S BMDS Simulations &Tools - Sims & Tools - Industry	C/CPAF	Northrop Grumman : CO	40.308	0.000		0.000		0.000		-		0.000	0.000	40.308	0.000
M&S BMDS Simulations &Tools - Sims & Tools - Industry (2)	C/CPAF	NORTHROP GRUMMAN : CO	7.557	3.187	Nov 2021	4.383	Nov 2022	4.355	Nov 2023	-		4.355	Continuing	Continuing	Continuing
M&S BMDS Simulations &Tools - Sims & Tools - Industry (3)	C/CPAF	BOEING : AL	0.000	1.045	Nov 2021	0.000		0.000		-		0.000	0.000	1.045	0.000
M&S BMDS Simulations &Tools - Sims & Tools - Various	Various	Various : AL, CO	1.905	0.173	Nov 2021	0.000		0.000		-		0.000	0.000	2.078	0.000
BMDS Verification, Validation & Assessment (VV&A) - Verification & Assessment	Various	MDA Various : AL, VA	7.395	0.000		0.000		0.000		-		0.000	0.000	7.395	0.000
BMDS Verification, Validation & Assessment (VV&A) - Verification & Assessment - CSS Support	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : AL	19.226	2.338	Nov 2021	2.329	Nov 2022	1.296	Nov 2023	-		1.296	Continuing	Continuing	Continuing
BMDS Verification, Validation & Assessment (VV&A) - Verification & Assessment - Industry	C/CPAF	Boeing : AL	42.318	7.002	Nov 2021	7.044	Nov 2022	6.677	Nov 2023	-		6.677	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MD09 / Aegis BMD					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 Verification, Validation & Assessment (VV&A) - Verification & Assessment - Labs	MIPR	MITRE : VA	13.108	1.577	Nov 2021	1.189	Nov 2022	1.321	Nov 2023	-		1.321	Continuing	Continuing	Continuing
BMDS Verification, Validation & Assessment (VV&A) - Verification & Assessment - OGA	MIPR	CCDC : AL	48.023	6.804	Nov 2021	6.798	Nov 2022	7.488	Nov 2023	-		7.488	Continuing	Continuing	Continuing
BMDS Verification, Validation & Assessment (VV&A) - Verification & Assessment - UARC2	FFRDC	JHU/APL : AL, VA	7.905	1.250	Nov 2021	1.921	Nov 2022	1.709	Nov 2023	-		1.709	Continuing	Continuing	Continuing
RF Link Improvements - Missile	SS/CPIF	RAYTHEON : AZ	3.672	22.288	Nov 2021	0.000		1.881	Dec 2023	-		1.881	Continuing	Continuing	Continuing
RF Link Improvements - Missile (Various)	Various	Various : Various	0.153	0.979	Nov 2021	0.000		0.600	Dec 2023	-		0.600	Continuing	Continuing	Continuing
RF Link Improvements - Weapon System	SS/CPIF	Lockheed Martin : Moorestown, NJ	0.000	3.202	Nov 2021	2.257	Nov 2022	0.911	Nov 2023	-		0.911	Continuing	Continuing	Continuing
Guam Defense Aegis BMD Development - JHU/APL	C/CPIF	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	0.000	0.000		5.000	Nov 2022	3.533	Nov 2023	-		3.533	Continuing	Continuing	Continuing
Guam Defense Aegis BMD Development - Lockheed Martin	C/CPIF	LOCKHEED MARTIN CORPORATION : NJ	0.000	0.000		36.000	Nov 2022	68.011	Nov 2023	-		68.011	Continuing	Continuing	Continuing
Guam Defense Aegis BMD Development - NAVSEA	MIPR	Program Executive Office (PEO) Integrated Warfare Systems (IWS)/1.0 : VA	0.000	0.000		0.000		1.235	Nov 2023	-		1.235	Continuing	Continuing	Continuing
Guam Defense Aegis BMD Development - NSWC Dahlgren	MIPR	TBD : VA	0.000	0.000		4.000	Nov 2022	6.773	Nov 2023	-		6.773	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
0400 / 4						PE 0603892C / AEGIS BMD				MD09 / Aegis BMD					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Guam Defense Aegis BMD Development - NSWC Port Hueneme	MIPR	TBD : CA	0.000	0.000		0.000		0.848	Nov 2023	-		0.848	Continuing	Continuing	Continuing
Subtotal			3,680.053	336.371		344.810		446.480		-		446.480	Continuing	Continuing	N/A
Remarks															
N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			3,680.053	336.371		344.810		446.480		-		446.480	Continuing	Continuing	N/A
Remarks															
Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, MIPRs, and civilian salaries on the R-3. Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency

Date: March 2023

Appropriation/Budget Activity

0400 / 4

R-1 Program Element (Number/Name)

PE 0603892C / AEGIS BMD

Project (Number/Name)

MD09 / Aegis BMD

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 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
Defense of Guam CDR												☆																
Defense of Guam PDR									☆																			
BMD 4.1.3 OCB															△													
BMD 4.1.3 Cert														△														
BMD 4.1.3 EA													☆															
BMD 4.1.3 IPR #2													☆															
BMD 4.1.3 IPR #1													☆															
BMD 6.0.1 EA #2													☆															
BMD 6.0.1 EA #1									☆																			
BMD 6.0.1 IPR #10/CDR													☆															
BMD 6.0.1 IPR #9/PDR											☆																	
BL 5.4.1 (BMD 4.2) IPR #4	▲																											
BMD 6.0 IPR #7		★																										
BMD 5.1.5 IPR #1/PDR		★																										
BMD 5.1.4.0 EA			▲																									
BMD 5.1.4.0 CSCP				★																								
BMD 5.1.4.0 OCB					☆																							
BL 5.4.1 (BMD 4.2) EA					△																							
BL 5.4.1 (BMD 4.2) IPR #5					△																							
BMD 5.1.4.1 CSCP						☆																						
BMD 5.1.4.1 EA						△																						
BMD 5.1.4.1 OCB							☆																					
BMD 6.0 IPR #8						☆																						
BMD 6.0.1 SRR						☆																						

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023															
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD										Project (Number/Name) MD09 / Aegis BMD									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
BMD 5.1.5 EA														◇															
BMD 5.1.5 IPR #2/CDR														☆															
BMD 6.0 EA														△															
Defense of Guam Weapon System SRR														☆															
AN/SPY-1 DRU (formerly dLNA) Demo Software Design Review															☆														
AN/SPY-1 DRU (formerly dLNA) Demo Hardware Design Review															☆														
BL 5.4.1 (BMD 4.2) CERT															△														
BMD 5.1.5 CSCP																		☆											
BMD 5.1.5 OCB																			☆										
AN/SPY-1 DRU (formerly dLNA) Demo System Design Review																☆													
BMD 6.0 CSCP																☆													
BMD 6.0 OCB																	☆												
AN/SPY-1 DRU (formerly dLNA) demo EA																		△											
BMD 6.0.1 CSCP																	☆												
AN/SPY-1 DRU (formerly dLNA) Demo																			△										
BMD 6.0.1 OCB																				☆									

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / <i>AEGIS BMD</i>	Project (Number/Name) MD09 / <i>Aegis BMD</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Defense of Guam CDR	4	2024	4	2024
Defense of Guam PDR	1	2024	1	2024
BMD 4.1.3 OCB	4	2025	4	2025
BMD 4.1.3 Cert	3	2025	3	2025
BMD 4.1.3 EA	1	2025	1	2025
BMD 4.1.3 IPR #2	1	2025	1	2025
BMD 4.1.3 IPR #1	4	2024	4	2024
BMD 6.0.1 EA #2	4	2024	4	2024
BMD 6.0.1 EA #1	1	2024	1	2024
BMD 6.0.1 IPR #10/CDR	1	2025	1	2025
BMD 6.0.1 IPR #9/PDR	2	2024	2	2024
BL 5.4.1 (BMD 4.2) IPR #4	1	2022	1	2022
BMD 6.0 IPR #7	2	2022	2	2022
BMD 5.1.5 IPR #1/PDR	2	2022	2	2022
BMD 5.1.4.0 EA	3	2022	3	2022
BMD 5.1.4.0 CSCP	4	2022	4	2022
BMD 5.1.4.0 OCB	1	2023	1	2023
BL 5.4.1 (BMD 4.2) EA	1	2023	1	2023
BL 5.4.1 (BMD 4.2) IPR #5	1	2023	1	2023
BMD 5.1.4.1 CSCP	2	2023	2	2023
BMD 5.1.4.1 EA	2	2023	2	2023
BMD 5.1.4.1 OCB	3	2023	3	2023
BMD 6.0 IPR #8	2	2023	2	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Events	Start		End	
	Quarter	Year	Quarter	Year
BMD 6.0.1 SRR	2	2023	2	2023
BMD 5.1.5 EA	3	2023	3	2023
BMD 5.1.5 IPR #2/CDR	3	2023	3	2023
BMD 6.0 EA	3	2023	3	2023
Defense of Guam Weapon System SRR	3	2023	3	2023
AN/SPY-1 DRU (formerly dLNA) Demo Software Design Review	2	2024	2	2024
AN/SPY-1 DRU (formerly dLNA) Demo Hardware Design Review	1	2024	1	2024
BL 5.4.1 (BMD 4.2) CERT	4	2023	4	2023
BMD 5.1.5 CSCP	3	2025	3	2025
BMD 5.1.5 OCB	4	2025	4	2025
AN/SPY-1 DRU (formerly dLNA) Demo System Design Review	4	2024	4	2024
BMD 6.0 CSCP	4	2024	4	2024
BMD 6.0 OCB	2	2025	2	2025
AN/SPY-1 DRU (formerly dLNA) demo EA	4	2025	4	2025
BMD 6.0.1 CSCP	3	2025	3	2025
AN/SPY-1 DRU (formerly dLNA) Demo	2	2026	2	2026
BMD 6.0.1 OCB	1	2027	1	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MM09 / Aegis BMD SM-3 Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MM09: Aegis BMD SM-3 Development	849.412	119.798	85.633	42.323	-	42.323	78.754	151.302	129.335	117.755	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2023 to FY 2024 reflects completion of software Build 8.2 including Enhanced Aegis Data Link (EADL).

A. Mission Description and Budget Item Justification

Provides development of SM-3 Missiles, Upgrade Modifications, and Integration into the Aegis Weapon System.

The SM-3 Block IB improves Aegis Ballistic Missile Defense's (BMD's) ability to expand the BMD battlespace, engage longer range, more sophisticated ballistic missiles that may deploy countermeasures and launch in larger raid sizes. The Standard Missile (SM)-3 Block IB Kinetic Warhead's (KW) two color infra-red (IR) seeker and advanced signal processor provides a real-time discrimination and characterization capability while improving sensitivity for longer range targets and performance against more sophisticated threats. Additionally, the new Throttleable Divert and Attitude Control System KW divert engine has been upgraded over the SM-3 Block IA to provide a more flexible divert in order to maneuver the KW to intercept.

The SM-3 Block IIA consists of an upgrade to a 21-inch diameter SM-3 missile and expands beyond the SM-3 Block IB battlespace to counter Intermediate Range Ballistic Missile. SM-3 Block IIA provides an increased kinematic envelope through improved IR discrimination and divert capability that provide performance against the European Phased Approach (EPAA) phase III expanded threat set. When combined with Aegis BMD 5.1 weapon system modifications, the SM-3 Block IIA will provide Engage on Remote (EoR) capability, which allows the use of remote off board sensor information to launch and guide the SM-3 Block IIA to final intercept. Aegis BMD 5.1 EoR capability with SM-3 Block IIA also frees up radar resources and increases the number and type of threats to be engaged simultaneously over previous baselines.

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

	FY 2022	FY 2023	FY 2024
Title: Standard Missile-3 (SM-3) Block IB Development	49.464	9.359	15.823
Articles:	-	-	-
Description: This effort modernizes the SM-3 Block IB missile, which improves on the SM-3 Block IA performance and enables engagement of more sophisticated ballistic missiles and larger raid sizes SM-3 Block IB Threat Upgrade/Tech Refresh (previously IB Modernization) will provide the following: - Refreshed SM-3 KW Common Avionics Package will provide improved producibility and utilization of common components between the SM-3 Block IIA. SM-3 Block IB common components will be extendable to support different form/fit in circuit card assemblies across SM-3 Block IB and SM-3 Block IIA and will mitigate SM-3 Block IB hardware availability issues. Includes Back-fit of IIA Guidance Electronics Unit (GEU) Engineering Change Proposal (ECP) into IB			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD		Project (Number/Name) MM09 / Aegis BMD SM-3 Development	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
<p>- Refreshed SM-3 Block IB Guidance Section with the integration of Digital Data Link replacement of Plate 3A will resolve Plate 3A hardware availability issues</p> <p>Recurring Accomplishments:</p> <p>- Assess performance with weapons systems upgrades/modifications and against emerging threats</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <p>- SEE ABOVE</p> <p>FY 2024 Plans:</p> <p>In addition to the above, the program plans the following accomplishments in FY 2024:</p> <ul style="list-style-type: none"> - Expand threat space to combat evolving ballistic missile threats and facilitate availability of Blk IIA All Up Rounds (AURs) for more complex missions. - Develop Two phase software build with associated Formal Qualification Tests (FQTs). Address self-destruct, inertial midcourse guidance, fin rotation angle Built-in Test, normalized distance factor, discrimination updates, and exclusion angle improvements. - Leverage studies conducted for SM-3 exclusion angle and SM-3 Block IIA algorithms - Conduct Hardware/Software refresh of test/integration Hardware-in-the-Loop (HIL)/Computer-in-the-Loop (CIL) workstations <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Increase from FY 2023 to FY 2024 provides IB software upgrades based on maturity of technical scope and addition of required HIL/CIL refresh.</p>					
<p>Title: Standard Missile-3 (SM-3) Block IIA Development</p> <p align="right">Articles:</p> <p>Description: The SM-3 Block IIA is required to meet EPAA Phase III. It will increase the area that can be defended by Aegis BMD, increase the probability of kill against a larger threat set, and leverage enhanced capability provided by Ballistic Missile Defense System (BMDS) sensor upgrades</p> <p>Recurring Accomplishments:</p> <ul style="list-style-type: none"> - Conduct SM-3 Block IIA software update to support engagements against additional complex threats identified during Aegis BMD 5.1 design process conducted after missile Critical Design Review (CDR) - Conduct End to End Distributed Development System integration testing; and flight test support - Continue implementation of SM-3 Block IIA cost reduction initiatives to support meeting cost goals to reduce the current estimated Average Unit Production Price 			70.334 -	76.274 -	26.500 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MM09 / Aegis BMD SM-3 Development				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2022	FY 2023	FY 2024
<div>- Continue transition of KW hardware commonality effort (from design to material purchases) to system integration testing in order to demonstrate Technology Readiness Level 7</div> <div>- Continue Engineering Manufacture Readiness Level 3 compliance to support life cycle progression</div> <div>Specific and unique accomplishments to each FY are as follows:</div> <div>FY 2023 Plans:</div> <div>- SEE ABOVE.</div> <div>FY 2024 Plans:</div> <div>- Completion of software Build 8.2 including Enhanced Aegis Data Link (EADL) and continuation of Baseline 5 and 6 integration efforts. Includes transition to Production to support a Full Rate Production Decision and transition of Guidance Electronics Unit (GEU) Engineering Change Proposal (ECP) to Production.</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>Decrease from FY 2023 to FY 2024 reflects completion of software Build 8.2 including EADL.</div>												
Accomplishments/Planned Programs Subtotals										119.798	85.633	42.323
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• 0208866C MD09: SM-3 Block IB Procurement	334.621	402.235	374.756	-	374.756	372.639	528.486	537.124	550.011	Continuing	Continuing	
• 0208866C MD09: Aegis BMD O&M	77.170	69.071	72.224	-	72.224	85.696	99.209	96.412	93.554	Continuing	Continuing	
• 0208866C MD09: SM-3 Block IB Advanced Procurement	17.493	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	17.493	
• 0208866C MD14: SM-3 Block IIA Procurement	488.022	669.975	432.824	-	432.824	507.705	464.094	457.932	467.091	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
The Sea-Based Weapon Systems element acquisition approach supports evolutionary development, continuously building upon demonstrated capabilities to advance overall BMDS capability. After considering all the technical and management aspects of the program and to meet the requirements presented by an evolving ballistic missile threat, the Sea-Based Weapon Systems program awarded sole source contracts to Raytheon and Lockheed Martin to continue development of the SM-3 and the Aegis BMD Weapon System, respectively.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MM09 / Aegis BMD SM-3 Development					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Standard Missile-3 (SM-3) Block IB Development - JHU/APL	SS/CPFF	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	4.262	2.581	Nov 2021	0.430	Nov 2022	1.650	Nov 2023	-		1.650	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MM09 - 20117142332259	MIPR	NSWC/PHD : Port Hueneme, CA	0.199	0.000		0.000		0.000		-		0.000	0.000	0.199	0.000
Standard Missile-3 (SM-3) Block IB Development - MM09 - Various	MIPR	NSWC Corona : Corona, CA	1.053	0.000		0.000		0.000		-		0.000	0.000	1.053	0.000
Standard Missile-3 (SM-3) Block IB Development - MM09 Carderock	MIPR	NSWC Carderock : Bethesda, MD	0.882	0.000		0.000		0.000		-		0.000	0.000	0.882	0.000
Standard Missile-3 (SM-3) Block IB Development - Raytheon	SS/CPIF	RAYTHEON : AZ	159.668	46.201	Dec 2021	8.871	Jan 2023	12.805	Dec 2023	-		12.805	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - Various	MIPR	Various : Various	3.029	0.682	Nov 2021	0.058	Nov 2022	1.368	Nov 2023	-		1.368	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - Integration (NSWCDD)	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) DAHLGREN DIVISION (NSWCDD) : VA	23.526	5.871	Nov 2021	7.206	Dec 2022	2.110	Dec 2023	-		2.110	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - Integration (Raytheon)	SS/CPIF	RAYTHEON : AZ	534.981	52.080	Oct 2021	66.024	Nov 2022	22.706	Dec 2023	-		22.706	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - Integration (Various)	MIPR	Various : VARIOUS	83.791	5.495	Nov 2021	3.044	Dec 2022	1.684	Dec 2023	-		1.684	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - MM09 - SM-3 BLK IIA	MIPR	Brookhaven Lab - DOE : Uptown NY	3.830	0.000		0.000		0.000		-		0.000	0.000	3.830	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MM09 / Aegis BMD SM-3 Development					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Standard Missile-3 (SM-3) Block IIA Development - MM09 - SM-3 BLK IIA Draper	SS/CPIF	Draper Labatory : Cambridge MA	5.067	0.000		0.000		0.000		-		0.000	0.000	5.067	0.000
Standard Missile-3 (SM-3) Block IIA Development - New Jersey	C/CPFF	Lockheed Martin : Moorestown NJ	29.124	5.688	Dec 2021	0.000		0.000		-		0.000	0.000	34.812	0.000
Standard Missile-3 (SM-3) Block IIA Development - Various	MIPR	Various : Various	0.000	1.200	Aug 2022	0.000		0.000		-		0.000	0.000	1.200	0.000
Subtotal			849.412	119.798		85.633		42.323		-		42.323	Continuing	Continuing	N/A
Remarks															
N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			849.412	119.798		85.633		42.323		-		42.323	Continuing	Continuing	N/A
Remarks															
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD										Project (Number/Name) MM09 / Aegis BMD SM-3 Development										
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 2022		FY 2023			FY 2024			FY 2025			FY 2026			FY 2027			FY 2028			
Build 8.2 Formal Qualification Testing (FQT)												▲																		
Build 8.2 and BMD 5.1.4 OCB													▲																	
GEU-ECP (1st AUR Delivery with ECP)													▲																	
IB GU Qualification														△																
Build 8.3 FQT															△															
IBTU Tech Refresh CDR															△															
GEU-ECP Transition to Production															△															
IB ECP Approval															△															
IBTU Tech Refresh Qualification															△															
IB SWUP Phase 1.0																△														
IB SW FQT																△														
Build 8.3 and BMD 5.1.5 OCB																	△													
SRR for SWUP Phase 1.0																		△												
CDR for SWUP Phase 1.0																			△											
FQT for SWUP Phase 1.0																					△									
SRR for SWUP Phase 2.0																						△								
CDR for SWUP Phase 2.0																									△					
FQT for SWUP Phase 2.0																										△				

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / <i>AEGIS BMD</i>	Project (Number/Name) MM09 / <i>Aegis BMD SM-3 Development</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Build 8.2 Formal Qualification Testing (FQT)	3	2022	3	2022
Build 8.2 and BMD 5.1.4 OCB	1	2023	1	2023
GEU-ECP (1st AUR Delivery with ECP)	1	2023	1	2023
IB GU Qualification	2	2023	2	2023
Build 8.3 FQT	3	2023	3	2023
IBTU Tech Refresh CDR	3	2023	3	2023
GEU-ECP Transition to Production	3	2023	3	2023
IB ECP Approval	3	2023	3	2023
IBTU Tech Refresh Qualification	3	2023	3	2023
IB SWUP Phase 1.0	1	2024	1	2024
IB SW FQT	4	2023	4	2023
Build 8.3 and BMD 5.1.5 OCB	2	2024	2	2024
SRR for SWUP Phase 1.0	4	2024	4	2024
CDR for SWUP Phase 1.0	4	2025	4	2025
FQT for SWUP Phase 1.0	2	2026	2	2026
SRR for SWUP Phase 2.0	3	2026	3	2026
CDR for SWUP Phase 2.0	3	2027	3	2027
FQT for SWUP Phase 2.0	1	2028	1	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MC09 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC09: Cyber Operations	45.948	3.661	4.431	5.972	-	5.972	6.236	6.263	6.430	6.602	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from FY 2023 to FY 2024 provides monitoring requirements in support of the Host Based Security System, Assured Compliance Assessment Solution (ACAS) Vulnerability scanning, Security Information Event Management (SIEM) (i.e. ArcSight) requirements at remote sites, and on-site maintenance support for Cybersecurity activities at the Missile Defense Agency (MDA) sponsored Land Based Test Sites.

A. Mission Description and Budget Item Justification

Sustain the Department of Defense (DoD) Risk Management Framework (RMF) Certification and Accreditation (C&A) process and Controls Validation Testing (CVT) activities, analysis of validation results, risk assessments and reviews of proposed Program Manager/Information Systems Security Manager.

This project supports the monitoring and tracking of Cybersecurity mitigation detailed in Information Technology Security Plan of Action and Milestones (POA&Ms). Activities include preparation of Certification and Accreditation (C&A) documentation and accreditation recommendations to the MDA Authorizing Official. Independent Verification and Validation team actions ensure the availability, integrity, authentication, confidentiality and non-repudiation of the Aegis mission and non-mission systems, which includes test and remote site administrative systems. Activities in the Project are necessary to comply with the Federal Information Security Management Act.

The Standard Missile (SM)-3 Block IB and IIA missiles and corresponding Aegis Ballistic Missile Defense (BMD) weapon systems communication requires hardware and software development and integration testing to enable new cyber security capabilities. Activities include Encoder/Decoder, Plate 3 Circuit Card Assemblies (CCA) and Mission Computer CCA updates. After missile and baseline specific efforts are complete, significant integration testing is required.

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

	FY 2022	FY 2023	FY 2024
Title: Network / System Certification and Accreditation (C&A)	3.661	4.431	5.972
Articles:	-	-	-
Description: Network/System C&A includes recurring efforts such as cybersecurity engineering and architecture requirements planning for Aegis BMD systems, plan and test the RMF controls for the Ballistic Missile Defense System (BMDS) in regards to Aegis BMD systems to comply with the new directive, RMF for DoD Information Technology (DoDi 8510.01) to replace the DoD Information Assurance Certification and Accreditation process and conduct CVT. Recurring Accomplishments: - Continue coordination and development of new and existing accreditation packages that comply with new directive, RMF for DoD Information Technology (DoDi 8510.01) process - CVT and cooperative risk assessments to mitigate cybersecurity deficiencies			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MC09 / Cyber Operations	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Develop and deploy Hardware and Software implementation strategies for Continuous Monitoring activities at remote sites and Aegis BMD assets - Monthly reviews of systems through the eMass System - Daily management of eMass System POAMs <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Provide monitoring for the Host Based Security System - Conduct ACAS Vulnerability scanning - Implement SIEM (i.e. ArcSight) requirements at remote sites - Provide on-site maintenance support for Cybersecurity activities at MDA sponsored Land Based Test Sites <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Increase from FY 2023 to FY 2024 provides for additional monitoring requirements in support of the Host Based Security System, ACAS Vulnerability scanning, SIEM (i.e. ArcSight) requirements at remote sites, and on-site maintenance support for Cybersecurity activities at MDA sponsored Land Based Test Sites.</p>			
Accomplishments/Planned Programs Subtotals	3.661	4.431	5.972

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	250.123	230.502	239.159	-	239.159	212.191	233.877	242.623	251.226	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	50.261	50.269	48.248	-	48.248	49.164	50.445	51.542	52.859	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MC09 / Cyber Operations
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C. Other Program Funding Summary (\$ in Millions)

			<u>FY 2024</u>	<u>FY 2024</u>	<u>FY 2024</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Complete</u>	<u>Total Cost</u>
• 0603904C: <i>Missile</i>	44.188	49.367	50.549	-	50.549	56.624	58.020	59.193	60.615	Continuing	Continuing
<i>Defense Integration and</i>											
<i>Operations Center (MDIOC)</i>											
• 0604878C: <i>Aegis BMD Test</i>	111.206	175.619	193.484	-	193.484	135.473	183.024	203.676	135.080	Continuing	Continuing
• 0604880C: <i>Land</i>	42.156	27.678	22.163	-	22.163	20.479	21.193	21.620	21.736	Continuing	Continuing
<i>Based SM-3 (LBSM3)</i>											
• 0901598C:	24.102	25.259	28.363	-	28.363	29.039	29.601	30.174	30.760	Continuing	Continuing
<i>Management HQ - MDA</i>											

Remarks

D. Acquisition Strategy

The Sea-Based Weapon Systems element acquisition approach supports evolutionary development, continuously building upon demonstrated capabilities to advance overall BMDS capability. After considering all the technical and management aspects of the program and to meet the requirements presented by an evolving ballistic missile threat, the Sea-Based Weapon Systems program awarded sole source contracts to Raytheon and Lockheed Martin to continue development of the SM-3 and the Aegis BMD Weapon System, respectively.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency													Date: March 2023		
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD					Project (Number/Name) MC09 / Cyber Operations				
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - DISA	MIPR	DISA : Falls Church, VA	0.100	0.000		0.000		0.000		-		0.000	0.000	0.100	0.000
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services	C/CPIF	Torch Technologies : Huntsville, AL	2.747	0.000		0.000		0.000		-		0.000	0.000	2.747	0.000
Network / System Certification and Accreditation (C&A) - Cyber TEAMS MC09 - BMDS CSM/CND	C/CPFF	SYSTEM HIGH CORPORATION : TBD	0.000	0.000		0.505	Nov 2022	0.542	Nov 2023	-		0.542	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Cyber TEAMS MC09 - CCRM	C/CPFF	DECISIVE ANALYTICS CORPORATION : TBD	0.000	0.000		3.104	Nov 2022	3.297	Nov 2023	-		3.297	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Cyber TEAMS - MC09	C/CPFF	Booz Allen and Hamilton : McLean, VA	14.701	2.847	Nov 2021	0.000		0.000		-		0.000	0.000	17.548	0.000
Network / System Certification and Accreditation (C&A) - DD	MIPR	NSWC - DD : Dahlgren VA	1.300	0.000		0.000		0.000		-		0.000	0.000	1.300	0.000
Network / System Certification and Accreditation (C&A) - LBTS AWS Cyber Maintenance - MC09	C/CPFF	TBD : TBD	0.000	0.000		0.000		1.260	Nov 2023	-		1.260	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - LM	SS/CPAF	Lockheed Martin : Moorestown NJ	11.813	0.000		0.000		0.000		-		0.000	0.000	11.813	0.000
Network / System Certification and Accreditation (C&A) - PHD	MIPR	NSWC/PHD : Port Hueneme CA	0.501	0.000		0.000		0.000		-		0.000	0.000	0.501	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MC09 / Cyber Operations					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - Program Operations - MC09 - CivSal	Allot	MDA : VA	0.944	0.195	Nov 2021	0.161	Oct 2022	0.195	Oct 2023	-		0.195	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - RMS	SS/CPAF	Raytheon : Tucson, AZ	4.106	0.000		0.000		0.000		-		0.000	0.000	4.106	0.000
Network / System Certification and Accreditation (C&A) - Security Operations - Secure Communications/ Equipment	C/CPFF	Jacobs Technology : TN	0.946	0.619	Nov 2021	0.661	Dec 2022	0.678	Dec 2023	-		0.678	Continuing	Continuing	Continuing
RF Link Improvements - SM-3	SS/CPFF	Raytheon : Tucson, AZ	8.390	0.000		0.000		0.000		-		0.000	0.000	8.390	0.000
RF Link Improvements - Weapon System	SS/CPIF	Lockheed Martin : Moorestown, NJ	0.400	0.000		0.000		0.000		-		0.000	0.000	0.400	0.000
Subtotal			45.948	3.661		4.431		5.972		-		5.972	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			45.948	3.661		4.431		5.972		-		5.972	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023															
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD										Project (Number/Name) MC09 / Cyber Operations									
Significant Event Complete ▲				Milestone Decision Complete ★				Element Test Complete ◆				System Level Test Complete ●				Complete Activity ◆													
Significant Event Planned △				Milestone Decision Planned ☆				Element Test Planned ◇				System Level Test Planned ○				Planned Activity ◇													
										FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
MC09 Cyber Operations										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇						

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MC09 / Cyber Operations	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC09 Cyber Operations	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency									Date: March 2023			
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MX09 / Aegis BMD Development Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MX09: Aegis BMD Development Support	837.174	136.589	138.909	173.105	-	173.105	177.638	188.903	207.636	212.658	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note Increase from FY 2023 to FY 2024 provides Ballistic Missile Defense (BMD) 6.0 and Integrated Air and Missile Defense (IAMD) capability analysis, IAMD/BMD Mission Planner integration, doctrine development, and BMD/IAMD scenario development; increased development lab usage driven by the 6.x baseline test site usage as well as hardware and software refresh upgrades at the land based test sites used for the development of Aegis BMD baselines; and additional hardware upgrades for the BMDS Test Bed San Diego (BTS) in alignment with current baseline development and testing schedules.												
A. Mission Description and Budget Item Justification Provides Government, contractor, and Federally Funded Research and Development Center (FFRDC) workforce that manage the overall Sea-Based Weapon Systems program and enables the program to develop, build, and test standard missiles and associated Aegis Weapons Systems. Sea-Based Weapon Systems, in accordance with negotiated agreements between the U.S. Navy and the Missile Defense Agency (MDA) has identified and segregated funding for Developmental Support of Sea-Based Weapon Systems specific elements resident aboard Aegis capable U.S. Navy ships. Computer Program Support consists of, but is not limited to, reviews of Technical Observation Reports (TORs) that are generated by ship crews during exercises or deployments, determination of root causes and preparation of Computer Program Change Request (CPCR) to correct TORs, updates to the in-service computer program to apply, test and certify multiple CPCRs, and tests installation of Aegis Weapon System (Army/Navy Surface Radar Surveillance and Control radar/Fire Control System) alignment updates as required. Sea-Based Weapon Systems provides support to Annual Integration Events to ensure any updated Aegis Combat System computer programs do not degrade BMD equipped ships and provides distance and technical support for BMD equipped ships. Provides Fleet operations and mission support to enable the conduct of sustained BMD operation.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024	
Title: Program Operations Articles:									85.833	86.366	90.708	
									-	-	-	
Description: This activity includes the Government, contractor, and FFRDC workforce that manage the overall Sea-Based Weapon Systems program and enables the program to develop, build, and test standard missiles and the associated Aegis Weapon Systems. This project includes all operations support for the Aegis program office in Engineering, Testing, Logistics, Acquisition, Safety, Quality Assurance, Finance, Budget Formulation and Execution, Cost Estimation, and Earned Value Management in support of development activities.												
Specific and/or unique accomplishments to each FY are as follows:												
FY 2023 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>- SEE ABOVE.</p> <p>FY 2024 Plans:</p> <p>- SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>N/A</p>			
<p>Title: Aegis Ballistic Weapon System Support</p> <p align="right">Articles:</p> <p>Description: Provides system engineering for fielded Sea-Based Weapon Systems from warfighter feedback, investigation of BMDS Discrepancy Reports, and BMDS ground test observation analysis. It includes computer program defect corrections and supports assessment of flight test readiness.</p> <p>Recurring Accomplishments:</p> <ul style="list-style-type: none"> - Update threat adaptation data to keep pace with emergent threats - Provide operation and sustainment of land based test sites used for the development of Aegis BMD baselines. Operation and sustainment includes Engineering, Logistics, Quality Assurance, Configuration Management and other support activities to both baseline development and the sites. - Provide support for contingency operations of national interest - Support upgrades to fielded Aegis BMD computer programs baselines approved as an Operational Capability Baseline (OCB) - Provide engineering support to Operationally Capable Baseline ships that participate in BMD test events - Provide test site usage for maintenance and support of baselines under development - Sustain the classified computing infrastructure needed for development efforts <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <p>SEE ABOVE</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Provide capacity for increased development lab usage - Conduct hardware and software refresh at the land based test sites used for Aegis BMD baseline software development <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Increase from FY 2023 to FY 2024 provides increased development lab usage driven by the 6.x baseline test site usage as well as hardware and software refresh upgrades at the land based test sites used for the development of Aegis BMD baselines.</p>		22.468	21.766
		-	-
		38.468	-
Title: Fleet Integration		16.924	19.268
			26.196

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
Articles:			-	-	-
<p>Description: Provide Fleet operations and mission support to enable the conduct of sustained BMD operations; advocate war fighter requirements and fleet feedback in baseline development and capability upgrades to Aegis BMD weapon system; provide analysis and Mission Planning support for Geographic Combatant Commanders for operational application of Maritime BMD capabilities; and provide BMD Capabilities Analysis and Exercise Support for Aegis BMD baselines under development or currently deployed in the Operational Fleet.</p> <p>Recurring Accomplishments:</p> <ul style="list-style-type: none">- Define, develop and review Joint and Fleet Doctrine for incorporation of Aegis BMD capability transition to warfighter and baseline acceptance into MDA OCB- Research and define certification and warfighter acceptance requirements for Aegis BMD baselines to ensure successful capability delivery- Develop Aegis BMD training simulations and scenarios to support shipboard training including BMD Qualification and higher level exercises- Execute warfighter feedback process to enhance Aegis BMD functional capability development and influence future Aegis BMD requirements and support MDA Test Community and Combatant Commanders in BMD Exercises and Wargames- Provide analysis for Anti-Ship Ballistic Missile Defense- Provide analysis on parametric organic sensor sensitivity- Provide analysis on up-range ship/sensor support for Launch on Remote, Engage on Remote, and Cued engagements- Provide analysis on impacts of countermeasures- Provide analysis on developing threats <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none">- SEE ABOVE. <p>FY 2024 Plans:</p> <ul style="list-style-type: none">- Support recurring cloud based services costs- Integrate MTC2 Battle Management Aids (BMAs) to support integrated IAMD planning- Continue design, development, and delivery of IAMD planning capabilities in the Cerberus IAMD Planner to include new BMD baselines, new sensors, SBT Increment 2 and Increment 3, additional threats and begin planning for Hypersonic glide vehicle threats- Conduct Fleet Requests For Analysis (RFAs) in response to the evolving threat- Updates to shipboard and Fleet Maritime Operations Centers (MOC) mission planning systems					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD		Project (Number/Name) MX09 / Aegis BMD Development Support	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Conduct capability analysis, IAMD/BMD MP integration, doctrine development, and BMD/IAMD scenario development for BMD 6.0 with SPY-6 radar - Develop scenarios for the Navy's new Advanced Training Domain (ATD) system <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides BMD 6.0 BMD and IAMD capability analysis, IAMD/BMD Mission Planning integration, doctrine development, and BMD/IAMD scenario development.</p>					
<p>Title: Infrastructure Upgrades</p> <p align="right">Articles:</p> <p>Description: Provides management of Command, Control, Computer, Communications and Intelligence (C4I) aspects of the BTS San Diego upgrade plan to maintain Fleet representative C4I configurations to support testing, troubleshooting, and Fleet operations. Includes Information Technology (IT) services in support of the Aegis Research, Development, Testing and Evaluation mission to include: IT help-desk services; portal and data services; records management; business automation services; and desktop and Special Purpose Processing Nodes (SPPNs) maintenance and licenses. In addition, replaces critical IT infrastructure at end-of-life and to implement Department of Defense (DoD) mandated projects in support of the Joint Information environment (JIE) initiative.</p> <p>Recurring accomplishments:</p> <ul style="list-style-type: none"> - Conduct Aegis IT services such as IT help-desk; portal and data services; records management; business automation services; and desktop and SPPN maintenance and licenses - Replacement of critical end-of-life equipment - Upgrades to IT infrastructure planning and implementation efforts to accomplish DoD mandated IT Projects (JIE and DoD Chief Information Officer Information Resources Management initiatives. <p>FY 2023 Plans: SEE ABOVE</p> <p>FY 2024 Plans: - Update BTS San Diego with two additional Technology Insertion hardware baselines to align with Baseline 9 and Baseline 10 hardware configurations to support development testing and Ground/Flight Test requirements</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides additional hardware upgrades for BTS San Diego in alignment with current baseline development and testing schedules.</p>			11.364 -	11.509 -	17.733 -
Accomplishments/Planned Programs Subtotals			136.589	138.909	173.105

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support
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C. Other Program Funding Summary (\$ in Millions)

			<u>FY 2024</u>	<u>FY 2024</u>	<u>FY 2024</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Complete</u>	<u>Total Cost</u>
• 0208866C MD09: MD09 Aegis BMD O&M	77.170	69.071	72.224	-	72.224	85.696	99.209	96.412	93.554	Continuing	Continuing
• 0604878C: Aegis BMD Test	111.206	175.619	193.484	-	193.484	135.473	183.024	203.676	135.080	Continuing	Continuing
• 0604880C: Land Based SM-3 (LBSM3)	42.156	27.678	22.163	-	22.163	20.479	21.193	21.620	21.736	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Sea-Based Weapon Systems element acquisition approach supports evolutionary development, continuously building upon demonstrated capabilities to advance overall BMDS capability. After considering all the technical and management aspects of the program and to meet the requirements presented by an evolving ballistic missile threat, the Sea-Based Weapon Systems program awarded sole source contracts to Raytheon and Lockheed Martin to continue development of the Standard Missile-3 and the Aegis BMD Weapon System, respectively.

Competition will be maximized for purchase of any products or services as appropriate.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MX09 / Aegis BMD Development Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - MX09 - GSA Procurement for MDA Historical Project	C/CPFF	Gryphon Technologies : VA	0.316	0.000		0.000		0.000		-		0.000	0.000	0.316	0.000
Program Operations - MX09 - Civ Sal	Allot	MDA : VA	126.323	33.895	Nov 2021	33.869	Nov 2022	34.975	Nov 2023	-		34.975	Continuing	Continuing	Continuing
Program Operations - MX09 - DD PM	MIPR	NSWC/DD : Dahlgren, VA	10.968	0.000		0.000		0.000		-		0.000	0.000	10.968	0.000
Program Operations - MX09 - IT	Various	MDA : VA, AL	6.214	0.703	Dec 2021	1.774	Dec 2022	0.740	Dec 2023	-		0.740	Continuing	Continuing	Continuing
Program Operations - MX09 - MDA Travel	Allot	MDA : VA	5.887	0.992	Oct 2021	1.139	Oct 2022	1.253	Oct 2023	-		1.253	Continuing	Continuing	Continuing
Program Operations - MX09 - NAVSEA Civ Sal/ Training, Various	MIPR	NAVSEA : Washington, DC	54.259	12.702	Nov 2021	13.160	Nov 2022	15.614	Nov 2023	-		15.614	Continuing	Continuing	Continuing
Program Operations - MX09 - NAVSEA RB Sal	MIPR	NAVSEA : Washington, DC	8.955	1.880	Nov 2021	1.851	Nov 2022	1.907	Nov 2023	-		1.907	Continuing	Continuing	Continuing
Program Operations - MX09 - NAVSEA Travel	MIPR	NAVSEA : Washington, DC	2.496	0.000		0.000		0.000		-		0.000	0.000	2.496	0.000
Program Operations - MX09 - Security/USACE Litigation efforts	MIPR	Various : VA	2.918	0.584	Nov 2021	0.300	Nov 2022	0.300	Nov 2023	-		0.300	Continuing	Continuing	Continuing
Program Operations - MX09 - TEAMS	C/CPFF	Various : VA, AL	162.918	35.077	Nov 2021	4.314	Nov 2022	4.070	Nov 2023	-		4.070	Continuing	Continuing	Continuing
Program Operations - MX09 TEAMS Acquisition	C/CPFF	BCF SOLUTIONS, INC. : VA	0.000	0.000		2.315	Nov 2022	2.426	Nov 2023	-		2.426	Continuing	Continuing	Continuing
Program Operations - MX09 TEAMS Business Ops	C/CPFF	Veterans Technology, LLC : VA	0.000	0.000		3.679	Nov 2022	3.856	Nov 2023	-		3.856	Continuing	Continuing	Continuing
Program Operations - MX09 TEAMS MDS Engineering	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : VA	0.000	0.000		15.269	Nov 2022	16.002	Nov 2023	-		16.002	Continuing	Continuing	Continuing
Program Operations - MX09 TEAMS Office Admin	C/CPFF	YORKTOWN SYSTEMS GROUP, INC. : VA	0.000	0.000		2.085	Nov 2022	2.186	Nov 2023	-		2.186	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MX09 / Aegis BMD Development Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - MX09 TEAMS Predictive Eng	C/CPFF	TORCH TECHNOLOGIES INC : TBD	0.000	0.000		1.348	Nov 2022	1.413	Nov 2023	-		1.413	Continuing	Continuing	Continuing
Program Operations - MX09 TEAMS QMA	C/CPFF	AI SOLUTIONS, INC. : VA	0.000	0.000		2.174	Nov 2022	2.729	Nov 2023	-		2.729	Continuing	Continuing	Continuing
Program Operations - MX09 TEAMS Warfighter Integration	C/CPFF	STRATEGIC ALLIANCE BUSINESS GROUP LLC : VA	0.000	0.000		3.089	Nov 2022	3.237	Nov 2023	-		3.237	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - D - Strategic Investment	MIPR	039664375 - TAMERAN GRAPHIC SYSTEMS, INC. : TBD	0.000	2.140	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - ABS Various	MIPR	Various : Various	0.000	0.766	Nov 2021	0.954	Nov 2022	1.063	Nov 2023	-		1.063	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW APL	SS/CPFF	JHU/APL : Columbia, MD	7.855	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW DD	MIPR	NSWC DD : Dahlgren, VA	27.398	1.410	Nov 2021	3.223	Nov 2022	2.129	Nov 2023	-		2.129	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW LM	C/CPFF	Lockheed Martin : Moorestown, NJ	75.486	3.177	Nov 2021	4.215	Nov 2022	11.251	Nov 2023	-		11.251	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW NAVSEA	MIPR	NAVSEA : Washington, DC	68.558	13.225	Nov 2021	11.624	Nov 2022	20.881	Nov 2023	-		20.881	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW TECH REP	MIPR	Aegis Tech Rep : Moorestown, NJ	1.594	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW Wallops	MIPR	SCSC : Wallops Island, VA	6.493	1.750	Nov 2021	1.750	Nov 2022	3.144	Nov 2023	-		3.144	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MX09 / Aegis BMD Development Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Aegis Ballistic Weapon System Support - MX09 - TD Various	MIPR	Various : San Diego, CA	33.163	0.000		0.000		0.000		-		0.000	0.000	33.163	0.000
Aegis Ballistic Weapon System Support - MX09 - AW PHD	MIPR	NSWC PHD : Port Hueneme, CA	0.956	0.000		0.000		0.000		-		0.000	0.000	0.956	0.000
Fleet Integration - MX09 - ABS	MIPR	NIWC : San Diego, CA	2.000	0.500	Nov 2021	1.019	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Fleet Integration - MX09 - ABS APL	SS/CPFF	JHU/APL : Columbia, MD	0.000	6.979	Nov 2021	6.050	Nov 2022	10.274	Nov 2023	-		10.274	Continuing	Continuing	Continuing
Fleet Integration - MX09 - ABS Fleet	C/CPFF	LM : VA	5.058	0.000		0.000		0.000		-		0.000	0.000	5.058	0.000
Fleet Integration - MX09 - Fleet APL	SS/CPFF	JHU/APL/MD : Columbia, MD	54.269	4.305	Nov 2021	6.456	Nov 2022	8.195	Nov 2023	-		8.195	Continuing	Continuing	Continuing
Fleet Integration - MX09 - Fleet DD	MIPR	NSWC DD : Dahlgren, VA	14.967	2.612	Nov 2021	3.160	Nov 2022	4.734	Nov 2023	-		4.734	Continuing	Continuing	Continuing
Fleet Integration - MX09 - Fleet PEO C41	MIPR	PEO C41 : San Diego, CA	5.008	0.000		0.000		0.000		-		0.000	0.000	5.008	0.000
Fleet Integration - MX09 - Fleet SMDC	MIPR	SMDC/ARSTRST : Huntsville, AL	3.782	0.858	Nov 2021	0.930	Nov 2022	0.940	Nov 2023	-		0.940	Continuing	Continuing	Continuing
Fleet Integration - MX09 - TG & Cerberus Integration	C/CPFF	NORTHROP GRUMMAN : AL	0.315	0.000		0.000		0.000		-		0.000	0.000	0.315	0.000
Fleet Integration - MX09 - Fleet CSCS	MIPR	CSCS : Dahlgren, VA	6.875	1.670	Nov 2021	1.653	Nov 2022	2.053	Nov 2023	-		2.053	Continuing	Continuing	Continuing
Infrastructure Upgrades - MX-09 S Jacobs	C/CPAF	Jacobs Engineering : AL, CA, CO, NM, VA, HI	0.096	0.000		0.000		0.000		-		0.000	0.000	0.096	0.000
Infrastructure Upgrades - MX-09 S Network	C/CPFF	Network Management Resources : Chantilly, VA	0.171	0.000		0.000		0.000		-		0.000	0.000	0.171	0.000
Infrastructure Upgrades - MX09 - ICT Funding	C/CPAF	JACOBS TECHNOLOGY INC. : Various	70.820	11.364	Nov 2021	11.509	Nov 2022	11.898	Nov 2023	-		11.898	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MX09 / Aegis BMD Development Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Infrastructure Upgrades - MX09 - S	MIPR	DOD - USN - NAVAL INFORMATION WARFARE SYSTEMS COMMAND (NAVWAR) : CA	0.446	0.000		0.000		0.000		-		0.000	0.000	0.446	0.000
Infrastructure Upgrades - MX09 - S APL	SS/CPAF	JHU/APL : Laurel, MD	6.957	0.000		0.000		0.000		-		0.000	0.000	6.957	0.000
Infrastructure Upgrades - MX09 - S Corona	MIPR	NSWC Corona : Corona, CA	5.332	0.000		0.000		0.000		-		0.000	0.000	5.332	0.000
Infrastructure Upgrades - MX09 - S LM	C/CPAF	Lockheed Martin : Moorestown, NJ	21.629	0.000		0.000		0.000		-		0.000	0.000	21.629	0.000
Infrastructure Upgrades - MX09 - S MIT	C/CPAF	MIT : Lexington, MA	1.306	0.000		0.000		0.000		-		0.000	0.000	1.306	0.000
Infrastructure Upgrades - MX09 - S RMS	C/CPAF	Raytheon : Tucson, AZ	6.920	0.000		0.000		0.000		-		0.000	0.000	6.920	0.000
Infrastructure Upgrades - MX09- NIWC	MIPR	DOD - USN - NAVAL INFORMATION WARFARE SYSTEMS COMMAND (NAVWAR) : CA	18.244	0.000		0.000		5.835	Nov 2023	-		5.835	Continuing	Continuing	Continuing
Infrastructure Upgrades - MX09- S DD	MIPR	NSWC DD : Dahlgren, VA	3.843	0.000		0.000		0.000		-		0.000	0.000	3.843	0.000
Infrastructure Upgrades - MX09-Variou s	MIPR	Various : Various	1.579	0.000		0.000		0.000		-		0.000	0.000	1.579	0.000
Joint Emerging Operational Need (JEON) - MX09 AW JHU/APL	SS/CPFF	JHU/APL : Columbia, MD	0.480	0.000		0.000		0.000		-		0.000	0.000	0.480	0.000
Joint Emerging Operational Need (JEON) - MX09 AW Lockheed Martin	C/CPFF	Lockheed Martin : Moorestown, NJ	3.635	0.000		0.000		0.000		-		0.000	0.000	3.635	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MX09 / Aegis BMD Development Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Joint Emerging Operational Need (JEON) - MX09 AW NSWC	MIPR	NSWC DD : Dahlgren, VA	0.685	0.000		0.000		0.000		-		0.000	0.000	0.685	0.000
Subtotal			837.174	136.589		138.909		173.105		-		173.105	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			837.174	136.589		138.909		173.105		-		173.105	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency												Date: March 2023																													
Appropriation/Budget Activity 0400 / 4												R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD												Project (Number/Name) MX09 / Aegis BMD Development Support																	
Significant Event Complete ▲				Milestone Decision Complete ★				Element Test Complete ◆				System Level Test Complete ●				Complete Activity ◆																									
Significant Event Planned △				Milestone Decision Planned ☆				Element Test Planned ◇				System Level Test Planned ○				Planned Activity ◇																									
												FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028					
MX09 Aegis BMD Development Support												◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MX09 Aegis BMD Development Support	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program-Wide Support	406.321	31.595	21.789	25.847	-	25.847	22.489	28.081	27.357	28.120	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Wide Support (PWS) is allocated on a pro-rata basis across multiple Agency PE's 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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	31.595	21.789	25.847
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD40 / Program-Wide Support	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
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.			
FY 2023 Plans: - SEE ABOVE.			
FY 2024 Plans: - SEE ABOVE.			
FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides the PWS allocation 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.			
Accomplishments/Planned Programs Subtotals		31.595	21.789
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services (A&AS) support.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MD40 / Program-Wide Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Facilities and Maintenance SRM	MIPR	Various : Various	0.000	0.000		0.239	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	C/CPAF	Various : Multi: AL, CA, CO, VA	3.662	0.000		0.000		0.000		-		0.000	0.000	3.662	0.000
Program Wide Support - Agency Operations and Support Civilian Salaries	Allot	MDA : Multi: AK, AL, CO, CA, VA	320.142	31.595	Oct 2021	17.826	Oct 2022	25.847	Oct 2023	-		25.847	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	Various : Multi: AK/AL/CA/CO/HI/MD/VA/NJ/NY/OCONUS	31.368	0.000		0.924	Nov 2022	0.000		-		0.000	0.000	32.292	0.000
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AL, CA, CO, VA	46.459	0.000		0.000		0.000		-		0.000	0.000	46.459	0.000
Program Wide Support - Agency Operations, Sustainment and GPC	C/CPFF	021 - CDSA DAM NECK - DODN63273 : TBD	0.000	0.000		2.800	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various : Various	4.690	0.000		0.000		0.000		-		0.000	0.000	4.690	0.000
Subtotal			406.321	31.595		21.789		25.847		-		25.847	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			406.321	31.595		21.789		25.847		-		25.847	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023															
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD										Project (Number/Name) MD40 / Program-Wide Support									
Significant Event Complete ▲				Milestone Decision Complete ★				Element Test Complete ◆				System Level Test Complete ●				Complete Activity ◆													
Significant Event Planned △				Milestone Decision Planned ☆				Element Test Planned ◇				System Level Test Planned ○				Planned Activity ◇													
										FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
MD40 Program-Wide Support										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇						

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD40 / Program-Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)					PE 0603896C I Ballistic Missile Defense Command and Control, Battle Management & C ommunication							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	4,740.052	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing
MD01: Command & Control, Battle Management, Communications (C2BMC)	3,016.103	335.045	368.950	336.417	-	336.417	349.481	353.905	357.466	334.643	Continuing	Continuing
MC01: Cyber Operations	79.987	12.068	8.504	8.261	-	8.261	8.512	8.672	8.847	9.025	Continuing	Continuing
MT01: C2BMC Test	478.147	65.341	58.616	51.849	-	51.849	57.628	59.930	64.674	65.120	Continuing	Continuing
MX01: Command & Control, Battle Management, Communications (C2BMC) Development Support	971.762	122.194	131.903	138.665	-	138.665	139.480	142.259	145.342	148.249	Continuing	Continuing
MD40: Program-Wide Support	194.053	22.266	21.401	19.009	-	19.009	19.174	21.200	22.567	25.119	Continuing	Continuing
Program MDAP/MAIS Code: 362												
Note												
Decrease from FY 2023 to FY 2024 reflects realignment of Space Command and Control (C2) Integration funding from C2BMC, PE 0603896C to Special Programs - MDA, PE 0603891C to consolidate the funds and provide an integrated justification in the Special Programs budget exhibits and completion of integration activities for Spiral 8.2-5.												
A. Mission Description and Budget Item Justification												
The C2BMC program is the integrating element of the Missile Defense System. It is a vital operational system that enables the U.S. President, Secretary of Defense and Combatant Commanders at strategic, regional and operational levels to systematically plan missile defense operations, to collectively see the battle develop, and to dynamically manage designated networked sensors and weapons systems to achieve global and regional mission objectives. Systems linked through C2BMC include Patriot, Terminal High Altitude Area Defense, Aegis Ballistic Missile Defense, Aegis Ashore, Ground-based Midcourse Defense, Army Integrated Air and Missile Defense Battle Command System, and sensors such as the Army Navy/Transportable Radar Surveillance and Control-2 Radar, Sea-Based X-Band Radar, Long Range Discrimination Radar, Homeland Defense, Space-Based Infrared System, and Ballistic Missile Defense Systems Overhead Persistent Infrared Architecture. The C2BMC program also works to increase coalition partners' capabilities and investigates concepts and explores system engineering issues associated with innovative space applications for a missile defense intercept and defeat system. C2BMC begins support to integrate existing sensor elements within Missile Defense Agency and the Services into the Ballistic Missile Defense System Communications Network to establish a globally integrated sensor architecture to provide enhanced, dynamic space capabilities, and extend existing BCN network and cybersecurity management to cover the expanded architecture. Under the Missile Defense Agency's Defense of Guam Program, the C2BMC program is integrating Missile Defense and Joint systems, establishing an expeditionary and permanent Command Center and providing required communication support throughout the island.												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Command and Control, Battle Management & Communication
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B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	564.946	589.374	575.883	-	575.883
Current President's Budget	556.914	589.374	554.201	-	554.201
Total Adjustments	-8.032	0.000	-21.682	-	-21.682
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-8.032	0.000			
• Other Adjustment	0.000	0.000	-21.682	-	-21.682

Change Summary Explanation

The decrease in FY 2024 reflects a realignment of Space C2 Integration funding the from C2BMC, PE 0603896C to Special Programs - MDA, PE 0603891C to consolidate the funds and provide an integrated justification in the Special Programs budget exhibits.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication				Project (Number/Name) MD01 / Command & Control, Battle Management, Communications (C2BMC)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD01: Command & Control, Battle Management, Communications (C2BMC)	3,016.103	335.045	368.950	336.417	-	336.417	349.481	353.905	357.466	334.643	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2023 to FY 2024 reflects realignment of Space C2 Integration funding from C2BMC, PE 0603896C to Special Programs - MDA, PE 0603891C to consolidate the funds and provide an integrated justification in the Special Programs budget exhibits and completion of integration activities for Spiral 8.2-5.

A. Mission Description and Budget Item Justification

Provides incremental development, deployment, and operational support of C2BMC capabilities required for Missile Defense System planning, situational awareness, sensor management, and engagement coordination. The FY 2019 National Defense Authorization Act section 869 recognized C2BMC for its implementation of this iterative practice and directed C2BMC's inclusion in a Community of Practice to advise on agile or iterative development.

C2BMC delivers capabilities incrementally with each software build (named as a Spiral), adding to or enhancing the capability of the previous build. C2BMC incremental delivery of Spiral 8.2 provides critical Homeland Defense for increased Ground-Based Missile Defense (GMD) battlespace, improved threat tracking using multiple sensors communicating via Link 16, enhanced sensor tasking to meet track quality and discrimination timeliness requirements, Space Domain Awareness (SDA) tasking support, and improved cyber capabilities. Enhanced Homeland Defense also integrates the Ballistic Missile Defense System (BMDS) Overhead Persistent Infrared (OPIR) Architecture (BOA) with the Missile Defense System to enhance system level missile-tracking capabilities through earlier cueing of radars and weapon systems.

European Phased Adaptive Approach Phase 3/Engage-on-Remote (EOR) (Spiral 8.2-3) provides critical sensor management capability, greater engagement flexibility, improved OPIR-based cueing, and enhanced Aegis Ballistic Missile Defense (BMD) defended area by enabling Aegis to use Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) data for EOR engagements, providing a five-fold increase in defended area coverage in the US Central Command (USCENTCOM) and US European Command (USEUCOM) area of responsibility compared to individual weapon system organic capability. Spiral 8.2-3 also includes SDA and integrates Mobile Sensor Integration Phase 1 and BOA data into the Missile Defense System.

Long Range Discrimination Radar (LRDR) Control for Homeland Defense (Spiral 8.2-5) enables increased homeland and regional defense by providing LRDR sensor management, creation and dissemination of a BMD System track inclusive of LRDR sensor data, hypersonic threat tracking, significant capability expansion of track and reporting Advance Threats for warfighter SDA; implements Link-16 reporting, integration of system level discrimination data, transmission of LRDR-based information to GMD Fire Control (GFC) and other Missile Defense System elements; and operationalization of Space-based Kill Assessment (SKA) hit assessment for Homeland Defense.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>
<p>Expanded Regional and Homeland Defense Increment 7 (Spiral 8.2-7) will provide BMDS System Track (BST) with System Level Discrimination Integration for GMD engagements; Expanded Active Sensor Bias Monitoring and Full Reporting; Refined Space and Intelligence Data; Expanded Hypersonic Tracking and Link-16 Reporting.</p> <p>Expanded Defense of Guam Increment 9A will provide C2BMC and BOA support to Guam including a C2BMC Downloadable Unified Client (DUC) on Island and Cruise Missile Indications and Warnings while preparing for Enhanced Integrated Air and Missile Defense upgrades for Guam defense.</p> <p>Integration of GMD Next Generation Interceptor (NGI) and Initial Homeland Defense Threat Space (C2BMC Increment 10) will support GMD with BST, Sensor Resource Management, Battle Management, and System Level Discrimination to support integration of new GMD interceptor with initial updated homeland ballistic missile threat space for GMD engagements.</p> <p>C2BMC continues to develop incremental improvements to the Missile Defense System to keep pace with emerging threats worldwide by investing in the development, integration, and testing of advanced algorithms to improve track and discrimination capabilities and enhancing use of space based sensor data from sources such as the Space Based Infrared System, using the BMDS OPIR architecture. Related disciplines provide development and deployment support to C2BMC system capabilities. In support of Hypersonic Defense, C2BMC will provide contingency capability to demonstrate, develop and deploy a detection and warning for advanced threats. C2BMC continues Protected Anti-Jam/Anti-Scintillation Wideband Net-Centric System (PAAWNS) modem integration, installations, and technical refresh globally of the threat based communication network modernization against the advanced threat, while maintaining efficiencies in cost.</p> <p>C2BMC International Partner system engineering ensures allies and partners are integrated to the fullest extent possible with U.S. Missile Defense System capabilities. Collaborative system engineering, testing, and fielding facilitate interoperability with North Atlantic Treaty Organization (NATO) and partner nations such as Israel and Japan. C2BMC works with these nations to define and document international interfaces that are compatible with international standards and traceable to U.S. Missile Defense System requirements. C2BMC participates in test events and live fire exercises hosted by international partners to ensure U.S. missile defense weapons, sensors, and C2 systems are interoperable with international systems. C2BMC maintains and upgrades the U.S./NATO secure data sharing gateways located at Ramstein Air Base, Germany, for missile defense operations and training. C2BMC also supports development of Japan's BMD requirements to ensure interoperability of Japanese and U.S. BMD systems (sensors, shooters, C2) resulting in an integrated regional, operational, and strategic defense of Japan.</p> <p>C2BMC Modeling and Simulation (M&S) maintains Missile Defense System simulation/stimulation tools and federated models to support development and verification of deployed C2BMC and BOA Spirals. The BMDS C2BMC Model (BCM) is used for Flight Test pre-mission analysis and exercises to represent a second C2 Suite for Cross-Area of Responsibility functionality, Early Digital Product for C2BMC performance assessment, and supports development and integration of GMD, AN/TPY-2, and Aegis software and models. The OPIR sensor M&S is used in the Ground Test Integrated System-level Simulation (GTISS) as the stimulus for BOA. The BCM program provides a cost effective means to assess and explore the performance space of the Missile Defense System beyond what can be physically tested via Flight Tests and Target of Opportunity collections.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication	Project (Number/Name) MD01 / Command & Control, Battle Management, Communications (C2BMC)		
C2BMC develops, integrates, and tests advanced algorithms to improve discrimination capabilities and enhance the use of space-based sensor data. In support of MDA discrimination improvements effort, C2BMC demonstrates, develops, and deploys multiple techniques to improve BMD System ability to identify lethal and non-lethal objects.					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
Title: C2BMC Development and Deployment			260.119	313.489	262.715
Articles:			-	-	-
Description: Provides funding for incremental development and deployment of C2BMC capabilities that link sensors and shooters to enable integrated Missile Defense System capabilities, integrate BOA with the Missile Defense System architecture to enhance missile tracking capabilities and enable much earlier cueing of radars and shooters, and fulfill Cybersecurity requirements. The Enterprise Sensors Laboratory (ESL) and Experimentation Laboratory produce key prototypes for further maturation in the C2BMC capability Spiral development process and enable integrated experimentation for C2BMC, ESL, OPIR products, and other Missile Defense System elements through robust connectivity to simulation frameworks, weapon systems, sensors, and operational assets. Expand capability to track and report Advanced Threats for warfighter Situational Awareness. Expanding SDA tasking and reporting to include AN/TPY-2, LRDR, and Aegis sensors.					
Recurring accomplishments include iterative development and procurement cycles for hardware, software, network capability system engineering tasks, and artifacts for technical engineering reviews; participation in test readiness reviews, pre-test engineering, and analysis of ground and flight test results, wargames, and exercises in accordance with the Missile Defense System Integrated Master Test Plan (IMTP); site planning, scheduling, and hardware acquisition to support planned deployment of C2BMC Spirals and BOA capabilities; updates and maintenance for C2BMC Model (BCM) Missile Defense System simulation/ stimulation (federated model) and verification scenarios for all C2BMC Spirals deployed and under development; Discrimination, operationalization of SKA Hit Assessment, and C2BMC capabilities; design and installation of operational sharing gateways; and collaboration with international partners to ensure future interoperability; and maintain Verification and Validation in support of Missile Defense System capability ground testing and participation in Missile Defense System ground tests. C2BMC will continue to design and prototype the next incremental capability addressing Additional Homeland Defense and Mid-Term Discrimination requirements, inclusive of C2BMC Generation of BMD System Track (with System Level Discrimination Data Integration) for GMD Homeland Defense Engagements and Expanded Regional and Homeland Defense, and an expanded interface with the OPIR enterprise, which yields additional raid handling capacity, enhanced Aegis BMD engage on capability, and expanded hypersonic defense tracking and reporting.					
C2BMC will begin to integrate existing MDA and Service elements with C2BMC and the Ballistic Missile Defense System Communications Network (BCN) to establish a globally integrated sensor architecture to provide enhanced, dynamic space capabilities, and extend existing BCN network and cybersecurity management to cover the expanded architecture. The					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>expanded sensor architecture will integrate ground-based radars from the U.S. Space Force Space Surveillance Network (SSN), orchestrated by C2BMC, and develop algorithms to fuse and/or correlate the data provided by these sensors in support of missile defense and space C2 missions.</p> <p>Specific and/or unique accomplishments for each FY are as follows:</p> <p>FY 2023 Plans: LRDR for Homeland Defense (Spiral 8.2-5), homeland defense focus: - Continue sustainment of S8.2-5 capabilities</p> <p>C2BMC Additional and Expanded Regional and Homeland Defense focus: - Continue development of next iteration of BOA which will include addition of new sensors and expanded Advanced Threat Performance - Continue development to integrate additional advanced sensors into BOA to expand coverage and increase custody of emerging threats</p> <p>Space C2 Integration - Continue development and test of source and system track algorithms in support of Space C2 sensor orchestration - Continue development, integration, and test of the Eglin C-Band Radar, Millstone, ARPA Long-Range Tracking and Instrumentation Radar (ALTAIR), Space Fence, and Ground-Based Radar-Kwajalein sensors into C2BMC - Continue development of SDA sensor integration of a Upgraded Early Warning Radar (UEWR) sensor in support of Joint Space C2/Missile Defense (MD) missions - Support interface development and test for the Millstone, ALTAIR, Space Fence, Eglin C-Band, and UEWR radars as their U.S. Space Force upgrade paths near initial operational capability - Continue early operational testing of the above SSN sensors with C2BMC serving as the sensor orchestrator and track processor - Conduct studies to evaluate and optimize trades in support of delivering integrated Space C2 and missile defense capabilities</p> <p>FY 2024 Plans: LRDR for Homeland Defense (Spiral 8.2-5), homeland defense focus: - Continue operations and sustainment of Spiral 8.2-5 capabilities</p> <p>C2BMC Additional and Expanded Regional and Homeland Defense focus:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Continue development of next iteration BOA in support of updated raid performance needed for Increment 8/9 - Initiate development of next iteration of C2BMC to include integration with NGI and incorporation of new algorithms and performance needed for updated ballistic missile threat space for GMD engagements <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Decrease from FY 2023 to FY 2024 reflects realignment of Space C2 Integration funding from C2BMC, PE 0603896C to Special Programs - MDA, PE 0603891C to consolidate the funds and provide an integrated justification in the Special Programs budget exhibits and completion of integration activities for Spiral 8.2-5.</p>				
<p>Title: C2BMC Communications</p> <p align="right">Articles:</p> <p>Description: The BCN ties together an expanding set of sensors and weapons systems to enable the National Command Authority and the commanders at the strategic, theater, and tactical levels to optimally engage missile threats. Recurring accomplishments include the following:</p> <ul style="list-style-type: none"> - Provide GMD Communications Network (GCN) Long Haul Communications Transport services and a robust, end-to-end, high availability, operational communications network infrastructure with diverse paths that quickly and unambiguously share information across the global Missile Defense System - Participate in and analyze results from events scheduled in the Missile Defense System IMTP - Provide Missile Defense System communications via leased Defense Information Service Agency (DISA) circuits, and resolve real-time operational issues through DISA's Network Operations and Security Center - Provide effective network management to coordinate and integrate information across diverse equipment platforms, interface with other Department of Defense (DoD) communications systems, evolve information standards and capabilities, and adhere to the DoD Risk Management Framework - Continue upgrade and technical refresh of the PAAWNS threat based communication network against the advanced threat of nuclear capabilities, while maintaining efficiencies in cost - Upgrade BCN capability by supporting all DoD teleports to enhance satellite communications - Continue technical refresh for End-of-Life Satellite Communication terminals on Sea-Based X-Band Radar (SBX) by transitioning to Military Satellite Communications terminals - Continue acquiring additional network circuits to support the threat based communication network modernization - Continue PAAWNS modem testing integration and installations globally <p>Specific and/or unique accomplishments for each FY are as follows:</p> <p><i>FY 2023 Plans:</i></p>		37.061 -	35.461 -	35.212 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication	Project (Number/Name) MD01 / Command & Control, Battle Management, Communications (C2BMC)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
<div>- Continue upgrade and integration of AN-TPY/2 High-Altitude Electromagnetic Pulse Hardened Transport Terminals (HEMPHTTs) for increased protection of satellite communication systems at relevant sites</div> <div>- Provide SBX terminal and cyber upgrades</div> <div>FY 2024 Plans:</div> <div>- Complete upgrade and integration of AN-TPY/2 HEMPHTTs for increased protection of satellite communication systems at relevant sites</div> <div>- Continue GCN refresh from legacy to Optical equipment</div> <div>- Continue to support buildout of C2BMC nodes</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>N/A</div>					
<div>Title: Classified</div> <div>Articles:</div> <div>Description: Provides for the development of innovative command and control techniques and technology to accelerate integration of non-traditional sensors for missile defense. Leverage advanced processing nodes, innovative fusion techniques, and advanced capabilities for enhanced tracking and reporting.</div> <div>Specific and/or unique accomplishments for each FY are as follows:</div> <div>FY 2023 Plans:</div> <div>N/A</div> <div>FY 2024 Plans:</div> <div>N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>N/A</div>			37.865 -	0.000 -	0.000 -
<div>Title: Guam Defense C2BMC</div> <div>Articles:</div> <div>Description: Deploy C2BMC BCN to support Guam defense to provide ballistic and hypersonic threat typing and tracking, battle management decision aids and regional radar support while integrating with IBCS and Aegis Weapon System. BOA updates to support regional raid tracking. Enterprise Sensor Processing Node (ESPN) to provide cruise missile typing, warning, and tracking.</div>			0.000 -	20.000 -	38.490 -

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
<p>Integrate requirements for the Command Center and provide its common equipment. This project supports the Pacific Deterrence Initiative.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> -Initiate ESPN Cruise Missile development at ESL -Initiate Site Surveys, procure and install Type 1 Defense Information System Agency Nodes -Initiate Command Center Planning and Design <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Continue Initial Deployment including a C2BMC DUC on island and ESPN Cruise Missile Indications and Warnings - Continue to upgrade C2BMC and BOA to include support of a C2BMC Mission Node on Island and enhanced BOA Raid capacity with traditional and advanced threats - Continue Command Center planning and design, to include outfitting of common equipment for Initial Deployment Expeditionary Command Center and permanent Command Center - Continue planning and establishment of secure and redundant networks/communications connections for identified tactical and off-island sites - Initiate simulation/stimulation enablers and associated training capabilities <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>FY 2024 Pacific Deterrence Initiative funding has increased by \$18.490 million for network/communication connections and command center infrastructure support that enables and supports Initial Deployment and Enhanced Integrated Air and Missile Defense capabilities.</p>			
Accomplishments/Planned Programs Subtotals	335.045	368.950	336.417

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	209.004	195.216	220.311	-	220.311	239.705	334.977	384.992	292.629	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	250.123	230.502	239.159	-	239.159	212.191	233.877	242.623	251.226	Continuing	Continuing

UNCLASSIFIED

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603890C: <i>BMD Enabling Programs</i>	616.800	588.847	597.720	-	597.720	620.823	639.398	648.954	650.432	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	628.014	595.572	693.727	-	693.727	639.678	706.974	699.611	733.909	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	44.188	49.367	50.549	-	50.549	56.624	58.020	59.193	60.615	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	147.241	164.668	177.868	-	177.868	196.952	176.633	162.632	162.578	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	560.445	579.075	570.258	-	570.258	583.747	642.329	664.683	510.063	Continuing	Continuing
• 0604102C: <i>Guam Defense Development</i>	110.611	393.201	397.578	-	397.578	291.301	272.227	238.348	232.115	Continuing	Continuing
• 0604181C: <i>Hypersonic Defense</i>	281.886	517.977	208.997	-	208.997	218.939	294.326	366.951	644.996	Continuing	Continuing
• 0604672C: <i>Homeland Defense Radar-Hawaii</i>	75.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	75.000
• 0604873C: <i>Long Range Discrimination Radar (LRDR)</i>	129.552	75.120	103.517	-	103.517	100.114	68.815	69.219	65.521	Continuing	Continuing

Remarks

D. Acquisition Strategy

A sole source C2BMC contract to Lockheed Martin was awarded 1st quarter FY 2012. The current ordering period is through 4th quarter FY 2026. Major team members to Lockheed are Northrop Grumman, Boeing, Raytheon, and General Dynamics. They are charged with the systems engineering, modeling & simulation, development, testing, fielding, and cybersecurity development support of the C2BMC system. The sole source C2BMC Follow-on contract is planned to be awarded in 1st quarter FY 2024 to continue support of the C2BMC system. Additionally, other government agencies provide support to include DISA for C2BMC worldwide long-haul communications and various performers for modeling & simulation and independent verification and validation. C2BMC Program Office government, Federally Funded Research and Development Center/University Affiliated Research Center, and Contract Support Services personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment. Furthermore, a sole source Specialized Warfighter Development Contract was awarded to Northrop Grumman in March 2018 (3-year base and 2 one-year option periods) for continuation of the systems engineering, development, test and integration for BOA. The BOA Follow-on sole source contract is planned to be awarded in 3rd quarter FY 2023 with a 5-year period of performance.

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
C2BMC Development and Deployment - Aggregated Discrim	Various	TBD : Various	70.939	1.329	Oct 2021	6.598	Nov 2022	6.634	Nov 2023	-		6.634	Continuing	Continuing	Continuing
C2BMC Development and Deployment - BMDS C2BMC Model (BCM) - EDISS Integration	SS/CPIF	LOCKHEED MARTIN CORPORATION : Various	12.713	2.852	Oct 2021	0.933	Oct 2022	0.498	Oct 2023	-		0.498	Continuing	Continuing	Continuing
C2BMC Development and Deployment - BOA OPIR Stimulation M&S - EDISS/ GTISS	C/CPAF	SCITEC INC : NJ	0.583	2.990	Oct 2021	1.676	Nov 2022	1.562	Nov 2023	-		1.562	Continuing	Continuing	Continuing
C2BMC Development and Deployment - BOA OPIR Stimulation M&S - EDISS/ GTISS -GOV	MIPR	Sandia National Laboratories, New Mexico (SNL) : NM	3.208	0.793	Dec 2021	0.000		0.000		-		0.000	4.001	8.002	0.000
C2BMC Development and Deployment - BOA Simulation Development and Integration- EDISS	SS/CPAF	NORTHROP GRUMMAN : CO	1.451	2.426	Dec 2021	0.000		0.000		-		0.000	3.877	7.754	0.000
C2BMC Development and Deployment - C2BMC Hardware/Software Development, Integration & Test (I&T)	SS/CPIF	LOCKHEED MARTIN CORPORATION : Various	1,113.047	132.536	Dec 2021	137.805	Dec 2022	84.012	Dec 2023	-		84.012	Continuing	Continuing	Continuing
C2BMC Development and Deployment - C2BMC Integration	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	186.155	7.065	Nov 2021	8.673	Nov 2022	8.716	Nov 2023	-		8.716	Continuing	Continuing	Continuing

UNCLASSIFIED

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
C2BMC Development and Deployment - C2BMC Prior Year	Various	Various : Various	101.381	0.000		0.000		0.000		-		0.000	101.381	202.762	0.000
C2BMC Development and Deployment - ESL/BOA Development	SS/CPAF	NORTHROP GRUMMAN : CO	72.208	30.513	Oct 2021	56.679	Oct 2022	46.429	Oct 2023	-		46.429	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Federally Funded Research & Development Centers / University Affiliated Research Center-Aerospace	MIPR	DOD - USSF - SPACE AND MISSILE SYSTEMS CENTER (SMC) : Various	15.679	0.980	Sep 2022	0.785	Oct 2022	0.984	Oct 2023	-		0.984	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Federally Funded Research & Development Centers / University Affiliated Research Center-GTRI	MIPR	GTRI (Georgia Tech Research Institute) : TBD	0.000	0.000		3.933	Oct 2022	4.013	Oct 2023	-		4.013	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Federally Funded Research & Development Centers / University Affiliated Research Center-IDA	MIPR	DOD - WASHINGTON HEADQUARTERS SERVICES (WHS) ACQUISITION DIRECTORATE (AD) : Various	31.908	1.995	Oct 2021	1.938	Oct 2022	2.555	Oct 2023	-		2.555	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Federally Funded Research & Development Centers / University Affiliated Research Center-JHU/APL	MIPR	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : Various	88.541	5.534	Oct 2021	4.019	Oct 2022	3.832	Oct 2023	-		3.832	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Federally	MIPR	DOD - USAF - AIR FORCE LIFE CYCLE	12.320	0.770	Oct 2021	0.744	Oct 2022	3.134	Oct 2023	-		3.134	Continuing	Continuing	Continuing

UNCLASSIFIED

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Funded Research & Development Centers / University Affiliated Research Center-MIT/LL		MANAGEMENT CENTER (AFLCMC) : Various													
C2BMC Development and Deployment - Federally Funded Research & Development Centers / University Affiliated Research Center-NSEC	MIPR	DOD - USA - COMMUNICATIONS ELECTRONICS COMMAND (CECOM) : Various	86.388	5.399	Oct 2021	3.127	Oct 2022	3.203	Oct 2023	-		3.203	Continuing	Continuing	Continuing
C2BMC Development and Deployment - IT User Services - IRES	C/CPAF	JACOBS TECHNOLOGY INC. : Various	13.976	6.271	Mar 2022	6.132	Mar 2023	6.341	Nov 2023	-		6.341	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Independent Performance Assessment and Analysis	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : TBD	12.063	1.610	Nov 2021	7.654	Nov 2022	7.368	Nov 2023	-		7.368	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Independent Performance Assessment and Analysis - NSWC	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) DAHLGREN DIVISION (NSWCDD) : VA	0.000	0.000		0.000		2.102	Oct 2023	-		2.102	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Independent Performance Assessment and Analysis - SAF/FMBI	MIPR	DOD - USAF - SECRETARY OF THE AIR FORCE, DIRECTOR FOR BUDGET INVESTMENT (SAF/FMBI) : TBD	0.000	0.000		0.000		1.147	Oct 2023	-		1.147	Continuing	Continuing	Continuing

UNCLASSIFIED

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
C2BMC Development and Deployment - Independent Performance Assessment and Analysis -Various	Various	Various : Various	14.590	1.808	Oct 2021	4.455	Oct 2022	1.246	Oct 2023	-		1.246	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Joint Early Warning Lab (JEWL) and C2BMC Lab Build Out	C/CPAF	JACOBS TECHNOLOGY INC. : CO	9.318	0.988	Mar 2022	2.179	Mar 2023	8.803	Nov 2023	-		8.803	Continuing	Continuing	Continuing
C2BMC Development and Deployment - MDA Civilian, Travel & PCS	Allot	Various : Various	228.848	20.237	Oct 2021	23.151	Oct 2022	24.081	Oct 2023	-		24.081	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Models & Simulation	SS/CPIF	LOCKHEED MARTIN CORPORATION : Various	18.534	1.020	Oct 2021	1.309	Oct 2022	1.462	Oct 2023	-		1.462	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Spiral Development	MIPR	Sandia National Laboratories, New Mexico (SNL) : Various	13.068	0.717	Oct 2021	2.617	Oct 2022	4.342	Oct 2023	-		4.342	Continuing	Continuing	Continuing
C2BMC Development and Deployment - X Lab	SS/CPIF	LOCKHEED MARTIN CORPORATION : TBD	14.237	3.102	Oct 2021	5.485	Oct 2022	6.734	Oct 2023	-		6.734	Continuing	Continuing	Continuing
C2BMC Communications - C2BMC Prior Year	Various	Various : Various	145.517	0.000		0.000		0.000		-		0.000	145.517	291.034	0.000
C2BMC Communications - Communication Equipment and Fielding - DISA	MIPR	DOD - DEFENSE INFORMATION SYSTEMS AGENCY (DISA) : VA	83.386	11.345	Jan 2022	9.124	Jan 2023	7.339	Jan 2024	-		7.339	Continuing	Continuing	Continuing
C2BMC Communications - Communication Equipment and Fielding - Harris	MIPR	DOD - USA - PROGRAM MANAGER, DEFENSE COMMUNICATIONS	51.221	8.145	Jan 2022	4.375	Jan 2023	4.508	Jan 2024	-		4.508	Continuing	Continuing	Continuing

UNCLASSIFIED

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0400 / 4						PE 0603896C / Ballistic Missile Defense Command and Control, Battle Management & Communication						MD01 / Command & Control, Battle Management, Communications (C2BMC)			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		AND ARMY TRANSMISSION SYSTEMS (PM DCATS) : VA													
C2BMC Communications - Communication Equipment and Fielding - JHU/APL	C/CPIF	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : VA	19.316	2.455	Jan 2022	1.275	Jan 2023	1.700	Jan 2024	-		1.700	Continuing	Continuing	Continuing
C2BMC Communications - Communication Equipment and Fielding - Lockheed Martin	C/CPAF	LOCKHEED MARTIN CORPORATION : Various	0.000	0.000		8.732	Jan 2023	9.333	Jan 2024	-		9.333	Continuing	Continuing	Continuing
C2BMC Communications - Communication Equipment and Fielding - PAAWNS	MIPR	DOD - USA - PROGRAM MANAGER, DEFENSE COMMUNICATIONS AND ARMY TRANSMISSION SYSTEMS (PM DCATS) : VA	47.664	3.740	Jan 2022	3.806	Jan 2023	4.195	Jan 2024	-		4.195	Continuing	Continuing	Continuing
C2BMC Communications - Communication Equipment and Fielding - PMDCATS	MIPR	DOD - USA - PROGRAM MANAGER, DEFENSE COMMUNICATIONS AND ARMY TRANSMISSION SYSTEMS (PM DCATS) : PA	0.000	0.000		1.000	Jan 2023	1.500	Jan 2024	-		1.500	Continuing	Continuing	Continuing
C2BMC Communications - Communication Equipment and Fielding -Tobyhanna	MIPR	DOD - USA - TOBYHANNA ARMY DEPOT (TYAD) : VA	17.100	6.570	Jan 2022	2.183	Jan 2023	1.505	Jan 2024	-		1.505	Continuing	Continuing	Continuing

UNCLASSIFIED

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
C2BMC Communications - Communication Leases	MIPR	DOD - DEFENSE INFORMATION SYSTEMS AGENCY (DISA) : VA	69.197	4.806	Oct 2021	4.966	Oct 2022	5.132	Oct 2023	-		5.132	Continuing	Continuing	Continuing
Classified - Classified Program	MIPR	TBD : Various	50.000	37.865	Feb 2022	0.000		0.000		-		0.000	87.865	175.730	0.000
Guam Defense C2BMC - C2BMC Hardware/ Software Development, Integration & Test (I&T) User NODE (Phase I)	SS/CPIF	LOCKHEED MARTIN CORPORATION : Various	0.000	0.000		1.185	Nov 2022	6.733	Nov 2023	-		6.733	Continuing	Continuing	Continuing
Guam Defense C2BMC - Communication Equipment and Fielding	MIPR	DOD - DEFENSE INFORMATION SYSTEMS AGENCY (DISA) : VA	0.000	0.000		4.306	Nov 2022	21.321	Nov 2023	-		21.321	Continuing	Continuing	Continuing
Cruise Missile Defense for Homeland - Cruise Missile Defense for Homeland	MIPR	DOD - USAF - SECRETARY OF THE AIR FORCE, FINANCIAL MANAGEMENT (SAF/FM) : TBD	36.200	0.000		0.000		0.000		-		0.000	0.000	36.200	0.000
Guam Defense C2BMC - Management Decision Aids, Planners and Algorithms - ESPN/ESL/ BOA Development	C/CPAF	NORTHROP GRUMMAN : CO	0.000	0.000		13.648	Nov 2022	5.962	Nov 2023	-		5.962	Continuing	Continuing	Continuing
Guam Defense C2BMC - Upgrade C2BMC Battle Management Decision Aids, Planners and Algorithms - ESPN Development	C/CPFF	SCITEC INC : Various	0.000	0.000		0.861	Nov 2022	0.000		-		0.000	0.861	1.722	0.000
Subtotal			2,640.756	305.861		335.353		298.426		-		298.426	Continuing	Continuing	N/A

UNCLASSIFIED

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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

Remarks
In accordance with the Financial Management Regulation cost category definitions, some items have transferred to appropriate cost categories.

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
C2BMC Development and Deployment - Contract Support Services - BCF Solutions	C/CPFF	BCF SOLUTIONS, INC. : AL	15.499	0.933	Nov 2021	0.997	Nov 2022	1.384	Nov 2023	-		1.384	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Contract Support Services - BlueHalo	C/CPFF	BLUEHALO : AL	0.000	0.000		1.308	Nov 2022	1.340	Nov 2023	-		1.340	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Contract Support Services - Millennium Eng	C/CPFF	MILLENNIUM CORPORATION : AL	51.487	2.927	Nov 2021	3.733	Nov 2022	4.260	Nov 2023	-		4.260	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Contract Support Services - Parsons	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : Various	299.367	20.417	Nov 2021	22.388	Nov 2022	22.341	Nov 2023	-		22.341	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Contract Support Services - Various	C/CPFF	Various : Various	8.994	4.907	Nov 2021	5.171	Nov 2022	3.071	Nov 2023	-		3.071	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Contract Support Services - Veterans Technology	C/CPFF	Veterans Technology, LLC : AL	0.000	0.000		0.000		1.121	Nov 2023	-		1.121	Continuing	Continuing	Continuing
Guam Defense C2BMC - Contractor Support Services	C/CPFF	TBD : TBD	0.000	0.000		0.000		4.474	Nov 2023	-		4.474	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication						Project (Number/Name) MD01 / Command & Control, Battle Management, Communications (C2BMC)			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			375.347	29.184		33.597		37.991		-		37.991	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			3,016.103	335.045		368.950		336.417		-		336.417	Continuing	Continuing	N/A
Remarks N/A															

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PE 0603896C: *Ballistic Missile Defense Command and Co...* **UNCLASSIFIED** Volume 2a - 345
 Missile Defense Agency Page 19 of 58 R-1 Line #84

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD01 Command & Control, Battle Management, Communications (C2BMC) Planned	1	2022	4	2028
C2BMC and BOA Incremental Engineering Technical Reviews (IETR) Planned	2	2022	4	2028
BOA 7.0 OCB	4	2022	4	2022
Spiral 8.2-5 Homeland Defense Capability Declaration USNORTHCOM/USINDOPACOM	2	2023	2	2023
BOA 7.1.0 OCB	3	2023	3	2023
Spiral 8.2-5 Homeland Defense Capability Declaration USEUCOM/USCENTCOM	1	2024	1	2024
BOA 7.1.1 OCB	3	2024	3	2024
Downloadable Unified Client S8.2-5.1/BOA 7.0	4	2024	4	2024
BOA 7.1.2 OCB	1	2025	1	2025
Spiral 8.2-7 Expanded Regional and Homeland Defense Capability Declaration USNORTHCOM/USINDOPACOM	1	2026	1	2026
Spiral 8.2-7 Expanded Regional and Homeland Defense Capability Declaration USEUCOM/USCENTCOM	3	2026	3	2026
Mission Node on Island S8.2-7/BOA 8.1 w/Raid	4	2026	4	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication				Project (Number/Name) MC01 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC01: Cyber Operations	79.987	12.068	8.504	8.261	-	8.261	8.512	8.672	8.847	9.025	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

Command and Control, Battle Management, and Communications (C2BMC) Cyber Operations sustain the Missile Defense Agency (MDA) Risk Management Framework (RMF) and Security Controls Assessments/Controls Validation Testing activities, analysis of validation results, risk assessments, and reviews of proposed Program Manager/Information System Security Manager Plan of Action and Milestones (POA&Ms) and Cybersecurity Tools for MDA C2BMC mission systems. Activities in this Project are necessary to comply with the Federal Information Systems Modernization Act.

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

	FY 2022	FY 2023	FY 2024
Title: Network / System Certification and Accreditation (C&A)	12.068	8.504	8.261
Articles:	-	-	-
<p>Description: This activity maintains the Assessment and Authorization and Certification and Accreditation (C&A) data repository, capturing the RMF documentation (artifacts, validation results, Information Assurance Risk Assessment results, and Authorizing Official (AO) accreditation decisions) and POA&Ms on all MDA information systems. This activity prepares and submits C&A documentation and accreditation recommendations to the MDA Chief Information Officer/ Security Controls Assessor and the AO. Leverages Cross Domain Solution as single authority implementing standard security policies for C2BMC across the Ballistic Missile Defense System. Independent Verification and Validation team actions ensure the availability, integrity, authentication, confidentiality, and non-repudiation of the MDA mission, test, and administrative systems.</p> <ul style="list-style-type: none"> - Conduct cybersecurity design, engineering, and architecture planning for C2BMC information technology systems - Plan and test the cybersecurity controls for C2BMC systems - Conduct Security Controls Assessment testing continuous monitoring of C2BMC mission systems and provide POA&Ms to mitigate cybersecurity vulnerabilities <p>Specific and/or unique accomplishments for each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Transition Spiral 8.2-5 test assets to support sustainment testing, assessments, and evaluations - Update test labs to support next generation platform technology in support of Spiral 8.2-7 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MC01 / <i>Cyber Operations</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
- Upgrade all testbed enclaves with next generation cyber tools FY 2024 Plans: - SEE ABOVE. FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals		12.068	8.504
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy A sole source C2BMC contract to Lockheed Martin was awarded 1st quarter FY 2012. The current ordering period is through 4th quarter FY 2026. Major team members to Lockheed are Northrop Grumman, Boeing, Raytheon, and General Dynamics. They are charged with cybersecurity operations support of the C2BMC system. The sole source C2BMC Follow-on contract is planned to be awarded in 1st quarter FY 2024 to continue support of the C2BMC system. Additionally, various MDA government personnel and Contract Support Services personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment. Furthermore, a sole source Specialized Warfighter Development Contract was awarded to Northrop Grumman in March 2018 (3-year base and 2 one-year option periods) for continuation of cybersecurity operations support for Ballistic Missile Defense Overhead Persistent Infrared Architecture (BOA). The BOA Follow-on sole source contract is planned to be awarded in 3rd quarter FY 2023 with a 5-year period of performance.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>						Project (Number/Name) MC01 / <i>Cyber Operations</i>			

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - All Prior Years	Various	Various : Various	22.454	0.000		0.000		0.000		-		0.000	22.454	44.908	0.000
Network / System Certification and Accreditation (C&A) - Civilian Salaries	Allot	MDA Other : Various	2.403	0.620	Oct 2021	0.646	Oct 2022	0.840	Oct 2023	-		0.840	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Core C2BMC	SS/CPAF	LOCKHEED MARTIN CORPORATION : VARIOUS	44.204	9.510	Oct 2021	6.081	Nov 2022	5.779	Oct 2023	-		5.779	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Lab Infrastructure	C/CPAF	JACOBS TECHNOLOGY INC. : CO	5.551	0.478	Nov 2021	0.595	Nov 2022	0.604	Nov 2023	-		0.604	Continuing	Continuing	Continuing
Subtotal			74.612	10.608		7.322		7.223		-		7.223	Continuing	Continuing	N/A

Remarks

In accordance with the Financial Management Regulation cost category definitions, contract support services have transferred to appropriate cost categories.

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - Contract Support Services	C/CPFF	Various : VARIOUS	5.375	1.460	Oct 2021	1.182	Oct 2022	1.038	Oct 2023	-		1.038	Continuing	Continuing	Continuing
Subtotal			5.375	1.460		1.182		1.038		-		1.038	Continuing	Continuing	N/A

Remarks

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency											Date: March 2023				
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication					Project (Number/Name) MC01 / Cyber Operations					
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			79.987	12.068		8.504		8.261		-		8.261	Continuing	Continuing	N/A

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

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023																	
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Command and Control, Battle Management & Communication										Project (Number/Name) MC01 / Cyber Operations												
Significant Event Complete ▲					Milestone Decision Complete ★					Element Test Complete ◆					System Level Test Complete ●					Complete Activity ◆												
Significant Event Planned △					Milestone Decision Planned ☆					Element Test Planned ◇					System Level Test Planned ○					Planned Activity ◇												
										FY 2022		FY 2023			FY 2024			FY 2025			FY 2026			FY 2027			FY 2028					
MC01 Cyber Operations Planned										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
MC01 Incremental Engineering Technical Reviews (IETR) Planned											◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication	Project (Number/Name) MC01 / Cyber Operations	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC01 Cyber Operations Planned	1	2022	4	2028
MC01 Incremental Engineering Technical Reviews (IETR) Planned	2	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication				Project (Number/Name) MT01 / C2BMC Test			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MT01: C2BMC Test	478.147	65.341	58.616	51.849	-	51.849	57.628	59.930	64.674	65.120	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2023 to FY 2024 is in accordance with the current Integrated Master Test Plan (IMTP).

A. Mission Description and Budget Item Justification

Command and Control, Battle Management and Communications (C2BMC) Test supports system flight and ground testing, wargames, and exercises as detailed in the Missile Defense Agency (MDA) IMTP to ensure C2BMC capabilities delivered are consistent with the Prioritized Capabilities List and are interoperable with other Missile Defense System components.

MDA gains efficiencies and minimizes laboratory resource requirements (footprint, personnel, and hardware) by utilizing the C2BMC test bed and the Overhead Persistent Infrared Architecture (OPIR) Capabilities Lab test infrastructure as the laboratory environment supporting System Test, Development, and Sustainment. For System Ground and Flight Test, the labs are used for pre-test analysis, test execution, and post-test analysis. For Development, the labs are utilized for software verification and validation testing and system integration testing. For Sustainment, the labs are used to assist with root cause determination for issues discovered on the fielded system and validation of any required software patches.

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

	FY 2022	FY 2023	FY 2024
Title: Integrated Master Test Plan	65.341	58.616	51.849
Articles:	-	-	-
<p>Description: This activity funds C2BMC participation in Missile Defense System flight and ground testing, wargames and exercises, and resources in accordance with the Missile Defense System IMTP. Recurring accomplishments include:</p> <ul style="list-style-type: none"> - Assess Missile Defense System interoperability, integration, and functionality in lab and distributed environments, leveraging a complex set of scenarios to test the limits of the C2BMC system. Participate in and analyze results of ground tests and flight tests in accordance with the Missile Defense System IMTP. Support all phases of the MDA Ground Test Concept of Operations (CONOPS) and the MDA Flight Test CONOPS. Provide Flight Test Predictive Analysis support. Generate, test, and distribute federated model compatible scenarios for Ground Test and Flight Test Experimentation test support. Use Missile Defense System C2BMC Model to support exercise integration testing activities including test case and scenario checkout. - Utilize the Enterprise Sensors Laboratory to plan, coordinate, and provide test operations to demonstrate prototype algorithms through flight tests and United States-launched targets of opportunity. The development plans for algorithm improvements focus on track and measurement level sensor data fusion and feature extraction to improve 3-D track formation utilizing a variety of 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>space, airborne, and terrestrial-based sensors. Results from the tests and experiments are provided back to the algorithms development activity to enable algorithm refinement.</p> <ul style="list-style-type: none"> - Continue Long Range Discrimination Radar (LRDR) node integration, testing, and training with new C2BMC Spiral 8.2-5 Homeland Defense baseline changes at the Missile Defense Integration and Operation Center (MDIOC). Retain Existing Sensor Data Interfaces and provide LRDR Data for Risk Reduction for Ground-Based Missile Defense (GMD); Initial Hypersonic Tracking and Reporting; and Cyber Security Enhancements Risk Management Functions. - Utilize the C2BMC Experimentation Laboratory (X-Lab) to plan, coordinate, and provide test operations to demonstrate maturing C2BMC technologies and software builds within an integrated C2BMC environment through flight tests, ground tests, and real-world targets of opportunity before incorporation into formal C2BMC spiral builds. Results from the tests are provided back to the C2BMC and X-Lab development activity. - Participate in wargames and exercises using current and future C2BMC architectures to support all requesting Combatant Commands, North Atlantic Treaty Organization (NATO) partners, and Host Nations allowing warfighters to validate Ballistic Missile Defense (BMD) Techniques, Tactics, and Procedures specific to all designated Areas of Operations to include current and future C2BMC architectures. - Continue development, sustainment, and upgrades in the C2BMC Testbed (CTB) to support MDA IMTP Events (flight and ground tests). Continue Cyber Testing in the CTB to support continuous C2BMC spiral development. Continue Hardware in the Loop testing, C2BMC, and NATO planning exchanges, demonstrations, and support to NATO live fire events. Maintain Situational Awareness Nodes (Turkey, Romania, and Poland) in accordance with U.S. and Host nation Bi-lateral Agreements. Continue to enhance interoperability between U.S. BMD systems and the NATO BMD systems. Provide infrastructure, network, and troubleshooting support to C2BMC Command Center, to include the BMDS Network Operations and Security Center, System Test and Operations Center, C2BMC System Support Center, BMDS Communications Network, the Distributed Training system, and Combined OPIR Laboratories (OCL). - Begin to assess interoperability of C2BMC S8.2-7, BOA 7.1, AN/TPY-2 FBM CX 5.0, LRDR 2.0, GS 9, XBR 4.2, EKV 24.0/11.0, IBCS 4.6, PDB 8.1, and THAAD 4.1 - In cyber events: Assess C2BMC and BOA Baseline Revision (BBR) cyber security in Cooperative Vulnerability and Penetration Assessment (CVPA) events in the lab and operational asset environments; and AA events in the operational asset environment prior to fielding - Continue upgrades and implementation of latest Department of Defense (DoD) required Assured Compliance Assessment Solution (ACAS), Endpoint Security Services (ESS), and Cyber Security increments within the CTB including the OCL - Maintain CTB and OCLs to ensure availability for ground and cyber test events - Prepare, configure, and execute IMTP test events, Pairwise, Continuous Developmental Integration (CDI), and special test request 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
Specific and/or unique accomplishments for each FY are as follows:			
<p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Participate in flight test events to support fielding of Spiral 8.2-5 and BOA 7.0 additional capabilities by testing the following capabilities: Initial Integrated Air and Missile Defense Battle Command System (IBCS) Integration into Missile Defense System, Hit Assessment using Space-based Kill Assessment (SKA), and Conditioning & debris filtering of Mobile Sensor Integration (MSI) tracks - Participate in ground test events to support fielding of Spiral 8.2-7 and Ballistic Missile Defense Overhead Persistent Infrared Architecture (BOA) 7.1 BMD System Track (BST) with System Level Integrated Discrimination (SLD) by testing the following capabilities: Generation of BST with SLD to support GMD Engagements, BOA 7.1 Integration, Space Domain Awareness (SDA) refinement, Reporting of Space Object Catalog (SOC) entities to Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) (FBM) Radars and LRDR for use in radar calibration, and Expanded Hypersonic Tracking and Link-16 Reporting - In flight test events: Continue to collect data for SKA algorithm development. Collect data in support of Hypersonic Tracking capability, to assess C2BMC incremental capability performance, to include support of SKA Hit Assessment fielding; assess alternatives for C2BMC system track typing, correlation, and launch event association processes in the presence of advanced threats. Continue to demonstrate interoperability with Aegis and collect data to assess Aegis EoR capability - Continue to assess interoperability of C2BMC S8.2-5, BBR 7.0, AN/TPY-2 FBM Common X-Band (CX) 4.0, LRDR 1.0.1, Ground System (GS) 8B, XBR 4.1.1, EKV 23.2/11.0, IBCS 4.6, PDB 8.1, SBR 19-1, and Terminal High Altitude Area Defense (THAAD) 4.0; assess C2BMC planning, monitoring, and tasking capabilities effect on Homeland Defense performance <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Participate in flight test events to support fielding of Spiral 8.2-5 and BOA 7.0 additional capabilities by testing the following capabilities: IBCS Integration into the Missile Defense System and Conditioning & debris filtering of MSI tracks - Participate in ground test events to support fielding of Spiral 8.2-7 and BOA 7.1 BST with SLD by testing the following capabilities: Generation of BST with SLD to support GMD Engagements, BOA 7.1 Integration, SDA refinement, Reporting of SOC entities to AN/TPY-2 (FBM) Radars and LRDR for use in radar calibration, and Expanded Hypersonic Tracking and Link-16 Reporting - In flight test events: Collect data in support of Hypersonic Tracking capability, to assess C2BMC incremental capability performance, to include support of SKA Hit Assessment fielding; assess alternatives for C2BMC system track typing, correlation, and launch event association processes in the presence of advanced threats. Continue to demonstrate interoperability with Aegis and collect data to assess Aegis EoR capability 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
- Continue to assess interoperability of C2BMC S8.2-5, BOA 7.0, AN/TPY-2 FBM CX 5.0, LRDR 1.0, GS 8B, XBR 4.2, Orbital Boost Vehicle (OBV) 8.0/OBV11.0, IBCS 4.6, PDB 8.1, SBR 22-1, and THAAD 4.1; assess C2BMC planning, monitoring, and tasking capabilities effect on Homeland Defense performance			
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Decrease from FY 2023 to FY 2024 is in accordance with the current IMTP.			
Accomplishments/Planned Programs Subtotals	65.341	58.616	51.849

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	209.004	195.216	220.311	-	220.311	239.705	334.977	384.992	292.629	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	250.123	230.502	239.159	-	239.159	212.191	233.877	242.623	251.226	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	616.800	588.847	597.720	-	597.720	620.823	639.398	648.954	650.432	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	628.014	595.572	693.727	-	693.727	639.678	706.974	699.611	733.909	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	44.188	49.367	50.549	-	50.549	56.624	58.020	59.193	60.615	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	147.241	164.668	177.868	-	177.868	196.952	176.633	162.632	162.578	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	560.445	579.075	570.258	-	570.258	583.747	642.329	664.683	510.063	Continuing	Continuing
• 0604181C: <i>Hypersonic Defense</i>	281.886	517.977	208.997	-	208.997	218.939	294.326	366.951	644.996	Continuing	Continuing
• 0604672C: <i>Homeland Defense Radar-Hawaii</i>	75.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	75.000

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Command and Control, Battle Management & Communication	Project (Number/Name) MT01 / C2BMC Test	

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0604873C: <i>Long Range Discrimination Radar (LRDR)</i>	129.552	75.120	103.517	-	103.517	100.114	68.815	69.219	65.521	Continuing	Continuing

Remarks

D. Acquisition Strategy

A sole source C2BMC contract to Lockheed Martin was awarded 1st quarter FY 2012. The current ordering period is through 4th quarter FY 2026. Major team members to Lockheed are Northrop Grumman, Boeing, Raytheon, and General Dynamics. They are charged with the Integration and Test support of the C2BMC system as depicted in Missile Defense System Integrated Master Test Plan. The sole source C2BMC Follow-on contract is planned to be awarded in 1st quarter FY 2024 to continue support of the C2BMC system. Federally Funded Research and Development Center (FFRDC)/University Affiliated Research Center and Contract Support Services personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment. Additionally, a sole source Specialized Warfighter Development Contract was awarded to Northrop Grumman in March 2018 (3-year base and 2 one-year option periods) and is utilized for the Overhead Persistent Infrared Architecture (OPIR) Capabilities Lab test infrastructure as the laboratory environment supporting system tests. The BOA Follow-on sole source contract is planned to be awarded in 3rd quarter FY 2023 with a 5-year period of performance. Furthermore, the competitive Integrated Research and Development for Enterprise Solutions (IRES) contract with Jacob technologies was awarded in March 2022 with the planned follow-on award in February/March 2024 through August 2025. The contract provides support for the C2BMC testbed infrastructure for Missile Defense System tests and verification & validation of C2BMC developmental capabilities. Various other government agencies provide additional lab infrastructure support.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication					Project (Number/Name) MT01 / C2BMC Test				
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 Master Test Plan - All Prior Years	Various	Various : Various	90.701	0.000		0.000		0.000		-		0.000	0.000	90.701	0.000
Integrated Master Test Plan - Consolidated Contractor Support	Various	MDA : Huntsville, AL; Colorado Springs, CO; NCR	0.721	0.247	Oct 2021	0.252	Oct 2022	0.000		-		0.000	0.000	1.220	0.000
Integrated Master Test Plan - Enterprise Sensors Lab Infrastructure Support (NSWC)	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) DAHLGREN DIVISION (NSWCDD) : VA	0.000	0.000		0.000		1.057	Oct 2023	-		1.057	Continuing	Continuing	Continuing
Integrated Master Test Plan - Enterprise Sensors Lab Infrastructure Support (Various)	MIPR	Various : Various	19.310	2.160	Oct 2021	1.692	Oct 2022	0.593	Oct 2023	-		0.593	Continuing	Continuing	Continuing
Integrated Master Test Plan - Enterprise Sensors Lab Infrastructure/BOA Infrastructure-Missile Defense System Level Testing (Northrop)	SS/CPAF	NORTHROP GRUMMAN : CO	54.073	2.250	Mar 2022	2.617	Mar 2023	2.003	Mar 2024	-		2.003	Continuing	Continuing	Continuing
Integrated Master Test Plan - FFRDC	FFRDC	Institute for Defense Analyses (IDA) : Alexandria, VA	0.350	0.735	Oct 2021	1.008	Oct 2022	0.000		-		0.000	0.000	2.093	0.000
Integrated Master Test Plan - Information Assurance - Test Lab Infrastructure	C/CPAF	Jacobs Technology, Inc : Colorado Springs, CO	0.000	5.182	Oct 2021	4.514	Oct 2022	0.000		-		0.000	0.000	9.696	0.000
Integrated Master Test Plan - Missile Defense System Level Testing (Element/System Test Lab Facilities)	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	83.519	23.119	Mar 2022	19.521	Mar 2023	15.525	Mar 2024	-		15.525	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication						Project (Number/Name) MT01 / C2BMC Test			
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 Master Test Plan - Missile Defense System Level Testing (LM)	SS/IDIQ	LOCKHEED MARTIN CORPORATION : VARIOUS	179.987	18.217	Jul 2022	15.994	Jul 2023	18.021	Jul 2024	-		18.021	Continuing	Continuing	Continuing
Integrated Master Test Plan - Missile Defense System Level Testing - Element/System Test Lab Facilities	C/CPAF	NORTHROP GRUMMAN : CO	35.998	12.220	Mar 2022	10.997	Mar 2023	12.209	Mar 2024	-		12.209	Continuing	Continuing	Continuing
Integrated Master Test Plan - Missile Defense System Level Testing GOV	MIPR	Various : Various	13.488	1.211	Oct 2021	2.021	Oct 2022	2.441	Oct 2023	-		2.441	Continuing	Continuing	Continuing
Subtotal			478.147	65.341		58.616		51.849		-		51.849	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			478.147	65.341		58.616		51.849		-		51.849	Continuing	Continuing	N/A
Remarks Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency

Date: March 2023

Appropriation/Budget Activity

0400 / 4

R-1 Program Element (Number/Name)

PE 0603896C / Ballistic Missile Defense Command and Control, Battle Management & Communication

Project (Number/Name)

MT01 / C2BMC Test

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 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
GTI-ISR (21) (Missile Defense System Ground Test)	◆						
FTP-21 E1 (P8.1.1)(LTPO, DT Intercept Flight Test)	▲						
(WG) Demonstration, Table-top Exercises & Experiments 21	◆						
(EX) VIGILANT SHIELD 22	◆						
(EX) GLOBAL THUNDER 21	◆						
FTX-43 (OTHER, DT Tracking Exercise Flight Test)	▲						
(EX) KEEN EDGE 22	◆	◆					
(EX) JUNIPER COBRA 22	◆	◆					
(EX) AIR AND MISSILE DEFENSE EXERCISE 22	◆	◆	◆				
JFC-1 (OTHER, DT Tracking Exercise Flight Test)			◆				
GTI-08a (N/I) (Missile Defense System Ground Test)			◆				
SICO-8a-1			◆				
(WG) NIMBLE TITAN 22	◆	◆	◆	◆			
GTI-08a Part 2 (N/I)				◆			
TBG-2 (OTHER, DT Tracking Exercise Flight Test)				▲			
(EX) Joint Live, Virtual, and Constructive 2021/2022	◆	◆	◆	◆	◆		
Enterprise Sensor Lab Infrastructure Support Planned	◇	◇	◇	◇	◇	◇	◇
FTT-21 (TH, DT Intercept Flight Test)		▲					
(EX) EAGLE RESOLVE 22		▲					
(EX) RESILIENT SHIELD 22		▲					
(EX) GLOBAL LIGHTNING 22		◆	◆				
(EX) STEADFAST ALLIANCE 22		◆	◆				
(EX) JOINT AIR AND MISSILE DEFENSE EXERCISE SERIES 22		◆	◆	◆			
(EX) EUROPEAN TEST BED 22		◆	◆	◆			

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023									
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>										Project (Number/Name) MT01 / <i>C2BMC Test</i>									
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 ◇				
FTX-42 (OTHER, DT Target Only Flight Test)																								
(WG) Demonstration, Table-top Exercises & Experiments 22																								
GTI-09 Sprint 1 (E/C) (Missile Defense System Ground Test)																								
FTX-45																								
(EX) VIGILANT SHIELD 23																								
(EX) KEEN SWORD 23																								
(EX) GLOBAL RESPONSE EXERCISE 11																								
(EX) GLOBAL THUNDER 22																								
SICO -09-1																								
(EX) GLOBAL RESPONSE EXERCISE 12																								
GTD-08a (N/I) (Missile Defense System Ground Test)																								
JFTM-07 E1 (JAPAN, DT Tracking Exercise Flight Test)																								
GTD-07b (AA)																								
(WG) NIMBLE TITAN 24																								
SICO-09-3																								
SICO 9-4																								
TBG-3 (OTHER, DT Tracking Exercise Flight Test)																								
(EX) Joint Project Optic Windmill 2023																								
(EX) AIR AND MISSILE DEFENSE EXERCISE 23																								
GTI-09 Sprint 2 (E/C) (Missile Defense System Ground Test)																								
(EX) AUSTERE CHALLENGE 23																								
(EX) RESILIENT SHIELD 23																								
(EX) GLOBAL LIGHTNING 23																								
SICO-09-2																								

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023																			
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication										Project (Number/Name) MT01 / C2BMC Test									
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 2022		FY 2023			FY 2024			FY 2025			FY 2026			FY 2027			FY 2028		
(EX) EUROPEAN TEST BED 23														◇	◇	◇													
FTT-25 (TH, DT/OT Intercept Flight Test)															△														
SICO-08a-02															◇														
FTX-26 (OT) (SN, OT Target Only Flight Test)																△													
GTI-101 (E/C)																◇													
FTG-12 (GM, DT/OT Intercept Flight Test)																△													
(EX) VIGILANT SHIELD 24															◇	◇	◇	◇	◇										
(EX) KEEN EDGE 24															◇	◇	◇	◇											
FTM-32 (AEGIS SBT, DT/OT Intercept Flight Test)																△													
GTI-08b (N/I)																◇													
GTI-ASI (24) (Missile Defense System Ground Test)																	◇												
FTX-40 (AEGIS 5.1, DT Tracking Exercise Flight Test)																	△												
FTX-23 (AEGIS 5.1, DT Tracking Exercise Flight Test)																	△												
GTD-08b (N/I)																	◇												
FTX-28 E2 (TH, DT/OT Tracking Exercise Flight Test)																		△											
(EX) AIR AND MISSILE DEFENSE EXERCISE 24																	◇	◇	◇										
FTX-28 E1 (TH, DT/OT Tracking Exercise Flight Test)																		△											
GTI-102 (I)																		◇											
FTX-28 E3 (TH, DT/OT Tracking Exercise Flight Test)																		△											
Pacific Dragon-24 E2 (ARAV-T1)																			△										
Pacific Dragon-24 E1 (ARAV-B)																			△										
GTI-ISR (23) (Missile Defense System Ground Test)																		◇											
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)																				◇									
FTM-37 (AEGIS 5.1, DT/OT Intercept Flight Test)																				△									

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																																																							
Appropriation/Budget Activity 0400 / 4														R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Command and Control, Battle Management & Communication														Project (Number/Name) MT01 / C2BMC Test																																									
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 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028																															
GTI-ISR (25) (Missile Defense System Ground Test)																										◇																																											
FTM-43 (AEGIS 5.1, DT/OT Intercept Flight Test)																											△																																										
JFTX-01 E1 (JAPAN, DT Tracking Exercise Flight Test)																											△																																										
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)																											◇																																										
JFTX-01 E2 (JAPAN, DT Tracking Exercise Flight Test)																											△																																										
FTT-26 (MRBM T1)																											△																																										
FTM-30 (AEGIS 5.1, DT/OT Intercept Flight Test)																												△																																									
GTD-13 (N/I) (Missile Defense System Ground Test)																												◇																																									
GTI-12 (E/C)																													◇																																								
GTD-12 (E/C) (Missile Defense System Ground Test)																														◇																																							
GTI-ASI (26) (Missile Defense System Ground Test)																															◇																																						
FTM-40 (AEGIS 6, DT/OT Intercept Flight Test)																																△																																					
TH CTV-03 (TH, DT Interceptor Only Flight Test)																																△																																					
Pacific Dragon-26 E1 (ARAV-B)																																	△																																				
Pacific Dragon-26 E2 (ARAV-T)																																		△																																			
GTI-14 Sprint 1 (N/I)																																	◇																																				
GTI-24 (N/I)																																		◇																																			
FTX-47																																				△																																	
FTM-41 (AEGIS 6, DT/OT Intercept Flight Test)																																			△																																		
FTG-16 (GM, DT Intercept Flight Test)																																					△																																
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)																																					◇																																
SICO-24 (N/I)																																						◇																															
GTI-15 Sprint 1 (E/C)																																						◇																															
FTT-22 (TH, DT/OT Intercept Flight Test)																																						△																															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023				
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication										Project (Number/Name) MT01 / C2BMC Test				
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028		
FTG-17 (GM, DT/OT Intercept Flight Test)																	△		
GTD-14 (N/I) ((Missile Defense System Ground Test)																	◇		
GTI-ISR (27) (Missile Defense System Ground Test)																	◇		
FTM-42 (AEGIS 6, DT/OT Intercept Flight Test)																	△		
GTI-15 Sprint 2 (E/C)																	◇		
FTM-38																	◇		
FTM-47 (MRBM T4 X3/BQM-177 X4)																		△	
GTD-15 (E/C)																	◇		
FTG-18 (DT/OT)																		△	
GTI-25 (N/I)																		◇	
Pacific Dragon-28 E1 (ARAV-B)																		△	
Pacific Dragon-28 E2 (ARAV-B)																		◇	
GTI-ASI (28)																		◇	
GTI-16 Sprint 1 (N/I)																		◇	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GTI-ISR (21) (Missile Defense System Ground Test)	1	2022	1	2022
FTP-21 E1 (P8.1.1)(LTPO, DT Intercept Flight Test)	1	2022	1	2022
(WG) Demonstration, Table-top Exercises & Experiments 21	1	2022	1	2022
(EX) VIGILANT SHIELD 22	1	2022	1	2022
(EX) GLOBAL THUNDER 21	1	2022	1	2022
FTX-43 (OTHER, DT Tracking Exercise Flight Test)	1	2022	1	2022
(EX) KEEN EDGE 22	1	2022	2	2022
(EX) JUNIPER COBRA 22	1	2022	2	2022
(EX) AIR AND MISSILE DEFENSE EXERCISE 22	1	2022	3	2022
JFC-1 (OTHER, DT Tracking Exercise Flight Test)	3	2022	3	2022
GTI-08a (N/I) (Missile Defense System Ground Test)	3	2022	3	2022
SICO-8a-1	3	2022	3	2022
(WG) NIMBLE TITAN 22	1	2022	4	2022
GTI-08a Part 2 (N/I)	1	2023	1	2023
TBG-2 (OTHER, DT Tracking Exercise Flight Test)	1	2023	1	2023
(EX) Joint Live, Virtual, and Constructive 2021/2022	1	2022	1	2023
Enterprise Sensor Lab Infrastructure Support Planned	1	2022	4	2027
FTT-21 (TH, DT Intercept Flight Test)	2	2022	2	2022
(EX) EAGLE RESOLVE 22	2	2022	2	2022
(EX) RESILIENT SHIELD 22	2	2022	2	2022
(EX) GLOBAL LIGHTNING 22	2	2022	3	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>		Project (Number/Name) MT01 / <i>C2BMC Test</i>	
		Start		End	
Events	Quarter	Year	Quarter	Year	
(EX) STEADFAST ALLIANCE 22	2	2022	3	2022	
(EX) JOINT AIR AND MISSILE DEFENSE EXERCISE SERIES 22	2	2022	4	2022	
(EX) EUROPEAN TEST BED 22	2	2022	4	2022	
FTX-42 (OTHER, DT Target Only Flight Test)	3	2022	3	2022	
(WG) Demonstration, Table-top Exercises & Experiments 22	3	2022	1	2023	
GTI-09 Sprint 1 (E/C) (Missile Defense System Ground Test)	4	2022	4	2022	
FTX-45	4	2022	4	2022	
(EX) VIGILANT SHIELD 23	4	2022	1	2023	
(EX) KEEN SWORD 23	4	2022	1	2023	
(EX) GLOBAL RESPONSE EXERCISE 11	4	2022	1	2023	
(EX) GLOBAL THUNDER 22	4	2022	1	2023	
SICO -09-1	1	2023	1	2023	
(EX) GLOBAL RESPONSE EXERCISE 12	1	2023	1	2023	
GTD-08a (N/I) (Missile Defense System Ground Test)	1	2023	1	2023	
JFTM-07 E1 (JAPAN, DT Tracking Exercise Flight Test)	1	2023	1	2023	
GTD-07b (AA)	1	2023	1	2023	
(WG) NIMBLE TITAN 24	1	2023	1	2024	
SICO-09-3	2	2023	2	2023	
SICO 9-4	3	2023	3	2023	
TBG-3 (OTHER, DT Tracking Exercise Flight Test)	3	2023	3	2023	
(EX) Joint Project Optic Windmill 2023	1	2023	3	2023	
(EX) AIR AND MISSILE DEFENSE EXERCISE 23	1	2023	3	2023	
GTI-09 Sprint 2 (E/C) (Missile Defense System Ground Test)	2	2023	2	2023	
(EX) AUSTERE CHALLENGE 23	2	2023	2	2023	
(EX) RESILIENT SHIELD 23	2	2023	2	2023	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>		Project (Number/Name) MT01 / <i>C2BMC Test</i>	
		Start		End	
Events	Quarter	Year	Quarter	Year	
(EX) GLOBAL LIGHTNING 23	2	2023	3	2023	
SICO-09-2	2	2023	2	2023	
(EX) EUROPEAN TEST BED 23	2	2023	4	2023	
FTT-25 (TH, DT/OT Intercept Flight Test)	3	2023	3	2023	
SICO-08a-02	3	2023	3	2023	
FTX-26 (OT) (SN, OT Target Only Flight Test)	4	2023	4	2023	
GTI-101 (E/C)	1	2024	1	2024	
FTG-12 (GM, DT/OT Intercept Flight Test)	1	2024	1	2024	
(EX) VIGILANT SHIELD 24	3	2023	3	2024	
(EX) KEEN EDGE 24	3	2023	2	2024	
FTM-32 (AEGIS SBT, DT/OT Intercept Flight Test)	1	2024	1	2024	
GTI-08b (N/I)	4	2023	4	2023	
GTI-ASI (24) (Missile Defense System Ground Test)	2	2024	2	2024	
FTX-40 (AEGIS 5.1, DT Tracking Exercise Flight Test)	2	2024	2	2024	
FTX-23 (AEGIS 5.1, DT Tracking Exercise Flight Test)	2	2024	2	2024	
GTD-08b (N/I)	2	2024	2	2024	
FTX-28 E2 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024	
(EX) AIR AND MISSILE DEFENSE EXERCISE 24	1	2024	3	2024	
FTX-28 E1 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024	
GTI-102 (I)	3	2024	3	2024	
FTX-28 E3 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024	
Pacific Dragon-24 E2 (ARAV-T1)	4	2024	4	2024	
Pacific Dragon-24 E1 (ARAV-B)	4	2024	4	2024	
GTI-ISR (23) (Missile Defense System Ground Test)	3	2024	3	2024	
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)	1	2025	1	2025	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>		Project (Number/Name) MT01 / <i>C2BMC Test</i>	
		Start		End	
Events	Quarter	Year	Quarter	Year	
FTM-37 (AEGIS 5.1, DT/OT Intercept Flight Test)	1	2025	1	2025	
GTI-ISR (25) (Missile Defense System Ground Test)	2	2025	2	2025	
FTM-43 (AEGIS 5.1, DT/OT Intercept Flight Test)	2	2025	2	2025	
JFTX-01 E1 (JAPAN, DT Tracking Exercise Flight Test)	3	2025	3	2025	
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)	3	2025	3	2025	
JFTX-01 E2 (JAPAN, DT Tracking Exercise Flight Test)	3	2025	3	2025	
FTT-26 (MRBM T1)	3	2025	3	2025	
FTM-30 (AEGIS 5.1, DT/OT Intercept Flight Test)	4	2025	4	2025	
GTD-13 (N/I) (Missile Defense System Ground Test)	4	2025	4	2025	
GTI-12 (E/C)	1	2026	1	2026	
GTD-12 (E/C) (Missile Defense System Ground Test)	2	2026	2	2026	
GTI-ASI (26) (Missile Defense System Ground Test)	3	2026	3	2026	
FTM-40 (AEGIS 6, DT/OT Intercept Flight Test)	3	2026	3	2026	
TH CTV-03 (TH, DT Interceptor Only Flight Test)	3	2026	3	2026	
Pacific Dragon-26 E1 (ARAV-B)	4	2026	4	2026	
Pacific Dragon-26 E2 (ARAV-T)	4	2026	4	2026	
GTI-14 Sprint 1 (N/I)	4	2026	4	2026	
GTI-24 (N/I)	4	2026	4	2026	
FTX-47	4	2027	4	2027	
FTM-41 (AEGIS 6, DT/OT Intercept Flight Test)	1	2027	1	2027	
FTG-16 (GM, DT Intercept Flight Test)	2	2027	2	2027	
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)	2	2027	2	2027	
SICO-24 (N/I)	3	2027	3	2027	
GTI-15 Sprint 1 (E/C)	3	2027	3	2027	
FTT-22 (TH, DT/OT Intercept Flight Test)	3	2027	3	2027	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication		Project (Number/Name) MT01 / C2BMC Test	
		Start		End	
Events		Quarter	Year	Quarter	Year
FTG-17 (GM, DT/OT Intercept Flight Test)		4	2027	4	2027
GTD-14 (N/I) ((Missile Defense System Ground Test)		4	2027	4	2027
GTI-ISR (27) (Missile Defense System Ground Test)		4	2027	4	2027
FTM-42 (AEGIS 6, DT/OT Intercept Flight Test)		4	2027	4	2027
GTI-15 Sprint 2 (E/C)		1	2028	1	2028
FTM-38		1	2028	1	2028
FTM-47 (MRBM T4 X3/BQM-177 X4)		2	2028	2	2028
GTD-15 (E/C)		2	2028	2	2028
FTG-18 (DT/OT)		3	2028	3	2028
GTI-25 (N/I)		3	2028	3	2028
Pacific Dragon-28 E1 (ARAV-B)		4	2028	4	2028
Pacific Dragon-28 E2 (ARAV-B)		4	2028	4	2028
GTI-ASI (28)		4	2028	4	2028
GTI-16 Sprint 1 (N/I)		4	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication				Project (Number/Name) MX01 / Command & Control, Battle Management, Communications (C2BMC) Development Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MX01: Command & Control, Battle Management, Communications (C2BMC) Development Support	971.762	122.194	131.903	138.665	-	138.665	139.480	142.259	145.342	148.249	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from FY 2023 to FY 2024 provides additional Integrated Logistics Support (ILS) training material, facilities modifications and engineering support to prepare for deployment of Spiral 8.2-7.

A. Mission Description and Budget Item Justification

C2BMC Development Support provides operations engineering, integrated logistics, warfighter integration, deployment, and disposal of the current operational system and/or systems fielded in United States Strategic Command, United States Northern Command (USNORTHCOM), United States Indo-Pacific Command (USINDOPACOM), United States European Command (USEUCOM), United States Central Command (USCENTCOM), and U.S. Space Command (USSPACECOM) and the operation of the C2BMC Control Center. This activity provides continuous support of the development, deployment, sustainment of the C2BMC training systems, and updates training material to stay current with fielded capabilities.

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

	FY 2022	FY 2023	FY 2024
Title: Operations Engineering	105.237	113.079	120.326
Articles:	-	-	-
Description: This activity funds C2BMC support of current operational, test, and training systems. Recurring efforts include: <ul style="list-style-type: none"> - On-site maintenance, help-desk support, and developer reach-back support to ensure operational availability - C2BMC Command Center (CCC) provides 24 hours a day, 7 days a week, 365 days a year Ballistic Missile Defense System (BMDS) Overhead Persistent Infra-Red Architecture (BOA) and C2BMC operations including system and network monitoring, system administration, and network defense against cyber-attacks - ILS by providing a secure supply chain; reliability, availability, and maintainability (RAM) engineering; obsolescence engineering; and sparing to ensure operational availability - Cybersecurity engineering providing C2BMC Commercial-off-the-shelf software/hardware updates and CCC upgrades that address system vulnerabilities, field quarterly updates to reduce system component vulnerability to cyber-attacks - Information System Security Officers ensuring C2BMC compliance with latest cybersecurity requirements and policies 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication	Project (Number/Name) MX01 / Command & Control, Battle Management, Communications (C2BMC) Development Support		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
<div>- System modifications driven by Warfighter Involvement Process, Continuous Improvement Process, RAM and obsolescence engineering, and external systems such as Space-Based Infrared Sensors, Ground-based Midcourse Defense Fire Control, Aegis, Terminal High Altitude Area Defense, Navy Link Monitoring and Management Tool, Army Navy/Transportable Radar Surveillance and Control-2, standard Army communications, Defense Information Systems Agency (DISA) fiber networks, and Allied/Coalition interfaces</div> <div>- Combatant Command (CCMD) integration providing C2BMC training, on-site Subject Matter Experts (SMEs), and surge SME support for real-world events, flight tests, ground tests, exercises, cyber assessments, and wargames</div> <div>- Facility modifications required to house current or future C2BMC equipment and transportation for moving C2BMC equipment</div> <div>- Integrated product support for tactical satellite communications (SATCOM) used in flight tests, hardened SATCOM, and associated shelters</div> <div>- Provide transportation for flight test equipment and SME support and analysis for numerous test, exercise, and real world events</div> <div>- Provide recurring proficiency training to CCMDs and keep training material and systems consistent with operational capabilities</div> <div>Specific and/or unique accomplishments for each FY are as follow:</div> <div>FY 2023 Plans:</div> <div>- Begin sustainment of S8.2-5/BOA 7.0 capabilities</div> <div>- Complete BMDS Teleport Gateway architecture redesign, engineering and installation</div> <div>FY 2024 Plans:</div> <div>- Continue sustainment of S8.2-5/BOA 7.0 capabilities</div> <div>- Begin initial preparation for Spiral 8.2-7 deployment</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>Increase from FY 2023 to FY 2024 provides additional ILS training material, facilities modifications and engineering support to prepare for deployment of Spiral 8.2-7.</div>				
Title: Concurrent Test, Training, and Operations (CTTO)		16.957	18.824	18.339
Articles:		-	-	-
Description: This element provides the development and sustainment of the C2BMC Training Support System (TSS) and the Missions Specific Vendor Plug-in (MSVP) stand-alone operator training devices and the Distributed Training System (DTS) for USINDOPACOM, USNORTHCOM, USEUCOM, USCENTCOM, and USSPACECOM. C2BMC connects all Missile Defense System Elements through virtual and physical networks to facilitate integrated test, training, operations, and certification within two coexistent realms. This enables the warfighter to become proficient on current and future software versions at the operational				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
<p>console, increases the developer's capacity to perform a variety of tests and upgrades on the operational Missile Defense System, and decreases recall-to-mission operations times from weeks and days to hours and minutes. The recently acquired C2BMC MSVP is a gaming-based stand-alone trainer developed from a Small Business Innovation Research (SBIR) project. It delivers mission training simulation using core Standard Space Trainer and provides the same level of training fidelity as the legacy TSS but with greater flexibility in architecture and reduced long term cost. Recurring accomplishments include sustaining current training systems for Missile Defense System training events for the Unified Combatant Command developing the next generation training systems, to include the integration of Red Force / Blue Force capability, to keep current with the operational system capabilities.</p> <p>Specific and/or unique accomplishments for each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Continue MSVP and DTS development for inclusion of the capabilities that are planned for delivery in Spiral 8.2-7 - Provide hardware updates for DTS simulation and stimulation <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>N/A</p>			
Accomplishments/Planned Programs Subtotals	122.194	131.903	138.665

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	209.004	195.216	220.311	-	220.311	239.705	334.977	384.992	292.629	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	250.123	230.502	239.159	-	239.159	212.191	233.877	242.623	251.226	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	616.800	588.847	597.720	-	597.720	620.823	639.398	648.954	650.432	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency								Date: March 2023			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Co mmand and Control, Battle Management & Communication</i>				Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>			

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603892C: <i>AEGIS BMD</i>	628.014	595.572	693.727	-	693.727	639.678	706.974	699.611	733.909	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	44.188	49.367	50.549	-	50.549	56.624	58.020	59.193	60.615	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	147.241	164.668	177.868	-	177.868	196.952	176.633	162.632	162.578	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	560.445	579.075	570.258	-	570.258	583.747	642.329	664.683	510.063	Continuing	Continuing
• 0604181C: <i>Hypersonic Defense</i>	281.886	517.977	208.997	-	208.997	218.939	294.326	366.951	644.996	Continuing	Continuing
• 0604672C: <i>Homeland Defense Radar-Hawaii</i>	75.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	75.000
• 0604873C: <i>Long Range Discrimination Radar (LRDR)</i>	129.552	75.120	103.517	-	103.517	100.114	68.815	69.219	65.521	Continuing	Continuing

Remarks

D. Acquisition Strategy

A sole source C2BMC contract to Lockheed Martin was awarded 1st quarter FY 2012. The current ordering period is through 4th quarter FY 2026. Major team members to Lockheed are Northrop Grumman, Boeing, Raytheon, and General Dynamics. They are charged with the operations engineering, cybersecurity development, integrated logistics, warfighter integration, deployment, and disposal of the current fielded operational system and/or systems and the operation of the C2BMC Control Center. The sole source C2BMC Follow-on contract is planned to be awarded in 1st quarter FY 2024 to continue support of the C2BMC system. Contract Support Services (CSS) personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment. Furthermore, a competitive contract to Sonalysts was awarded in January 2020 with a five-year period of performance to provide a C2BMC stand-alone training system called MSVP.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication				Project (Number/Name) MX01 / Command & Control, Battle Management, Communications (C2BMC) Development Support					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Operations Engineering - All Prior Years	Various	Various : Various	58.566	0.000		0.000		0.000		-		0.000	0.000	58.566	58.566
Operations Engineering - Sustaining Support	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	7.087	1.810	Dec 2021	1.847	Dec 2022	2.022	Dec 2023	-		2.022	Continuing	Continuing	Continuing
Operations Engineering - Training Support	C/FPIF	BOEING : AL	3.203	1.193	Oct 2021	1.813	Nov 2022	1.462	Oct 2023	-		1.462	Continuing	Continuing	Continuing
Operations Engineering - Unit Personnel, Control System Improvement Sustaining Support (CCDC)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : VARIOUS	5.608	3.467	Oct 2021	4.622	Nov 2022	3.860	Oct 2023	-		3.860	Continuing	Continuing	Continuing
Operations Engineering - Unit Personnel, Control System Improvement Sustaining Support (NG)	C/CPAF	NORTHROP GRUMMAN : CO	9.100	4.466	Oct 2021	3.383	Nov 2022	6.264	Oct 2023	-		6.264	Continuing	Continuing	Continuing
Operations Engineering - Unit Personnel, Control System Improvement Sustaining Support (Various)	MIPR	Various : Various	12.022	3.244	Oct 2021	4.090	Nov 2022	8.275	Oct 2023	-		8.275	Continuing	Continuing	Continuing
Operations Engineering - Unit Personnel, Control System Improvement, Sustaining Support (LM)	SS/CPFF	LOCKHEED MARTIN CORPORATION : AL	684.122	90.448	Dec 2021	96.698	Dec 2022	97.804	Nov 2023	-		97.804	Continuing	Continuing	Continuing
Concurrent Test, Training, and Operations (CTTO) - All Prior Years	Various	Various : Various	8.443	0.000		0.000		0.000		-		0.000	0.000	8.443	4.610
Concurrent Test, Training, and Operations (CTTO) -	C/CPFF	BLUEHALO : AL	11.132	2.639	Dec 2021	3.129	Dec 2022	3.802	Dec 2023	-		3.802	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>						Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>			

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Training Enhancements (Blue Halo)															
Concurrent Test, Training, and Operations (CTTO) - Training Enhancements (CCDC)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	16.704	3.959	Dec 2021	4.694	Dec 2022	5.705	Dec 2023	-		5.705	Continuing	Continuing	Continuing
Concurrent Test, Training, and Operations (CTTO) - Training Enhancements (LM)	SS/CPFF	LOCKHEED MARTIN CORPORATION : VARIOUS	135.062	7.095	Dec 2021	8.294	Dec 2022	5.747	Dec 2023	-		5.747	Continuing	Continuing	Continuing
Concurrent Test, Training, and Operations (CTTO) - Training Enhancements (Sonalysts)	SS/CPFF	SONALYSTS, INC. : CT	15.775	3.264	Dec 2021	2.707	Dec 2022	3.085	Dec 2023	-		3.085	Continuing	Continuing	Continuing
Subtotal			966.824	121.585		131.277		138.026		-		138.026	Continuing	Continuing	N/A

Remarks
In accordance with the Financial Management Regulation cost category definitions, contract support services have transferred to appropriate cost categories.

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Operations Engineering - Contract Support Services - Parsons	MIPR	PARSONS GOVERNMENT SERVICES INC. : VARIOUS	4.938	0.609	Oct 2021	0.626	Nov 2022	0.639	Oct 2023	-		0.639	Continuing	Continuing	Continuing
Subtotal			4.938	0.609		0.626		0.639		-		0.639	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023					
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication						Project (Number/Name) MX01 / Command & Control, Battle Management, Communications (C2BMC) Development Support					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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		
Remarks N/A																	
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			971.762	122.194		131.903		138.665		-		138.665	Continuing	Continuing	N/A		
Remarks Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency

Date: March 2023

Appropriation/Budget Activity

0400 / 4

R-1 Program Element (Number/Name)

PE 0603896C / Ballistic Missile Defense Co
mmand and Control, Battle Management &
Communication

Project (Number/Name)

MX01 / Command & Control, Battle Management, Communications (C2BMC) Development Support

Significant Event Complete ▲

Milestone Decision Complete ★

Element Test Complete

System Level Test Complete ●

Complete Activity ♦

Significant Event Planned Δ

Milestone Decision Planned ☆

Element Test Planned

System Level Test Planned ☐

Planned Activity ✨

	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
MX01 Command & Control, Battle Management, Communications (C2BMC) Development Support Planned	◆	◆	◆	◆	◆	◆	◆
MX01 Incremental Engineering Technical Reviews (IETR) Planned	◆	◆	◆	◆	◆	◆	◆

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication	Project (Number/Name) MX01 / Command & Control, Battle Management, Communications (C2BMC) Development Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MX01 Command & Control, Battle Management, Communications (C2BMC) Development Support Planned	1	2022	4	2028
MX01 Incremental Engineering Technical Reviews (IETR) Planned	2	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program-Wide Support	194.053	22.266	21.401	19.009	-	19.009	19.174	21.200	22.567	25.119	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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	22.266	21.401	19.009
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
<p>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.</p> <p><i>FY 2023 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2024 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> N/A</p>			
Accomplishments/Planned Programs Subtotals	22.266	21.401	19.009

<p>C. Other Program Funding Summary (\$ in Millions) N/A</p> <p>Remarks</p>

<p>D. Acquisition Strategy The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services (A&AS) support.</p>
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>						Project (Number/Name) MD40 / <i>Program-Wide Support</i>			

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations Management	Various	Various : Multi: AL, CA, CO, VA	6.277	0.000		0.000		0.000		-		0.000	6.277	12.554	0.000
Program Wide Support - Agency Operations Travel	Various	Various : Various	0.000	0.536	Oct 2021	0.496	Oct 2022	1.158	Oct 2023	-		1.158	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services Civilian Salaries, Travel, Training	Allot	MDA : AL	89.094	17.048	Oct 2021	17.537	Oct 2022	17.578	Oct 2023	-		17.578	Continuing	Continuing	Continuing
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various : Various	52.036	0.000		0.000		0.000		-		0.000	0.000	52.036	0.000
Subtotal			147.407	17.584		18.033		18.736		-		18.736	Continuing	Continuing	N/A

Remarks
In accordance with the Financial Management Regulation cost category definitions, some items have transferred to appropriate cost categories.

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations and Support Services	C/CPFF	NETWORK MANAGEMENT RESOURCES, INC. : AL	23.087	4.146	Jul 2022	2.870	Jul 2023	0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (FFP)	C/CPFF	Veterans Technology, LLC : AL	23.559	0.536	Nov 2021	0.498	Nov 2022	0.273	Nov 2023	-		0.273	Continuing	Continuing	Continuing
Subtotal			46.646	4.682		3.368		0.273		-		0.273	Continuing	Continuing	N/A

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency										Date: March 2023				
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)				
0400 / 4					PE 0603896C / Ballistic Missile Defense Command and Control, Battle Management & Communication					MD40 / Program-Wide Support				
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	194.053	22.266		21.401		19.009		-		19.009	Continuing	Continuing	N/A	
Remarks														
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.														

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023															
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication										Project (Number/Name) MD40 / Program-Wide Support									
Significant Event Complete ▲					Milestone Decision Complete ★					Element Test Complete ◆					System Level Test Complete ●					Complete Activity ◆									
Significant Event Planned △					Milestone Decision Planned ☆					Element Test Planned ◇					System Level Test Planned ○					Planned Activity ◇									
										FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
MD40 Program-Wide Support										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇					

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / Ballistic Missile Defense Co mmand and Control, Battle Management & Communication	Project (Number/Name) MD40 / Program-Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)					PE 0603898C I Ballistic Missile Defense Joint Warfighter Support							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	333.314	50.261	50.269	48.248	-	48.248	49.164	50.445	51.542	52.859	Continuing	Continuing
MD03: Joint Warfighter Support	152.888	18.042	17.537	19.606	-	19.606	20.067	20.432	20.817	21.209	Continuing	Continuing
MT03: Joint Warfighter Support Test	159.209	30.109	30.748	26.763	-	26.763	27.160	27.804	28.460	29.129	Continuing	Continuing
MC03: Cyber Operations	0.448	0.151	0.159	0.164	-	0.164	0.168	0.171	0.174	0.177	Continuing	Continuing
MD40: Program-Wide Support	20.769	1.959	1.825	1.715	-	1.715	1.769	2.038	2.091	2.344	Continuing	Continuing
Program MDAP/MAIS Code: 362												
Note												
N/A												
A. Mission Description and Budget Item Justification												
<p>The Joint Warfighter Support Program (JWSP) is the Missile Defense Agency's (MDA's) primary means for providing direct technical support to Combatant Commands (CCMDs), the Military Services and the Joint Staff on Missile Defense System development, testing, and operational support, to include Real World testing and validation of the warfighter's operational Common Integration Broadcast (CIB). It enables delivery of Missile Defense System capabilities to Warfighters and ensures their participation in the identification and development of new Missile Defense (MD) capabilities via the Warfighter Involvement Process. The JWSP allows the Warfighter and MDA to work together to identify gaps, seams, and needs in warfighting capability and enhance Missile Defense System attributes by submitting modification and fielding requests. It also provides 24 hours a day, 7 days a week, 365 days a year MD operational support to Warfighters worldwide, to include global system verification and validation over the operational CIB. The program enables rapid response to Warfighter Requests for Information and Requests for Analyses, which are especially critical to mission success in protecting U.S. Forces and other defended assets during Real World threat events. The program supports improving products delivered to Warfighters through technical reviews and technical analyses supporting strategic and regional MD planning, development of shot doctrine and MD design. The JWSP also enables the inclusion of both CCMD and MDA MD objectives in CCMD/Joint Staff-sponsored Wargames and Exercises, which are used to sharpen and enhance joint MD warfighting skills. Finally, the JWSP administers all Navy Reserve support personnel and handles coordination for Army, Air Force and Space Force Reserve that provide technical, engineering, intelligence, integration, and operational support to the MDA.</p>												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)		PE 0603898C I Ballistic Missile Defense Joint Warfighter Support			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	50.594	50.269	51.849	-	51.849
Current President's Budget	50.261	50.269	48.248	-	48.248
Total Adjustments	-0.333	0.000	-3.601	-	-3.601
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.333	0.000			
• Other Adjustment	0.000	0.000	-3.601	-	-3.601
Change Summary Explanation					
N/A					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Jo int Warfighter Support				Project (Number/Name) MD03 / Joint Warfighter Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD03: Joint Warfighter Support	152.888	18.042	17.537	19.606	-	19.606	20.067	20.432	20.817	21.209	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The increase from FY 2023 to FY 2024 provides for an increase in primary function requirements and funding for the addition of Naval Reserve support to the Missile Defense Agency (MDA).

A. Mission Description and Budget Item Justification

There are seven primary functions in Joint Warfighter Support (MD03):

- (1) Missile Defense Operations Support
- (2) Combatant Command Integration
- (3) Military Service Integration
- (4) Operational Missile Defense System Verification and Validation
- (5) Warfighter Training and Education Support
- (6) Joint Staff Integration
- (7) Reserve Integration

Detailed descriptions and accomplishments are provided in section B. Accomplishments/Planned Program.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2022	FY 2023	FY 2024
Title: Strategic Warfighter Integration				18.042	17.537	19.606
Articles:				-	-	-
Description: (1) Missile Defense Operations Support: - Manage and operate the Missile Defense Agency (MDA) Operations Support Center 24 hours a day, 7 days a week, 365 days a year and two MDA Operations Centers in Virginia and Alabama for daily execution of scheduled Missile Defense System activities; and prepare and transmit Logistic Reports. - Manage and execute the Missile Defense System Asset Management process of planning, coordinating, scheduling and executing access to operational and Research, Development, Test and Evaluation (RDT&E) assets operated by MDA and Warfighters dispersed globally with differing missions and competing priorities to facilitate assets in support of Warfighter Ballistic Missile Defense (BMD); Missile Warning/Space Surveillance operations; MDA RDT&E, training and sustainment activities.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MD03 / <i>Joint Warfighter Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> - Lead the MDA Operations Support Planning Team, an MDA-wide task force supporting Warfighters, Services and the Joint Staff to address real-world contingencies and crisis events. - Develop Missile Defense System Annual Plan and Missile Defense System Operating Schedule facilitating key stakeholder coordination and maximizing operational availability of the Missile Defense System. - Develop and maintain the Integrated Scheduling Tool. - Facilitate major software/hardware additions to the Operational Capability Baseline for homeland/regional defenses. - Develop and maintain the Missile Defense System Operational Readiness Reporting System application to collect and report Missile Defense System operational availability and readiness data through the network-based tool to distribute data to Office of the Secretary of Defense, Combatant Commands (CCMDs), Joint Staff, Military Services, and Missile Defense System Operators. - Provide certification training to Ballistic Missile Defense Systems (BMDS) watch officers, BMDS Safety Officers, and other Operations Support Center staff. <p>(2) CCMD Integration United States Strategic Command, United States Northern Command (USNORTHCOM), United States Central Command, United States European Command, United States Indo-Pacific Command, and United States Space Command (USSPACECOM):</p> <ul style="list-style-type: none"> - Support the Warfighter Involvement Process (WIP) and other MDA Warfighter engagement efforts by assisting Warfighters in their update to the annual Missile Defense System Prioritized Capabilities List and Modification and Fielding Request List (MFRL). - Aid CCMD participation in missile defense capability definition, design, development, integration, and delivery processes through the WIP to synchronize capability delivery with operational readiness and acceptance. - Support Joint Functional Component Command Integrated Missile Defense integration by participating in the Warfighter Forum a multi-lateral information and decision event to address CCMD, Service and Department of Defense (DoD) Missile Defense System equities. - Assist USNORTHCOM in broadening homeland defense planning to address the full range of USNORTHCOM threats by conducting the Homeland Defense Architecture Working Group and Shot Management Analysis Cell. - Prepare MDA senior leadership for engagements with CCMDs. - Interface with CCMDs on Missile Defense (MD) operational issues by providing planning and analysis support and translating warfighter responses to MDA issues. - Manage the Warfighter Requests for Information; Requests for Analyses; and Requests for Allied Participation in Tests processes. <p>(3) Military Service Integration:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MD03 / <i>Joint Warfighter Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> - Facilitate and coordinate Service Boards of Directors on Lead Service Missile Defense System related equities, Program Objective Memorandum development and execution, element fielding, operations and maintenance, and the Missile Defense System capability delivery process. - Maintain daily, strategic-level interfaces with Military Services and Joint Staff plan for the delivery, fielding, and operation of respective Lead Service Missile Defense System capabilities via senior-level working groups, General Officer Air and Missile Defense and Space forums. - Support transition and transfer to the Military Services through participation in senior-level working groups, Joint Staff directorates, and facilitate General Officer forums. <p>(4) Operational Missile Defense System Verification and Validation:</p> <ul style="list-style-type: none"> - Provide 24 hours a day, 7 days a week, 365 days a year, global system verification and validation over the operational Common Integrated Broadcast, and Shared Early Warning System for MD early warning data. - Support Tactical Data Processor software development, MDA flight tests and other software development efforts using live real-world broadcasts of simulated missile threats. - Support Naval Board of Inspection and Survey, Shipboard installation, Aegis On-Demand, Aegis program releases, US and Coalition operational readiness and BMD Exercise requirements to validate equipment, materiel, and tactical readiness while simultaneously providing deployment certification and crew operator qualification. - Verify operational readiness of both US and Coalition partners to detect a real-world launch of a ballistic threat. <p>(5) Warfighter Training and Education Support:</p> <ul style="list-style-type: none"> - Provide Missile Defense Space Warning Tool (MDST) support to increase operator proficiency, competence, and confidence; provide initial qualification training; and ship certification for Aegis BMD crews. - Provide technical and programmatic updates for BMD Warfighter training; participates in Missile Defense System training and Education Working Group to coordinate Missile Defense System training issues with USSPACECOM and Joint Staff. - Support Fleet Synthetic and Aegis Operator Training to ensure operational readiness of Aegis as the first step in the kill chain for MD. - Provide Early Warning missile injects for MT03 war games and exercises and tailored support for other Joint Warfighter Support Test events (as listed in the Integrated Master Test Plan and R-4/4A schedule). <p>(6) Joint Staff Integration:</p> <ul style="list-style-type: none"> - Facilitate and coordinate all Joint Staff interactions with the MDA. - Maintain daily, strategic-level interfaces with the Joint Staff. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MD03 / <i>Joint Warfighter Support</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
Specific and/or unique accomplishments for each FY are as follows:			
<i>FY 2023 Plans:</i> - SEE ABOVE <i>FY 2024 Plans:</i> (7) Reserve Integration - Manage activities and lead coordination for Reserve support to MDA provided by Army, Air Force, Space Force and the Navy, including Reserve Navy Engineering Duty Officer and enlisted billets and personnel - Provide direct Military Reserve manpower, to include technical, engineering, intelligence and operational support, to MDA; (1) Within individual member statutory limitations (i.e. one weekend/month and two weeks/year); (2) Via Active Duty for Operational Support (ADOS) personnel orders - Process and manage ADOS requests throughout the MDA - Provide assistance for the Operational Support Officer role to support the Warfighter <i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> The increase from FY 2023 to FY 2024 provides an increase in primary function requirements and funding for the addition of Naval Reserve support to the Missile Defense Agency (MDA).			
Accomplishments/Planned Programs Subtotals	18.042	17.537	19.606

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	250.123	230.502	239.159	-	239.159	212.191	233.877	242.623	251.226	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	616.800	588.847	597.720	-	597.720	620.823	639.398	648.954	650.432	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	628.014	595.572	693.727	-	693.727	639.678	706.974	699.611	733.909	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and</i>	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency								Date: March 2023			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>				Project (Number/Name) MD03 / <i>Joint Warfighter Support</i>			

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
<i>Control, Battle Management & Communication</i>											
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	44.188	49.367	50.549	-	50.549	56.624	58.020	59.193	60.615	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Integrated Research and Development for Enterprise Solutions (IRES) Contract and the Specialized Warfighter Development Contract are the major performing integrated contracts. The acquisition strategy for Strategic Warfighter Integration mission execution is to employ a contract to perform designated integration and sustainment tasks to conduct Missile Defense System RDT&E. Strategic Warfighter Integration is operated by missile defense subject matter experts composed of Government, military, civilian personnel, Contract Support Services, and major defense contractors.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>						Project (Number/Name) MD03 / <i>Joint Warfighter Support</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Strategic Warfighter Integration - Strategic Warfighter Integration - HR A&AS	C/CPFF	LSINC Corp : Colorado Springs	0.867	0.000		0.000		0.000		-		0.000	0.000	0.867	0.000
Strategic Warfighter Integration - Strategic Warfighter Integration - Administrative A&AS	C/CPFF	YORKTOWN SYSTEMS GROUP, INC. : Various	1.972	0.000		0.000		0.105	Nov 2023	-		0.105	Continuing	Continuing	Continuing
Strategic Warfighter Integration - Strategic Warfighter Integration - Civilian Salaries/ Operations Sustainment	Allot	MDA : Colorado Springs/Huntsville, NCR	47.812	5.531	Oct 2021	5.412	Oct 2022	5.781	Oct 2023	-		5.781	Continuing	Continuing	Continuing
Strategic Warfighter Integration - Strategic Warfighter Integration - Current Operations	C/CPAF	Jacobs Technology/ IRES : Colorado Springs	27.776	2.435	Dec 2021	1.248	Nov 2022	1.053	Nov 2023	-		1.053	Continuing	Continuing	Continuing
Strategic Warfighter Integration - Strategic Warfighter Integration - IT / SLA / BAM	C/CPAF	Jacobs Technology/ IRES : Colorado Springs, Huntsville	5.685	0.206	Jan 2022	0.596	Jan 2023	1.027	Jan 2024	-		1.027	Continuing	Continuing	Continuing
Strategic Warfighter Integration - Strategic Warfighter Integration - MDST	C/CPAF	Northrop Grumman/ SWDC : Colorado Springs	29.980	5.826	Nov 2021	4.149	Nov 2022	4.228	Nov 2023	-		4.228	Continuing	Continuing	Continuing
Strategic Warfighter Integration - Strategic Warfighter Integration - Strategic Warfighter Integration - Reservist Support	MIPR	DOD - USN - NAVAL INFORMATION WARFARE CENTER (NIWC) PACIFIC : Various	0.000	0.000		0.000		1.182	Oct 2023	-		1.182	0.000	1.182	0.000
Strategic Warfighter Integration - Strategic Warfighter Integration - Travel and PCS	Allot	MDA : Colorado Springs, Huntsville, NCR	1.873	0.588	Oct 2021	0.359	Nov 2022	0.365	Nov 2023	-		0.365	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Joint Warfighter Support						Project (Number/Name) MD03 / Joint Warfighter Support			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Strategic Warfighter Integration - Strategic Warfighter Integration - Warfighter Support A&AS	C/CPFF	STRATEGIC ALLIANCE SOLUTIONS LLC : Colorado Springs, Huntsville, NCR	36.923	3.456	Nov 2021	5.773	Dec 2022	5.865	Dec 2023	-		5.865	Continuing	Continuing	Continuing
Subtotal			152.888	18.042		17.537		19.606		-		19.606	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			152.888	18.042		17.537		19.606		-		19.606	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 Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																				
Appropriation/Budget Activity 0400 / 4														R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Joint Warfighter Support										Project (Number/Name) MD03 / Joint Warfighter Support										
Significant Event Complete ▲				Milestone Decision Complete ★				Element Test Complete ◆				System Level Test Complete ●				Complete Activity ◆																		
Significant Event Planned △				Milestone Decision Planned ☆				Element Test Planned ◇				System Level Test Planned ○				Planned Activity ◇																		
														FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028								
Strategic Integration Wargame Events in support of MT03														◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Jo int Warfighter Support	Project (Number/Name) MD03 / Joint Warfighter Support

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Strategic Integration Wargame Events in support of MT03	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Jo int Warfighter Support				Project (Number/Name) MT03 / Joint Warfighter Support Test			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MT03: Joint Warfighter Support Test	159.209	30.109	30.748	26.763	-	26.763	27.160	27.804	28.460	29.129	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note
Decrease from FY 2023 to FY 2024 reflects changes in Wargames and Exercises requirements.

A. Mission Description and Budget Item Justification

Joint Warfighter Support Test is to provide support to Missile Defense System Wargames and Exercises.

Wargames and Exercises:

- Support the Warfighter to plan and conduct worldwide Wargames and Exercises supporting Missile Defense System development and fielding.
- Enable the Warfighter to define, test, deploy, and employ new missile defense capabilities.
- Support Joint Functional Component Commander for Integrated Missile Defense (JFCC IMD) Missile Defense System Table Top Exercises to facilitate the global missile defense capability and to refine the European capability concept of operations through low-fidelity demonstration Models & Simulation (M&S).
- Continue test planning for Wargames and Exercises.

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

		FY 2022	FY 2023	FY 2024
Title: Wargames and Exercises		26.355	27.092	23.024
Articles:		-	-	-
<p>Description: The Missile Defense Agency (MDA) provides operational-level interfaces to the Global Combatant Commands (GCCs) and ensures Warfighter participation to develop future missile defense capabilities.</p> <ul style="list-style-type: none"> - Work with Combatant Commands (CCMDs) on the inclusion of Allies and regional partners into MDA Ground and Flight tests and Wargames and Exercises simulations. - Support JFCC IMD and USEUCOM in the European Phased Adaptive Approach (EPAA) implementation process through the planning, testing, integration and execution of Missile Defense System Wargames and Exercises. - Support Joint Staff integration of MDA models into Tier I events through the Joint, Live Virtual Constructive (JLVC) campaign. - Work with Program Offices and the Warfighter; publish a Concept of Operations that will support future MDA Models and Simulation support to Missile Defense System Wargames and Exercises. - Coordinate and integrate CCMD requirements into the Missile Defense System Integrated Master Test Plan and Integrated Master Schedule. 				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>- Provide support to the development and update of Ballistic Missile Defense (BMD) portions of CCMD Operation Plans (OPLANS) and Contingency Plans (CONPLANS).</p> <p>- Engage in MDA/GCC interface and synchronization of information regarding capabilities and security cooperation strategies.</p> <p>- Develop and provide Wargames, Exercises and Table Top Exercises (TTX) in support of CCMD-specific scenarios as listed in the R4-4A schedule for the United States European Command (USEUCOM), United States Indo-Pacific Command (USINDOPACOM), United States Central Command (USCENTCOM) and United States Northern Command (USNORTHCOM) / United States Strategic Command (USSTRATCOM) Geographic Combatant Commands.</p> <p>USEUCOM Engagement:</p> <p>- Coordinate with USEUCOM for continued MDA support of key EPAA Approach milestones in order to provide a full range of Missile Defense System capabilities addressing ballistic missile threats to the European theater.</p> <p>- Work with USEUCOM to include NATO Allies and regional partners during MDA Ground tests, Flight tests, Wargames and Exercises in order to improve Allied - US Missile Defense System interoperability.</p> <p>- Coordinate with MDA program elements to facilitate rapid agency responses to USEUCOM requests for analysis and information. Provide reach-back support for the MDA Assistant to the MDA Director and Liaison Officer in USEUCOM for activities requiring visibility by the MDA Director and Director for Test.</p> <p>USCENTCOM Engagement:</p> <p>- Promote CCMD leadership in developing a regional partner data sharing system supporting USCENTCOM regional Integrated Air and Missile Defense (IAMD) architecture development.</p> <p>- Coordinate with MDA program elements, assisting in planning and execution activities supporting USCENTCOM's regional partners.</p> <p>USINDOPACOM Engagement:</p> <p>- Assist USINDOPACOM leadership in broadening Phased Adaptive Approach planning to address a full range of threats and integration of allies into the Missile Defense System.</p> <p>- Support USINDOPACOM (Operations Directorate) J3 in efforts to promote the Aegis Ashore system.</p> <p>- Share operational information and knowledge and help allies develop common operational procedures.</p> <p>FY 2023 Plans:</p> <p>- SEE ABOVE.</p> <p>FY 2024 Plans:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
- SEE ABOVE.			
FY 2023 to FY 2024 Increase/Decrease Statement: - Decrease from FY 2023 to FY 2024 reflects changes in Wargames and Exercises requirements.			
Title: Program, Planning and Operations		3.754	3.656
Articles:		-	-
Description: MDA provides and ensures Warfighter participation in the development of future missile defense capabilities and requirements. The key Warfighter interface activities include: - Provide resource management and administration of personnel and funding. - Manage and provide programmatic direction and oversight of the MDA Wargames and Exercise program. - Provide MDA Wargames and Exercises support to the Office of the Secretary of Defense, Military Service Components, the Joint Chiefs of Staff, the CCMD, the JFCC IMD, and international partners/allies to assist warfighter Tactics, Techniques, and Procedures validation and identify gaps that drive warfighter requirements. - Lead MDA planning, testing, integration and execution of all MDA-supported CCMD Wargames and Exercises.			
FY 2023 Plans: -SEE ABOVE			
FY 2024 Plans: - SEE ABOVE.			
FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals		30.109	30.748
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy In order to optimize the performance of the Missile Defense System, MDA leverages Defense Department executive agents as well as the MDA Integrated Research and Development for Enterprise Solutions (IRES) contract.			

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<p>The executing agents utilize various contracting strategies in a flexible manner to maximize their contribution to the Missile Defense System. Products and Services are acquired by competitive means to the extent that is possible and practical.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>						Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Wargames and Exercises - CSS	C/TBD	TBD : TBD	0.000	0.000		0.000		12.206	Nov 2023	-		12.206	Continuing	Continuing	Continuing
Wargames and Exercises - International Simulation Enhancements	C/Various	NORTHROP GRUMMAN : CO	0.000	0.000		0.000		2.171	Nov 2023	-		2.171	Continuing	Continuing	Continuing
Wargames and Exercises - SimCenter / Wargames & Exercise- SMDC	C/CPFF	DOD - USA - SPACE AND MISSILE DEFENSE COMMAND (SMDC) : AL	0.000	0.000		0.000		0.765	Nov 2023	-		0.765	Continuing	Continuing	Continuing
Wargames and Exercises - SimCenter / Wargames & Exercises	C/CPIF	JACOBS TECHNOLOGY INC. : VARIOUS	0.000	4.975	Nov 2021	5.375	Nov 2022	4.620	Nov 2023	-		4.620	Continuing	Continuing	Continuing
Wargames and Exercises - Wargames Support - OGA	MIPR	Various : Various	0.000	0.000		0.000		3.262	Nov 2023	-		3.262	Continuing	Continuing	Continuing
Wargames and Exercises - Wargames and Exercises - Combatant Commanders (COCOM)/Wargame Support	C/Various	IRES/MIPR : Jacobs / CO/TX/NH	124.250	21.380	Nov 2021	21.717	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Program, Planning and Operations - Civilian Salaries	Allot	MDA : Various	1.527	1.521	Nov 2021	1.451	Nov 2022	1.500	Nov 2023	-		1.500	Continuing	Continuing	Continuing
Program, Planning and Operations - Program Planning and Operations - Travel/TAC	Allot	DOD - MISSILE DEFENSE AGENCY (MDA) : Various	15.918	0.394	Nov 2021	0.000		0.588	Nov 2023	-		0.588	Continuing	Continuing	Continuing
Program, Planning and Operations - Program, Planning and Operations - CSS	C/CPFF	MP SOLUTIONS, LLC : Various	17.514	1.839	Nov 2021	2.205	Oct 2022	1.651	Nov 2023	-		1.651	Continuing	Continuing	Continuing
Subtotal			159.209	30.109		30.748		26.763		-		26.763	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023					
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Joint Warfighter Support						Project (Number/Name) MT03 / Joint Warfighter Support Test					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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		
Remarks N/A																	
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			159.209	30.109		30.748		26.763		-		26.763	Continuing	Continuing	N/A		
Remarks Prior year funding was captured in the MD03 budget project. Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023														
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Joint Warfighter Support										Project (Number/Name) MT03 / Joint Warfighter Support Test									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
(WG) Demonstration, Table-top Exercises & Experiments 21					◆																			
(EX) VIGILANT SHIELD 22					◆																			
(EX) GLOBAL THUNDER 21					◆																			
(EX) COMBINED FLYING TRAINING EVENT (CFTE) 22					▲																			
(EX) KEEN EDGE 22					◆	◆																		
(EX) JUNIPER COBRA 22					◆	◆																		
(EX) AIR AND MISSILE DEFENSE EXERCISE 22					◆	◆	◆																	
(WG) Missile Defense Wargame 22					◆	◆	◆																	
(WG) NIMBLE TITAN 22					◆	◆	◆	◆																
(EX) Joint Live, Virtual, and Constructive 2021/2022					◆	◆	◆	◆	◆															
(EX) EAGLE RESOLVE 22						▲																		
(EX) RESILIENT SHIELD 22						▲																		
(EX) COMBINED COMMAND POST TRAINING 22-1						▲																		
(EX) PACIFIC FURY 22						▲																		
(EX) GLOBAL LIGHTNING 22						◆	◆																	
(EX) STEADFAST ALLIANCE 22						◆	◆																	
(EX) JOINT AIR AND MISSILE DEFENSE EXERCISE SERIES 22						◆	◆	◆																
(EX) EUROPEAN TEST BED 22						◆	◆	◆																
(EX) ASTRAL KNIGHT 22								▲																
(WG) Demonstration, Table-top Exercises & Experiments 22								◆	◆	◆														
(EX) PACIFIC SENTRY 22									▲															
(EX) COMBINED COMMAND POST TRAINING 22-2									▲															
(EX) VIGILANT SHIELD 23									◆	◆														
(EX) KEEN SWORD 23									◆	◆														

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023																			
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Joint Warfighter Support										Project (Number/Name) MT03 / Joint Warfighter Support Test									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
(EX) GLOBAL RESPONSE EXERCISE 11													◆	◆															
(EX) GLOBAL THUNDER 22													◆	◆															
(EX) GLOBAL RESPONSE EXERCISE 12													◇																
COMBINED FLYING TRAINING EVENT (CFTE) 23													△																
(EX) Joint Project Optic Windmill 2023													◇	◇	◇														
(EX) AIR AND MISSILE DEFENSE EXERCISE 23													◇	◇	◇														
(WG) Demonstration, Table-top Exercises & Experiments 23													◇	◇	◇	◇													
(WG) NIMBLE TITAN 24													◇	◇	◇	◇	◇												
(EX) AUSTERE CHALLENGE 23														◇															
(EX) RESILIENT SHIELD 23														△															
(EX) COMBINED COMMAND POST TRAINING 23-1														△															
(EX) PACIFIC FURY 23														△															
(EX) GLOBAL LIGHTNING 23														◇	◇														
(EX) EUROPEAN TEST BED 23														◇	◇	◇													
(EX) JOINT AIR AND MISSILE DEFENSE EXERCISE SERIES 23														◇	◇	◇													
(WG) Missile Defense Wargame 24														◇	◇	◇	◇	◇	◇										
(EX) GLOBAL THUNDER 24														◇	◇	◇	◇												
(EX) Joint Live, Virtual, and Constructive 2023/2024														◇	◇	◇	◇	◇	◇	◇	◇								
(EX) VIGILANT SHIELD 24															◇	◇	◇	◇	◇										
(EX) EUROPEAN AIR & MISSILE DEFENSE EXERCISE 23															◇														
(EX) ASTRAL KNIGHT 23															△														
(EX) KEEN EDGE 24															◇	◇	◇	◇											
(EX) PACIFIC SENTRY 23															△														
(EX) COMBINED COMMAND POST TRAINING 23-2																△													

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023																			
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Joint Warfighter Support										Project (Number/Name) MT03 / Joint Warfighter Support Test									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
EUROPEAN AIR & MISSILE DEFENSE EXERCISE 24-1														◇															
COMBINED FLYING TRAINING EVENT (CFTE) 24														◇															
(EX) JUNIPER COBRA 24														◇	◇														
(EX) AIR AND MISSILE DEFENSE EXERCISE 24														◇	◇	◇													
(WG) Demonstration, Table-top Exercises & Experiments 24														◇	◇	◇	◇												
(EX) EAGLE RESOLVE 24														△															
(EX) RESILIENT SHIELD 24														△															
(EX) COMBINED COMMAND POST TRAINING 24-1														△															
(EX) PACIFIC FURY 24														△															
(EX) GLOBAL LIGHTNING 24														◇	◇														
(EX) EUROPEAN TEST BED 24														◇	◇	◇													
(EX) JOINT AIR AND MISSILE DEFENSE EXERCISE SERIES 24														◇	◇	◇													
(EX) ASTRAL KNIGHT 24															△														
EUROPEAN AIR & MISSILE DEFENSE EXERCISE 24-2														◇															
(EX) PACIFIC SENTRY 24																△													
(EX) COMBINED COMMAND POST TRAINING 24-2																△													
(EX) GLOBAL RESPONSE EXERCISE 13																◇													
(EX) KEEN SWORD 25																◇	◇												
COMBINED FLYING TRAINING EVENT (CFTE) 25																	△												
(EX) AIR AND MISSILE DEFENSE EXERCISE 25																◇	◇	◇											
(WG) Demonstration, Table-top Exercises & Experiments 25																◇	◇	◇	◇										
(WG) NIMBLE TITAN 26																◇	◇	◇	◇	◇	◇								
(EX) AUSTERE CHALLENGE 25																◇													
(EX) JOINT PROJECT OPTIC WINDMILL 2025																◇													

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023														
Appropriation/Budget Activity										R-1 Program Element (Number/Name)										Project (Number/Name)									
0400 / 4										PE 0603898C / Ballistic Missile Defense Joint Warfighter Support										MT03 / Joint Warfighter Support Test									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
(EX) RESILIENT SHIELD 25																													
(EX) COMBINED COMMAND POST TRAINING 25-1																													
(EX) PACIFIC FURY 25																													
(EX) GLOBAL LIGHTNING 25																													
(EX) EUROPEAN TEST BED 25																													
(EX) JOINT AIR AND MISSILE DEFENSE EXERCISE SERIES 25																													
(WG) MISSILE DEFENSE WARGAME 26																													
(EX) JOINT LIVE, VIRTUAL, AND CONSTRUCTIVE 2025/2026																													
(EX) GLOBAL THUNDER 25																													
(EX) EUROPEAN AIR & MISSILE DEFENSE EXERCISE 25																													
(EX) ASTRAL KNIGHT 25																													
(EX) PACIFIC SENTRY 25																													
(EX) COMBINED COMMAND POST TRAINING 25-2																													
(EX) VIGILANT SHIELD 25																													
(EX) VIGILANT SHIELD 26																													
(EX) KEEN EDGE 26																													
COMBINED FLYING TRAINING EVENT (CFTE) 26																													
(EX) JUNIPER COBRA 26																													
(EX) AIR AND MISSILE DEFENSE EXERCISE 26																													
(WG) Demonstration, Table-top Exercises & Experiments 26																													
(EX) COMBINED COMMAND POST TRAINING 26-1																													
(EX) EAGLE RESOLVE 26																													
(EX) PACIFIC FURY 26																													
(EX) RESILIENT SHIELD 26																													

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																														
Appropriation/Budget Activity 0400 / 4														R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Joint Warfighter Support														Project (Number/Name) MT03 / Joint Warfighter Support Test																
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028																		
(EX) GLOBAL LIGHTNING 26																								◇	◇																			
(EX) EUROPEAN TEST BED 26																										◇	◇	◇																
(EX) JOINT AIR AND MISSILE DEFENSE EXERCISE SERIES 26																											◇	◇	◇															
(EX) GLOBAL THUNDER 26																												◇	◇	◇	◇	◇												
(EX) ASTRAL KNIGHT 26																													△															
(EX) COMBINED COMMAND POST TRAINING 26-2																														△														
(EX) PACIFIC SENTRY 26																															△													
(EX) GLOBAL RESPONSE EXERCISE 14																																◇												
COMBINED FLYING TRAINING EVENT (CFTE) 27																																△												
(EX) KEEN SWORD 27																																	△											
(EX) VIGILANT SHIELD 27																																		△										
(WG) NIMBLE TITAN 28																																			◇	◇	◇	◇	◇					
EX) AIR AND MISSILE DEFENSE EXERCISE 27																																			◇	◇	◇							
(WG) Demonstration, Table-top Exercises & Experiments 27																																				◇	◇	◇	◇					
(EX) PACIFIC FURY 27																																					△							
(EX) AUSTERE CHALLENGE 27																																						△						
(EX) RESILIENT SHIELD 27																																						△						
(EX) JOINT PROJECT OPTIC WINDMILL 2027																																						◇						
(EX) GLOBAL LIGHTNING 27																																						△						
(EX) EUROPEAN TEST BED 27																																						◇	◇	◇				
(WG) MISSILE DEFENSE WARGAME 28																																							◇	◇	◇	◇	◇	◇
(EX) JOINT AIR AND MISSILE DEFENSE EXERCISE SERIES 27																																							◇	◇	◇	◇	◇	◇
(EX) Joint Live, Virtual, and Constructive 2027/2028																																							◇	◇	◇	◇	◇	◇
(EX) ASTRAL KNIGHT 27																																								△				

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023														
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Joint Warfighter Support										Project (Number/Name) MT03 / Joint Warfighter Support Test									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
(EX) GLOBAL THUNDER 27																		△						
(EX) EUROPEAN AIR & MISSILE DEFENSE EXERCISE 27																		△						
(EX) PACIFIC SENTRY 27																		◇						
(EX) COMBINED COMMAND POST TRAINING 27-1																		◇						
(EX) COMBINED COMMAND POST TRAINING 27-2																		◇						
COMBINED FLYING TRAINING EVENT (CFTE) 28																			◇					
(EX) VIGILANT SHIELD 28																			◇					
(EX) AIR AND MISSILE DEFENSE EXERCISE 30-2																			◇	◇				
(WG) Demonstration, Table-top Exercises & Experiments 28																			◇	◇				
(EX) RESILIENT SHIELD 28																			◇					
(EX) KEEN EDGE 28																			◇					
(EX) GLOBAL LIGHTNING 28																			△					
(EX) EUROPEAN TEST BED 28																			◇	◇				
(EX) EAGLE RESOLVE 28																				◇				
(EX) JUNIPER COBRA 28																				◇				
(EX) ASTRAL KNIGHT 28																				△				
(EX) GLOBAL THUNDER 28																				◇				
(EX) EUROPEAN AIR & MISSILE DEFENSE EXERCISE 28																				◇				
(EX) COMBINED COMMAND POST TRAINING 28-1																				◇				

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
(WG) Demonstration, Table-top Exercises & Experiments 21	1	2022	1	2022
(EX) VIGILANT SHIELD 22	1	2022	1	2022
(EX) GLOBAL THUNDER 21	1	2022	1	2022
(EX) COMBINED FLYING TRAINING EVENT (CFTE) 22	1	2022	1	2022
(EX) KEEN EDGE 22	1	2022	2	2022
(EX) JUNIPER COBRA 22	1	2022	2	2022
(EX) AIR AND MISSILE DEFENSE EXERCISE 22	1	2022	3	2022
(WG) Missile Defense Wargame 22	1	2022	3	2022
(WG) NIMBLE TITAN 22	1	2022	4	2022
(EX) Joint Live, Virtual, and Constructive 2021/2022	1	2022	1	2023
(EX) EAGLE RESOLVE 22	2	2022	2	2022
(EX) RESILIENT SHIELD 22	2	2022	2	2022
(EX) COMBINED COMMAND POST TRAINING 22-1	2	2022	2	2022
(EX) PACIFIC FURY 22	2	2022	2	2022
(EX) GLOBAL LIGHTNING 22	2	2022	3	2022
(EX) STEADFAST ALLIANCE 22	2	2022	3	2022
(EX) JOINT AIR AND MISSILE DEFENSE EXERCISE SERIES 22	2	2022	4	2022
(EX) EUROPEAN TEST BED 22	2	2022	4	2022
(EX) ASTRAL KNIGHT 22	3	2022	3	2022
(WG) Demonstration, Table-top Exercises & Experiments 22	3	2022	1	2023
(EX) PACIFIC SENTRY 22	4	2022	4	2022
(EX) COMBINED COMMAND POST TRAINING 22-2	4	2022	4	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>		Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>	
		Start		End	
Events	Quarter	Year	Quarter	Year	
(EX) VIGILANT SHIELD 23	4	2022	1	2023	
(EX) KEEN SWORD 23	4	2022	1	2023	
(EX) GLOBAL RESPONSE EXERCISE 11	4	2022	1	2023	
(EX) GLOBAL THUNDER 22	4	2022	1	2023	
(EX) GLOBAL RESPONSE EXERCISE 12	1	2023	1	2023	
COMBINED FLYING TRAINING EVENT (CFTE) 23	1	2023	1	2023	
(EX) Joint Project Optic Windmill 2023	1	2023	3	2023	
(EX) AIR AND MISSILE DEFENSE EXERCISE 23	1	2023	3	2023	
(WG) Demonstration, Table-top Exercises & Experiments 23	1	2023	4	2023	
(WG) NIMBLE TITAN 24	1	2023	1	2024	
(EX) AUSTERE CHALLENGE 23	2	2023	2	2023	
(EX) RESILIENT SHIELD 23	2	2023	2	2023	
(EX) COMBINED COMMAND POST TRAINING 23-1	2	2023	2	2023	
(EX) PACIFIC FURY 23	2	2023	2	2023	
(EX) GLOBAL LIGHTNING 23	2	2023	3	2023	
(EX) EUROPEAN TEST BED 23	2	2023	4	2023	
(EX) JOINT AIR AND MISSILE DEFENSE EXERCISE SERIES 23	2	2023	4	2023	
(WG) Missile Defense Wargame 24	2	2023	3	2024	
(EX) GLOBAL THUNDER 24	2	2023	1	2024	
(EX) Joint Live, Virtual, and Constructive 2023/2024	2	2023	1	2025	
(EX) VIGILANT SHIELD 24	3	2023	3	2024	
(EX) EUROPEAN AIR & MISSILE DEFENSE EXERCISE 23	3	2023	3	2023	
(EX) ASTRAL KNIGHT 23	3	2023	3	2023	
(EX) KEEN EDGE 24	3	2023	2	2024	
(EX) PACIFIC SENTRY 23	3	2023	3	2023	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023	
Appropriation/Budget Activity	R-1 Program Element (Number/Name)		Project (Number/Name)	
0400 / 4	PE 0603898C / Ballistic Missile Defense Joint Warfighter Support		MT03 / Joint Warfighter Support Test	
Events	Start		End	
	Quarter	Year	Quarter	Year
(EX) COMBINED COMMAND POST TRAINING 23-2	4	2023	4	2023
EUROPEAN AIR & MISSILE DEFENSE EXERCISE 24-1	1	2024	1	2024
COMBINED FLYING TRAINING EVENT (CFTE) 24	1	2024	1	2024
(EX) JUNIPER COBRA 24	1	2024	2	2024
(EX) AIR AND MISSILE DEFENSE EXERCISE 24	1	2024	3	2024
(WG) Demonstration, Table-top Exercises & Experiments 24	1	2024	4	2024
(EX) EAGLE RESOLVE 24	2	2024	2	2024
(EX) RESILIENT SHIELD 24	2	2024	2	2024
(EX) COMBINED COMMAND POST TRAINING 24-1	2	2024	2	2024
(EX) PACIFIC FURY 24	2	2024	2	2024
(EX) GLOBAL LIGHTNING 24	2	2024	3	2024
(EX) EUROPEAN TEST BED 24	2	2024	4	2024
(EX) JOINT AIR AND MISSILE DEFENSE EXERCISE SERIES 24	2	2024	4	2024
(EX) ASTRAL KNIGHT 24	3	2024	3	2024
EUROPEAN AIR & MISSILE DEFENSE EXERCISE 24-2	3	2024	3	2024
(EX) PACIFIC SENTRY 24	4	2024	4	2024
(EX) COMBINED COMMAND POST TRAINING 24-2	4	2024	4	2024
(EX) GLOBAL RESPONSE EXERCISE 13	4	2024	4	2024
(EX) KEEN SWORD 25	4	2024	1	2025
COMBINED FLYING TRAINING EVENT (CFTE) 25	1	2025	1	2025
(EX) AIR AND MISSILE DEFENSE EXERCISE 25	1	2025	3	2025
(WG) Demonstration, Table-top Exercises & Experiments 25	1	2025	4	2025
(WG) NIMBLE TITAN 26	1	2025	3	2026
(EX) AUSTERE CHALLENGE 25	2	2025	2	2025
(EX) JOINT PROJECT OPTIC WINDMILL 2025	2	2025	2	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>		Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>	
		Start		End	
Events	Quarter	Year	Quarter	Year	
(EX) RESILIENT SHIELD 25	2	2025	2	2025	
(EX) COMBINED COMMAND POST TRAINING 25-1	2	2025	2	2025	
(EX) PACIFIC FURY 25	2	2025	2	2025	
(EX) GLOBAL LIGHTNING 25	2	2025	3	2025	
(EX) EUROPEAN TEST BED 25	2	2025	4	2025	
(EX) JOINT AIR AND MISSILE DEFENSE EXERCISE SERIES 25	2	2025	4	2025	
(WG) MISSILE DEFENSE WARGAME 26	2	2025	3	2026	
(EX) JOINT LIVE, VIRTUAL, AND CONSTRUCTIVE 2025/2026	2	2025	1	2027	
(EX) GLOBAL THUNDER 25	3	2025	3	2026	
(EX) EUROPEAN AIR & MISSILE DEFENSE EXERCISE 25	3	2025	3	2025	
(EX) ASTRAL KNIGHT 25	3	2025	3	2025	
(EX) PACIFIC SENTRY 25	3	2025	3	2025	
(EX) COMBINED COMMAND POST TRAINING 25-2	4	2025	4	2025	
(EX) VIGILANT SHIELD 25	4	2025	4	2025	
(EX) VIGILANT SHIELD 26	4	2025	1	2026	
(EX) KEEN EDGE 26	4	2025	2	2026	
COMBINED FLYING TRAINING EVENT (CFTE) 26	1	2026	1	2026	
(EX) JUNIPER COBRA 26	1	2026	2	2026	
(EX) AIR AND MISSILE DEFENSE EXERCISE 26	1	2026	3	2026	
(WG) Demonstration, Table-top Exercises & Experiments 26	1	2026	4	2026	
(EX) COMBINED COMMAND POST TRAINING 26-1	2	2026	2	2026	
(EX) EAGLE RESOLVE 26	2	2026	2	2026	
(EX) PACIFIC FURY 26	2	2026	2	2026	
(EX) RESILIENT SHIELD 26	2	2026	2	2026	
(EX) GLOBAL LIGHTNING 26	2	2026	3	2026	

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>		Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>	
		Start		End	
Events	Quarter	Year	Quarter	Year	
(EX) EUROPEAN TEST BED 26	2	2026	4	2026	
(EX) JOINT AIR AND MISSILE DEFENSE EXERCISE SERIES 26	2	2026	4	2026	
(EX) GLOBAL THUNDER 26	3	2026	3	2027	
(EX) ASTRAL KNIGHT 26	3	2026	3	2026	
(EX) COMBINED COMMAND POST TRAINING 26-2	4	2026	4	2026	
(EX) PACIFIC SENTRY 26	4	2026	4	2026	
(EX) GLOBAL RESPONSE EXERCISE 14	1	2027	1	2027	
COMBINED FLYING TRAINING EVENT (CFTE) 27	1	2027	1	2027	
(EX) KEEN SWORD 27	1	2027	1	2027	
(EX) VIGILANT SHIELD 27	1	2027	1	2027	
(WG) NIMBLE TITAN 28	1	2027	1	2028	
EX) AIR AND MISSILE DEFENSE EXERCISE 27	1	2027	3	2027	
(WG) Demonstration, Table-top Exercises & Experiments 27	1	2027	4	2027	
(EX) PACIFIC FURY 27	2	2027	2	2027	
(EX) AUSTERE CHALLENGE 27	2	2027	2	2027	
(EX) RESILIENT SHIELD 27	2	2027	2	2027	
(EX) JOINT PROJECT OPTIC WINDMILL 2027	2	2027	2	2027	
(EX) GLOBAL LIGHTNING 27	2	2027	2	2027	
(EX) EUROPEAN TEST BED 27	2	2027	4	2027	
(WG) MISSILE DEFENSE WARGAME 28	2	2027	3	2028	
(EX) JOINT AIR AND MISSILE DEFENSE EXERCISE SERIES 27	2	2027	4	2028	
(EX) Joint Live, Virtual, and Constructive 2027/2028	2	2027	1	2029	
(EX) ASTRAL KNIGHT 27	3	2027	3	2027	
(EX) GLOBAL THUNDER 27	3	2027	3	2027	
(EX) EUROPEAN AIR & MISSILE DEFENSE EXERCISE 27	3	2027	3	2027	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>		Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>	
		Start		End	
Events	Quarter	Year	Quarter	Year	
(EX) PACIFIC SENTRY 27	3	2027	3	2027	
(EX) COMBINED COMMAND POST TRAINING 27-1	4	2027	4	2027	
(EX) COMBINED COMMAND POST TRAINING 27-2	4	2027	4	2027	
COMBINED FLYING TRAINING EVENT (CFTE) 28	1	2028	1	2028	
(EX) VIGILANT SHIELD 28	1	2028	1	2028	
(EX) AIR AND MISSILE DEFENSE EXERCISE 30-2	1	2028	3	2028	
(WG) Demonstration, Table-top Exercises & Experiments 28	1	2028	4	2028	
(EX) RESILIENT SHIELD 28	2	2028	2	2028	
(EX) KEEN EDGE 28	2	2028	2	2028	
(EX) GLOBAL LIGHTNING 28	2	2028	2	2028	
(EX) EUROPEAN TEST BED 28	2	2028	4	2028	
(EX) EAGLE RESOLVE 28	3	2028	3	2028	
(EX) JUNIPER COBRA 28	3	2028	3	2028	
(EX) ASTRAL KNIGHT 28	3	2028	3	2028	
(EX) GLOBAL THUNDER 28	3	2028	3	2028	
(EX) EUROPEAN AIR & MISSILE DEFENSE EXERCISE 28	3	2028	3	2028	
(EX) COMBINED COMMAND POST TRAINING 28-1	4	2028	4	2028	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Joint Warfighter Support				Project (Number/Name) MC03 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC03: Cyber Operations	0.448	0.151	0.159	0.164	-	0.164	0.168	0.171	0.174	0.177	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note N/A												
A. Mission Description and Budget Item Justification This program verifies and validates that cybersecurity and/or cybersecurity-enabled products (firewalls, data/network encryption devices, routers, Intrusion Detection Systems, etc.) used within the Missile Defense Agency (MDA) infrastructure have a current and Evaluated Assurance Level (EAL) certification and rating. They assure that validated information technology (IT) products are listed on the Department of Defense (DoD) Approved Products List Integrated Tracking System (APLITS). There is an additional requirement to routinely identify findings and prepare a report with recommendations. This support is required in the IT product evaluation. Activities in the Project are necessary to comply with the Federal Information Systems Modernization Act of 2014.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024	
Title: Strategic Warfighter Integration Software Assurance Support Articles: Description: Perform manual and automated software code analysis, using government furnished equipment tools (e.g. Fortify 360), to detect false positives, weaknesses, and vulnerabilities. - Verify and validate cybersecurity and/or cybersecurity-enabled products (firewalls, data/network encryptors, routers, Intrusion Detection Systems, etc.) used within the MDA infrastructure have a current and EAL certification and rating. Validate IT products are listed on the DoD APLITS. - Participate in meetings with customers to review software analysis findings and proposed courses of action for remediation. - Prepare a comprehensive report detailing the weaknesses and vulnerabilities found. Document the references to files and line numbers. - Maintain a record of all software code analysis documentation and organized in accordance with Government policy. Specific and/or unique accomplishments to each FY are as follows: FY 2023 Plans: - SEE ABOVE FY 2024 Plans:									0.151	0.159	0.164	
									-	-	-	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Jo int Warfighter Support</i>	Project (Number/Name) MC03 / <i>Cyber Operations</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
- SEE ABOVE			
FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals		0.151	0.159
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy The Decisive Analytics Corp. provides IT labor for verification and validation of cybersecurity and/or cybersecurity-enabled products.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Joint Warfighter Support						Project (Number/Name) MC03 / Cyber Operations			
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Strategic Warfighter Integration Software Assurance Support - DW Cyber Support (ICVA)	C/CPFF	Decisive Analytics Corp. : CO	0.448	0.151	Jan 2022	0.159	Jan 2023	0.164	Jan 2024	-		0.164	Continuing	Continuing	Continuing
Subtotal			0.448	0.151		0.159		0.164		-		0.164	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.448	0.151		0.159		0.164		-		0.164	Continuing	Continuing	N/A
Remarks Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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MC03 Cyber Operations										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Jo int Warfighter Support	Project (Number/Name) MC03 / Cyber Operations	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC03 Cyber Operations	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Jo int Warfighter Support				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program-Wide Support	20.769	1.959	1.825	1.715	-	1.715	1.769	2.038	2.091	2.344	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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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)

Title: Program Wide Support		FY 2022	FY 2023	FY 2024
Articles:		1.959	1.825	1.715
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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		-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p><i>FY 2023 Plans:</i> - SEE ABOVE</p> <p><i>FY 2024 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> N/A</p>			
Accomplishments/Planned Programs Subtotals		1.959	1.825
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Joint Warfighter Support				Project (Number/Name) MD40 / Program-Wide Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	MDA : Multi: AK,AL, CA, CO, VA	7.630	1.391	Oct 2021	0.000		0.000		-		0.000	0.000	9.021	0.000
Program Wide Support - Agency Operations and Support Services	MIPR	DOD - DEFENSE ACQUISITION UNIVERSITY (DAU) : AL, CO, VA	10.186	0.495	May 2022	1.825	Jan 2023	1.587	Jan 2024	-		1.587	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (Reqn)	Reqn	Various : Multi: AK, AL, CA, CO, VA	1.496	0.000		0.000		0.000		-		0.000	0.000	1.496	0.000
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various: : Various	1.457	0.000		0.000		0.000		-		0.000	0.000	1.457	0.000
Subtotal			20.769	1.886		1.825		1.587		-		1.587	Continuing	Continuing	N/A
Remarks N/A															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations Management	C/CPFF	L.C. Wright, Inc. : AL	0.000	0.073	Dec 2021	0.000		0.128	Dec 2023	-		0.128	Continuing	Continuing	Continuing
Subtotal			0.000	0.073		0.000		0.128		-		0.128	Continuing	Continuing	N/A
Remarks N/A															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency											Date: March 2023			
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Jo int Warfighter Support					Project (Number/Name) MD40 / Program-Wide Support				
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	20.769	1.959		1.825		1.715		-		1.715	Continuing	Continuing	N/A	

Remarks

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

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / Ballistic Missile Defense Jo int Warfighter Support	Project (Number/Name) MD40 / Program-Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	530.882	44.188	49.367	50.549	-	50.549	56.624	58.020	59.193	60.615	Continuing	Continuing
MD22: Missile Defense Integration and Operations Center (MDIOC)	496.857	41.467	46.926	48.081	-	48.081	53.897	54.973	56.074	57.196	Continuing	Continuing
MC22: Cyber Operations	4.450	0.608	0.648	0.671	-	0.671	0.689	0.703	0.717	0.731	Continuing	Continuing
MD40: Program-Wide Support	29.575	2.113	1.793	1.797	-	1.797	2.038	2.344	2.402	2.688	Continuing	Continuing
Program MDAP/MAIS Code: 362												
Note N/A												
A. Mission Description and Budget Item Justification												
<p>The Missile Defense Integration and Operations Center (MDIOC) is the Missile Defense Agency's (MDA) field operating activity in Colorado Springs, Colorado. The MDIOC provides necessary infrastructure and support services through a mission execution platform for MDA elements/components and designated Combatant Commanders' Missile Defense System operations executing missions at the MDIOC. The Integration Center is responsible for providing a single, integrated set of skilled personnel matrixed from across MDA to manage this mission. The MDIOC mission facilities consist of a highly secure research and development complex and a consolidated support facility located at Schriever Space Force Base, just east of North American Aerospace Defense Command, United States Northern Command and United States Space Command. The MDIOC provides mission essential system technical capabilities and subject matter expertise in a dedicated and adaptable environment that enables developers, testers, and operators to evolve, assess and deliver the capabilities for layered missile defense execution for homeland defense and theater/regional support. The MDIOC interfaces with the Information Technology and Cybersecurity Enterprise to provide high availability access to worldwide secure communications, network health and status monitoring, mission critical restoral capability, and technical expertise for all MDA directed activities and events. The MDIOC functions as the mission control for Missile Defense System distributed ground tests and system wide flight tests enabling the mission and test directors to control both main and associated test operations using secure voice, test, and mission network hubs from the MDIOC. The MDIOC also functions as the only system-level integration and interoperability mission execution platform for Missile Defense System fire control; and it provides the physical interface between the developers and the Combatant Command (CCMD) warfighters.</p>												
<p>MDIOC mission facilities contribute to the Missile Defense System by directly supporting the concept of Concurrent Test, Training, and Operations by providing mission assurance, engineering integration, resource scheduling, and configuration management for MDA and Missile Defense System-level test, training, and operational mission execution.</p>												
<p>MDIOC Major Program Goals:</p>												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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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 0603904C <i>I Missile Defense Integration and Operations Center (MDIOC)</i>
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- Provide the capabilities and services necessary to support mission assurance, engineering integration, resource scheduling for ground and flight tests, and configuration management of on-site systems and services
- Ensure around the clock support and restoral of designated Missile Defense System operational systems and services
- Maintain interface with designated CCMD missile defense activities; host/support the headquarters and operations center for the United States Strategic Command Joint Functional Component Command - Integrated Missile Defense
- Maintain and improve the reliability, availability, and maintainability of MDIOC mission critical systems

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	52.403	49.367	51.744	-	51.744
Current President's Budget	44.188	49.367	50.549	-	50.549
Total Adjustments	-8.215	0.000	-1.195	-	-1.195
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-1.205	0.000			
• Other Adjustment	-7.010	0.000	-1.195	-	-1.195

Change Summary Explanation

FY 2024 decrease reflects a reduction in Infrastructure Systems Repair, Sustainment and Critical Upgrades.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>				Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	496.857	41.467	46.926	48.081	-	48.081	53.897	54.973	56.074	57.196	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

The Missile Defense Integration and Operations Center (MDIOC) sustains and operates a 24 hours a day, 7 days a week, 365 days a year mission complex for research, development, testing, training, and operations for Missile Defense System activities. The MDIOC supports the Ground-based Midcourse Defense Mission Control Center Facility, as well as the Command, Control, Battle Management, and Communications (C2BMC) Integration and Test Centers and the C2BMC Experimentation Laboratories. It provides infrastructure support for the Space Sensors Missile Defense Space Center; and the Targets and Countermeasures Mission Control Center - Targets. The MDIOC also provides developmental support to the Enterprise Sensors Laboratory composed of a common satellite ground station and sensor netting test bed for designated Missile Defense System elements. The MDIOC supports Missile Defense System test events based on the Integrated Master Test Plan. It supports Missile Defense System Critical Engagement Conditions testing and analysis through the operation of the Test Execution Control node for distributed Missile Defense System ground tests. During system flight tests, the MDIOC provides infrastructure (power; Heating, Ventilation and Air Conditioning; and communications) support to the Flight Test Director and crew, and ensures the protection of facility and test assets throughout the test window. Further, the MDIOC provides the facilities that support operations of the Missile Defense Element, manned by the U.S. Army 100th Missile Defense Brigade, the United States Northern Command, C2BMC Command and Control Center, and the United States Strategic Command's (USSTRATCOM's) Joint Functional Component Command-Integrated Missile Defense. In addition, the MDIOC supports the Missile Defense Agency (MDA) Operations Support Center, which provides situational awareness on the health and status of the end-to-end Missile Defense System. The MDIOC hosts Missile Defense System wargames and exercises in support of the warfighter, and delivers the requisite infrastructure to integrate the modeling and simulation assets that form system-level constructive simulations for full-envelope Missile Defense System performance assessments, with surrogate capability for Missile Defense System ground tests. The MDIOC maintains a technical repository of Missile Defense System Implementation Architectures for real-time operations and configuration control; provides state change management and asset management technical support for the Missile Defense System; and provides the technical environment for Missile Defense System Watch Officers, Safety Officers, and Information Assurance Officers to perform their assigned duties. The MDIOC also supports the operations of the Joint Early Warning Laboratory, which provides USSTRATCOM with quick response analyses of real-world launches, and rapid anomaly identification and resolution.

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

	FY 2022	FY 2023	FY 2024
Title: Infrastructure Systems and Support	14.296	17.844	18.244
Articles:	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>		Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
<p>Description: RECURRING:</p> <p>MDIOC Communications and Special Purpose Processing Node (SPPN):</p> <ul style="list-style-type: none"> - Maintain a Department of Defense (DoD) compliant SPPN capable of meeting the unique network and data center services required to develop and deploy a layered Missile Defense System to defend the United States - Provide distinctive specifications and provisioning requirements associated with the MDA Research, Development, Test and Evaluation (RDT&E) Mission - Provide capabilities that dynamically interconnect and integrate multiple RDT&E systems to large data sets, and enable collaboration in near real-time with National Research Laboratories and Test Ranges; and Defense Industrial Base industry partners throughout the Missile Defense System acquisition lifecycle - Sustain the SPPN infrastructure with routers, switches, firewalls, and intrusion detection systems that provide information technology (IT) support to over 10,500 MDA classified/unclassified users worldwide - Provide network operations and network monitoring; development of detailed solutions, designs, and plans; Disaster Recovery and Continuity of Operations rehearsals; internet access management; and web filtering - Sustain core communications distribution services across the MDA Enterprise - Plan, engineer, and implement sustainment projects for general IT services and business systems consistent with the IT architecture roadmap - Acquire and distribute mission critical unclassified and secure communication capability to resident MDA elements/components and Missile Defense System and Warfighter operational elements - Provide computer hosting of specified threat models and support the integration of other threat tools as required <p>End User Support:</p> <ul style="list-style-type: none"> - Sustain End User core service support via an Integrated Service Desk 24 hours a day, 7 days a week, 365 days a year for mission event/test and core information systems for unclassified and classified users - Monitor networks for user compliance with DoD policies and report incidents - Maintain Printing and Copy Services - Sustain email services (Exchange servers, BlackBerry Enterprise Services servers and archiving storage area networks) - Sustain file services (file servers and storage area networks) - Maintain Directory Services (Active Directory and domain controller servers) - Maintain Authentication services (Public Key Infrastructure/Common Access Card) - Maintain current hardware and software licenses for IT operational systems - Maintain IT life-cycle asset management of end user devices (desktops, laptops, monitors, printers, thin clients, and mobile devices) 					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)	Project (Number/Name) MD22 / Missile Defense Integration and Operations Center (MDIOC)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
<p>Hardware and Software Asset Management:</p> <p>- Manage government property and IT hardware and software in accordance with the Federal Acquisition Regulations (FAR)/ DoD FAR Supplements to include accountability, reporting, warehouse management, asset transportation and excess asset management</p> <p>- Maintain an inventory of IT hardware and software assets connected or used in the Unclassified Local Area Network, Classified Local Area Network, Secret Internet Protocol Router Network, and Top Secret/Special Compartmented Information networks</p> <p>- Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <p>- Provide cradle to grave event management for MDIOC support Concurrent Test, Training, and Operations (CTTO) events</p> <p>- Provide a Mission Planning Element to oversee the event support life cycle provide by the MDIOC event management platform</p> <p>- Ensure the fulfillment of technical, personnel, facility and cybersecurity requirements</p> <p>- Coordination of Depot level support to MDIOC Defense Red Switch Network Command and Control Switching Systems</p> <p>- Provide Cybersecurity to ensure the protection of MDIOC networks, computers, programs and data from attack, damage or unauthorized access</p> <p>FY 2024 Plans:</p> <p>- SEE ABOVE</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>N/A</p>					
<p>Title: Facilities and Maintenance</p> <p align="right">Articles:</p> <p>Description: RECURRING: Host Tenant Support (Electrical, Gas, Sewer, Water, Steam, Chilled Water, Waste Water, Landscaping, Refuse Removal, and Communications Support):</p> <p>- Procure utility services through Space Base Delta 1 (Host Base)</p> <p>- Sustain utility infrastructure and delivery systems</p> <p>Environmental, Safety and Occupational Health:</p> <p>- Maintain and update the program accident prevention plan</p> <p>- Provide required industrial safety training to facility services personnel</p> <p>- Procure and distribute personal protection equipment for contracted activities</p>			10.045 -	13.912 -	13.620 -

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> - Ensure compliance with Hazardous Waste, Hazardous Material Recycling, and National Environmental Policy Act programs - Conduct recurring safety and environmental audits <p>Facilities Operations and Sustainment:</p> <ul style="list-style-type: none"> - Provide 24 hours a day, 7 days a week, 365 days a year, facility maintenance break/fix response for all facility systems (electrical; Heating, Ventilation, and Air Conditioning; plumbing; locksmith) with a response time of 15 minutes after normal duty hours - Conduct preventative maintenance inspections for all building systems <p>Facilities Engineering:</p> <ul style="list-style-type: none"> - Conduct Management Process Facility Installation Standard Audits - Provide risk management analysis and mitigation plans - Maintain infrastructure drawings and configuration management databases - Develop and document facility long range planning programming - Provide consulting services, preliminary designs and engineering rough order of magnitude estimates for required infrastructure buildout changes <p>MDIOC Operating Expenses:</p> <ul style="list-style-type: none"> - Lease General Services Administration vehicles and a commercial warehouse <p>Facility Services:</p> <ul style="list-style-type: none"> - Provide custodial services for over 675,000 square feet of floor space in Buildings 720 and 730 - Provide Copy Center and Shuttle Services for over 2,000 personnel - Provide in and out of civilian and contractor support services personnel - Conduct personnel moves to include cubicle and workstation setup, teardown, and reconfiguration <p>- Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE <p>FY 2024 Plans:</p>			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
- SEE ABOVE			
FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Title: Engineering and Event Services		8.793	0.000
		-	-
Articles:			
Description: Provide Mission Assurance by ensuring the successful execution of CTTO activities at the MDIOC facility, including:			
<ul style="list-style-type: none"> - Ensure independent verification, and coordinate customer validation of all activities, work products and requirements fulfilled by MDIOC Engineering - Provide Risk Management by identifying, assessing, and prioritizing risks. Coordinate resources to minimize, monitor and control the probability and impact of events. Develop strategies to manage risk, including avoidance, reduction, transfer and retention - Ensure Coordination and Integration through a proactive approach of sharing critical information necessary for the successful conduct of CTTO activities in a dynamic environment - Provide Systems Engineering oversight through the management and execution of the MDIOC Engineering Review Board (ERB) - Provide governance and training to stakeholders, enforce policy, establish and maintain the ERB for the vetting and implementation of requirements - Ensure Configuration Management so that CTTO events are not disrupted by multiple competing activities - Maintain the Technical Baseline to establish a common reference, and implement a formalized process that provides stability across the MDIOC - Provide Change Management to the MDIOC Technical Baseline and MDIOC physical infrastructure. Research how any changes may affect CTTO activities, and determine when change is least likely to impact key functionality. Ensure all changes, across the technical baseline, are clearly recorded and identified on a near-real-time basis - Provide effective requirements management by documenting decisions and information generated during requirements development in conjunction with the design solution processes - Ensure Organizational Integration by establishing and enforcing seamless integration across the MDIOC. Provide a repeatable process for information sharing and coordination - Provide Contract Program Management including business, finance, contract administration and management. Identify and manage cross-project dependencies. Conduct activities within established cost, schedule, and performance parameters 			
- Specific and/or unique accomplishments to each FY are as follows:			
FY 2023 Plans:			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
This accomplishment was renamed and FY 2023 funding moved to Mission Engineering and Program Integration.					
FY 2024 Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: N/A					
Title: Operations and Sustainment			2.821	3.151	3.030
Articles:			-	-	-
Description: RECURRING: - Includes Civilian and Contract Service Support for operations and sustainment of all MDIOC activities contributing to the mission execution platform - Provide quality event planning, coordination, logistics, security access and host support for all MDIOC events and visitors - Deliver integrated service coordination for all MDIOC event and protocol support - Training and Travel - Specific and/or unique accomplishments to each FY are as follows:					
FY 2023 Plans: - SEE ABOVE					
FY 2024 Plans: - SEE ABOVE					
FY 2023 to FY 2024 Increase/Decrease Statement: N/A					
Title: Infrastructure Systems Repair, Sustainment, and Critical Upgrades			5.512	4.876	4.109
Articles:			-	-	-
Description: RECURRING: - Heating, Ventilation, and Air Conditioning (Air Handlers) end-of-life component replacement and capacity upgrade to improve mission assurance for critical mission areas within the MDIOC facility - Annual Fire Suppression System Reviews - Specific and/or unique accomplishments to each FY are as follows:					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)	Project (Number/Name) MD22 / Missile Defense Integration and Operations Center (MDIOC)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
FY 2023 Plans: - Conduct Fire Suppression System Upgrades (4 Quads) - Conduct Technical Utility Service (TUS) Switchgear replacement FY 2024 Plans: - Decrease from FY 2023 to FY 2024 reflects a reduction in funding and the requirement to replace of one Heating, Ventilation, and Air Conditioning (Air Handlers). FY 2023 to FY 2024 Increase/Decrease Statement: N/A					
Title: Facilities Mission Engineering and Program Integration Articles: Description: RECURRING: - Provide Mission Assurance by ensuring the successful execution of CTTO activities at the MDIOC facility - Ensure independent verification, and coordinate customer validation of all activities, work products and requirements fulfilled by MDIOC Engineering - Provide Risk Management by identifying, assessing, and prioritizing risks. Coordinate resources to minimize, monitor and control the probability and impact of events. Develop strategies to manage threats, including avoidance, reduction, transfer and retention - Ensure Coordination and Integration through a proactive approach of sharing critical information necessary for the successful conduct of CTTO activities in a dynamic environment - Provide Systems Engineering through the management and execution of the MDIOC ERB - Provide governance and training to stakeholders, enforce policy, establish and maintain the ERB for the vetting and implementation of requirements - Ensure Configuration Management so that CTTO events are not disrupted by multiple competing activities - Maintain the Technical Baseline to establish a common reference, and implement a formalized process that provides stability across the MDIOC - Provide Change Management to the MDIOC Technical Baseline and MDIOC physical infrastructure. Research how any changes may affect CTTO activities, and determine when change is least likely to impact key functionality. Ensure all changes, across the technical baseline, are clearly recorded and identified on a near-real-time basis - Provide effective requirements management by documenting decisions and information generated during requirements development in conjunction with the design solution processes - Ensure Organizational Integration by establishing and enforcing seamless integration across the MDIOC. Provide a repeatable process for information sharing and coordination			0.000 -	7.143 -	9.078 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency									Date: March 2023		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)				Project (Number/Name) MD22 / Missile Defense Integration and Operations Center (MDIOC)			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024
<div>- Provide Contract Program Management including business, finance, contract administration and management. Identify and manage cross-project dependencies. Conduct activities within established cost, schedule, and performance parameters</div> <div>- Specific and/or unique accomplishments to each FY are as follows:</div> <div>FY 2023 Plans: - SEE ABOVE</div> <div>FY 2024 Plans: - Provide oversight, configuration management and risk assessment for the infrastructure drawings, long range planning and installation standard audits.</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides for increased risk assessment and management of the MDIOC infrastructure drawings, long range planning and installation standard audits to ensure prioritization of the end-of-life, end-of-service components across the MDIOC Facility.</div>											
Accomplishments/Planned Programs Subtotals									41.467	46.926	48.081
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603881C: Ballistic Missile Defense Terminal Defense Segment	209.004	195.216	220.311	-	220.311	239.705	334.977	384.992	292.629	Continuing	Continuing
• 0603882C: Ballistic Missile Defense Midcourse Defense Segment	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing
• 0603890C: BMD Enabling Programs	616.800	588.847	597.720	-	597.720	620.823	639.398	648.954	650.432	Continuing	Continuing
• 0603892C: AEGIS BMD	628.014	595.572	693.727	-	693.727	639.678	706.974	699.611	733.909	Continuing	Continuing
• 0603896C: Ballistic Missile Defense Command and Control, Battle Management & Communication	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing
• 0603898C: Ballistic Missile Defense Joint Warfighter Support	50.261	50.269	48.248	-	48.248	49.164	50.445	51.542	52.859	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency								Date: March 2023			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>				Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>			

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603914C: <i>Ballistic Missile Defense Test</i>	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Integrated Research and Development for Enterprise Solutions (IRES) Contract is the major performing integrated contract. The acquisition strategy for MDIOC mission execution is to employ a contract to perform designated integration and sustainment tasks to conduct Missile Defense System RDT&E. The MDIOC is operated by missile defense subject matter experts composed of government, military, civilian personnel, MDIOC Contract Support Services, and major defense contractors.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>						Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Infrastructure Systems and Support - Infrastructure Systems and Support - Defense Red Switch Network	MIPR	DOD - USAF - AIR FORCE LIFE CYCLE MANAGEMENT CENTER (AFLCMC) : CO	0.000	0.000		0.417	Nov 2022	0.454	Nov 2023	-		0.454	Continuing	Continuing	Continuing
Infrastructure Systems and Support - Infrastructure Systems and Support - Infrastructure Systems and Support	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	190.805	0.000		17.427	Dec 2022	8.836	Dec 2023	-		8.836	Continuing	Continuing	Continuing
Infrastructure Systems and Support - Infrastructure Systems and Support - Infrastructure Systems and Support IRES	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	0.000	0.000		0.000		7.220	Dec 2023	-		7.220	Continuing	Continuing	Continuing
Infrastructure Systems and Support - Infrastructure Systems and Support - Infrastructure Systems and Support RECS	C/CPAF	NETWORK MANAGEMENT RESOURCES, INC. : VARIOUS	0.000	0.000		0.000		1.734	Apr 2024	-		1.734	Continuing	Continuing	Continuing
Infrastructure Systems and Support - Infrastructure Systems and Support - Network Infrastructure Systems/Support	C/CPIF	MDIOC/Jacobs Technology Inc. : Colorado Springs, CO	37.987	14.296	Dec 2021	0.000		0.000		-		0.000	0.000	52.283	0.000
Facilities and Maintenance - DRSN, GSA, Drivers, Mailroom	Various	Various : CO	1.033	0.953	Nov 2021	0.495	Nov 2022	0.722	Nov 2023	-		0.722	Continuing	Continuing	Continuing
Facilities and Maintenance - Facilities and Maintenance - MDIOC Custodial	C/FFP	HUNTSVILLE REHABILITATION FOUNDATION : CO	10.766	2.112	Nov 2021	2.418	Dec 2022	1.984	Dec 2023	-		1.984	Continuing	Continuing	Continuing
Facilities and Maintenance - Facilities and Maintenance - MDIOC	C/CPIF	JACOBS TECHNOLOGY INC. : CO	28.030	4.009	Nov 2021	7.281	Nov 2022	7.752	Nov 2023	-		7.752	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)						Project (Number/Name) MD22 / Missile Defense Integration and Operations Center (MDIOC)			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Facilities, Engineering and Maintenance															
Facilities and Maintenance - Facilities and Maintenance - MDIOC Utilities	MIPR	DOD - USSF - 50TH CIVIL ENGINEER SQUADRON (50 CES) : CO	33.413	2.971	Oct 2021	3.718	Oct 2022	3.162	Oct 2023	-		3.162	Continuing	Continuing	Continuing
Engineering and Event Services - Engineering and Event Services	C/CPAF	MDIOC /Jacobs Technology Inc. : Colorado Springs, CO	107.812	8.793	Nov 2021	0.000		0.000		-		0.000	0.000	116.605	0.000
Operations and Sustainment - Operations and Sustainment - Civilian Salaries	Allot	MDIOC : Colorado Springs, CO	32.535	1.605	Oct 2021	1.502	Oct 2022	1.539	Oct 2023	-		1.539	Continuing	Continuing	Continuing
Operations and Sustainment - Operations and Sustainment - Travel and Training	Allot	MDIOC : Colorado Springs, CO	0.903	0.018	Nov 2021	0.032	Nov 2022	0.018	Nov 2023	-		0.018	Continuing	Continuing	Continuing
Operations and Sustainment - TEAMS Support	Various	Various : CO	26.424	1.198	Oct 2021	1.617	Oct 2022	1.473	Oct 2023	-		1.473	Continuing	Continuing	Continuing
Infrastructure Systems Repair, Sustainment, and Critical Upgrades - Infrastructure Systems Repair, Sustainment, and Critical Upgrades - MDIOC SRM IRES	C/CPIF	JACOBS TECHNOLOGY INC. : CO	27.149	5.512	Dec 2021	4.876	Dec 2022	2.206	Dec 2023	-		2.206	Continuing	Continuing	Continuing
Infrastructure Systems Repair, Sustainment, and Critical Upgrades - Infrastructure Systems Repair, Sustainment, and Critical Upgrades - MDIOC SRM USACE	MIPR	DOD - USA - US ARMY CORPS OF ENGINEERS (USACE) : Various	0.000	0.000		0.000		1.903	Dec 2023	-		1.903	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>						Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Facilities Mission Engineering and Program Integration - Facilities Mission Engineering and Program Integration - Mission Engineering and Program Integration	C/CPIF	JACOBS TECHNOLOGY INC. : CO	0.000	0.000		7.143	Nov 2022	9.078	Nov 2023	-		9.078	Continuing	Continuing	Continuing
Subtotal			496.857	41.467		46.926		48.081		-		48.081	Continuing	Continuing	N/A
Remarks Funds for utilities and base communications are specified in the Inter-service Support Agreement with the 50th Space Wing. In addition, the Missile Defense Integration and Operations Center (MDIOC) provides Technical Contract Support Services employees, for MDIOC operations and oversight of the Integrated Research and Development for Enterprise Solutions (IRES) contract, as well as funding for IRES work as required by the government.															
			Prior Years	FY 2022	FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			496.857	41.467		46.926		48.081		-		48.081	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																							
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)										Project (Number/Name) MD22 I Missile Defense Integration and Operations Center (MDIOC)																	
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 2022		FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028					
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (one quadrant) (FY 2023)														◇	◇	◇	◇																				
Heating, Ventilation, and Air Conditioning Design (two quadrants) (FY 2023)														◇	◇	◇	◇																				
Heating, Ventilation, and Air Conditioning Design (two quadrants) (FY 2024)																		◇	◇	◇	◇																
Fire Suppression System Compliance Project (two quadrants) (FY 2024)																		◇	◇	◇	◇																
Exterior Seals Refresh (FY 2025)																					◇	◇	◇	◇													
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (two quadrant) (FY 2025)																					◇	◇	◇	◇													
CRAC Unit Replacement (FY 2025)																					◇	◇	◇	◇													
Cafeteria Seating Refresh (FY 2025)																					◇	◇	◇	◇													
Fire Suppression System Compliance Project (two quadrants) (FY 2025)																					◇	◇	◇	◇													
TUS-1 Switchgear ReplacementTUS-3 Switchgear Replacement (FY 2025)																					◇	◇	◇	◇													
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (one quadrant) (FY 2026)																								◇	◇	◇	◇										
Fire Suppression System Compliance Project (two quadrants) (FY 2026)																								◇	◇	◇	◇										
TUS-4 Switchgear Replacement (FY 2026)																									◇	◇	◇	◇									
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 730 (three quadrant) (FY 2026)																								◇	◇	◇	◇										
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (three quadrants) (FY 2027)																												◇	◇	◇	◇						
Fire Suppression System Compliance Project (two quadrants) (FY 2027)																														◇	◇	◇	◇				
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (three quadrant) (FY 2028)																																	◇	◇	◇	◇	
CRAC Unit Replacement (FY 2028)																																		◇	◇	◇	◇

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023									
Appropriation/Budget Activity 0400 / 4								R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)								Project (Number/Name) MD22 / Missile Defense Integration and Operations Center (MDIOC)							
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028			
Replace facility hot water heaters (FY 2028)																				◇	◇	◇	◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (one quadrant) (FY 2023)	1	2023	4	2023
Heating, Ventilation, and Air Conditioning Design (two quadrants) (FY 2023)	1	2023	4	2023
Heating, Ventilation, and Air Conditioning Design (two quadrants) (FY 2024)	1	2024	4	2024
Fire Suppression System Compliance Project (two quadrants) (FY 2024)	1	2024	4	2024
Exterior Seals Refresh (FY 2025)	1	2025	4	2025
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (two quadrant) (FY 2025)	1	2025	4	2025
CRAC Unit Replacement (FY 2025)	1	2025	4	2025
Cafeteria Seating Refresh (FY 2025)	1	2025	4	2025
Fire Suppression System Compliance Project (two quadrants) (FY 2025)	1	2025	4	2025
TUS-1 Switchgear ReplacementTUS-3 Switchgear Replacement (FY 2025)	1	2025	4	2025
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (one quadrant) (FY 2026)	1	2026	4	2026
Fire Suppression System Compliance Project (two quadrants) (FY 2026)	1	2026	4	2026
TUS-4 Switchgear Replacement (FY 2026)	1	2026	4	2026
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 730 (three quadrant) (FY 2026)	1	2026	4	2026
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (three quadrants) (FY 2027)	1	2027	4	2027
Fire Suppression System Compliance Project (two quadrants) (FY 2027)	1	2027	4	2027
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (three quadrant) (FY 2028)	1	2028	4	2028
CRAC Unit Replacement (FY 2028)	1	2028	4	2028

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)	Project (Number/Name) MD22 / Missile Defense Integration and Operations Center (MDIOC)	

Events	Start		End	
	Quarter	Year	Quarter	Year
Replace facility hot water heaters (FY 2028)	1	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)				Project (Number/Name) MC22 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC22: Cyber Operations	4.450	0.608	0.648	0.671	-	0.671	0.689	0.703	0.717	0.731	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note N/A												
A. Mission Description and Budget Item Justification The Missile Defense Integration and Operations Center (MDIOC) conducts Cyber Defensive Operations through Key Management Infrastructure and Information Assurance Training which interfaces with the Information Technology/Information Assurance Enterprise to provide secure communications, network health and status monitoring, mission critical restoral capability, and technical expertise.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024	
Title: Cyber Defensive Operations Articles: Description: RECURRING: The MDIOC conducts Defensive Cyber Operations in the following categories: Key Management Infrastructure - Interface with the Information Technology/Information Assurance Enterprise to provide for the generation, production, control and distribution, and training for utilizing the keying material used with the Agency's cryptographic devices Information Assurance Training - Maintain an Information Assurance (IA) certified workforce through continuous IA training as required by the Department of Defense Directive 8570 Specific and/or unique accomplishments to each FY are as follows: FY 2023 Plans: - SEE ABOVE FY 2024 Plans: - SEE ABOVE FY 2023 to FY 2024 Increase/Decrease Statement:									0.608	0.648	0.671	
									-	-	-	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)	Project (Number/Name) MC22 / Cyber Operations		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
N/A				
Accomplishments/Planned Programs Subtotals		0.608	0.648	0.671
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)						Project (Number/Name) MC22 / Cyber Operations			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Cyber Defensive Operations - Cyber Defensive Operations - Cyber Defensive Operations	C/CPIF	JACOBS TECHNOLOGY INC. : VARIOUS	4.450	0.608	Jan 2022	0.648	Jan 2023	0.671	Jan 2024	-		0.671	Continuing	Continuing	Continuing
Subtotal			4.450	0.608		0.648		0.671		-		0.671	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			4.450	0.608		0.648		0.671		-		0.671	Continuing	Continuing	N/A
Remarks N/A															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023															
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)										Project (Number/Name) MC22 / Cyber Operations									
Significant Event Complete ▲					Milestone Decision Complete ★					Element Test Complete ◆					System Level Test Complete ●					Complete Activity ◆									
Significant Event Planned △					Milestone Decision Planned ☆					Element Test Planned ◇					System Level Test Planned ○					Planned Activity ◇									
										FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
MC22 Cyber Operations										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇				

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)	Project (Number/Name) MC22 / Cyber Operations	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC22 Cyber Operations	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program-Wide Support	29.575	2.113	1.793	1.797	-	1.797	2.038	2.344	2.402	2.688	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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	2.113	1.793	1.797
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p><i>FY 2023 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2024 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> N/A</p>			
Accomplishments/Planned Programs Subtotals		2.113	1.793
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>						Project (Number/Name) MD40 / <i>Program-Wide Support</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations Management	Various	Various : Multi: AL, CA, CO, VA	0.903	0.000		0.000		0.000		-		0.000	0.241	1.144	0.000
Program Wide Support - Agency Operations and Support Services	MIPR	Various : Multi: AK, AL, CA, CO, VA	17.830	0.134	Oct 2021	0.000		0.000		-		0.000	0.000	17.964	0.000
Program Wide Support - Facilities and Maintenance SRM	MIPR	Various : Multi: CO	3.200	0.000		0.000		0.000		-		0.000	0.000	3.200	0.000
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various : Various	5.311	0.000		0.000		0.000		-		0.000	0.000	5.311	0.000
Subtotal			27.244	0.134		0.000		0.000		-		0.000	0.241	27.619	N/A
Remarks N/A															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations and Support Services.	C/CPFF	LSINC : AL	2.331	1.979	Mar 2022	1.793	Nov 2022	1.797	Nov 2023	-		1.797	Continuing	Continuing	Continuing
Subtotal			2.331	1.979		1.793		1.797		-		1.797	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			29.575	2.113		1.793		1.797		-		1.797	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency							Date: March 2023			
Appropriation/Budget Activity 0400 / 4			R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)			Project (Number/Name) MD40 / Program-Wide Support				
	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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MD40 Program-Wide Support										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇</

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)	Project (Number/Name) MD40 / Program-Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603906C / <i>Regarding Trench</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	128.236	11.952	12.146	12.564	-	12.564	12.902	13.155	13.418	13.686	Continuing	Continuing
MD35: <i>Regarding Trench</i>	128.236	11.952	12.146	12.564	-	12.564	12.902	13.155	13.418	13.686	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

A. Mission Description and Budget Item Justification

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

B. Program Change Summary (\$ in Millions)	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	11.952	12.146	12.564	-	12.564
Current President's Budget	11.952	12.146	12.564	-	12.564
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	0.000	-	0.000

Change Summary Explanation

Further program details are reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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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 0603907C I <i>Sea Based X-Band Radar (SBX)</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	1,072.458	147.241	164.668	177.868	-	177.868	196.952	176.633	162.632	162.578	Continuing	Continuing
MX46: <i>Sea Based X-Band Radar Development Support</i>	1,032.617	141.567	158.689	171.486	-	171.486	189.655	169.275	155.807	155.204	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	39.841	5.674	5.979	6.382	-	6.382	7.297	7.358	6.825	7.374	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Increase from Fiscal Year (FY) 2023 to FY 2024 provides for increased cost of fuel and resupply for increased number of days at sea, increased cost of radome fabric materials, and increased cost of a planned in-port maintenance period.

A. Mission Description and Budget Item Justification

The Sea Based X-Band Radar (SBX) is an advanced X-Band Radar that provides the capability for mid-course acquisition, tracking, discrimination, and hit-assessment of missile threats. The SBX radar is mounted on a mobile, ocean-going, semi-submersible platform, enabling it to cover any region of the globe. The SBX supports the Missile Defense System Homeland Defense mission by tracking and discriminating sophisticated Intercontinental Ballistic Missile threats.

The SBX operates at sea for Missile Defense System flight and ground test participation or in an active, operational status when indications and warnings signal the need for enhanced discrimination. The SBX is located in a Pacific port when not required at sea. The SBX maintains vessel certifications for operations at sea as well as software compatibility with the Missile Defense System.

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	147.241	164.668	174.934	-	174.934
Current President's Budget	147.241	164.668	177.868	-	177.868
Total Adjustments	0.000	0.000	2.934	-	2.934
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	2.934	-	2.934

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)
<div>Change Summary Explanation</div> <div>N/A</div>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)				Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MX46: Sea Based X-Band Radar Development Support	1,032.617	141.567	158.689	171.486	-	171.486	189.655	169.275	155.807	155.204	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from Fiscal Year (FY) 2023 to FY 2024 provides for the increased cost of fuel and resupply for increased number of days at sea, increased cost of radome fabric materials, and increased cost of a planned in-port maintenance period.

A. Mission Description and Budget Item Justification

This project provides developmental operations and support of the Sea Based X-Band Radar (SBX) and its three major sub-systems: the self-propelled vessel; the X-Band Radar (XBR); and the communications network. Note: the In-Flight Interceptor Communications System was removed in 2023. Developmental operations and support activities include operation and sustainment of the vessel, developmental operation and sustainment of the XBR, limited XBR software support, and vessel and shore side security. The FY 2024 budget reflects the continued development required to deliver Missile Defense System enhanced discrimination capability.

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

	FY 2022	FY 2023	FY 2024
Title: Vessel Operations and Support	54.307	63.297	68.237
Articles:	-	-	-
<p>Description: Vessel Operations and Support provides for sustainment of the SBX vessel for full operations and ensures readiness for operational contingencies, provides for resupply of SBX, underway maintenance and annual surveys at sea. The SBX participates in Missile Defense System ground tests and flight tests per the Integrated Master Test Plan (IMTP). This effort also provides force protection for SBX, maintenance repair, air charter transportation, and supply vessel charters.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: - See above.</p> <p>FY 2024 Plans: - See above.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)	Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
Increase from FY 2023 to FY 2024 provides for increased cost of fuel, increased Military Sealift Command support, and vessel resupply cost due to inflation, based on additional days at sea.				
<p>Title: XBR Operations and Support</p> <p>Articles:</p> <p>Description: This effort operates and sustains the XBR at full operations, maintaining limited software sustainment for system capability with the Missile Defense System and fields additional XBR capability to the Warfighter with the Missile Defense System capability increment. This effort also provides precision track, discrimination, and hit assessment for engagement support in Missile Defense System ground tests and flight tests per the approved IMTP. Operate at sea for Homeland Defense, including recurring routine maintenance and testing.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: - See above.</p> <p>FY 2024 Plans: - See above.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>		51.667 -	66.439 -	66.518 -
<p>Title: XBR Radome Replacement</p> <p>Articles:</p> <p>Description: This effort funds the X-Band Radar (XBR) radome replacement to remedy identified adhesion failures of the external layers and localized seam adhesion failure, to include evidence of water and mold intrusion. Replacement makes possible the continuation of SBX Homeland Defensive Operations through 2035 or longer. This radome replacement effort is expected to complete in 2025.</p> <p>FY 2023 Plans: - Complete in-port evaluation and path finding activities to plan installation in 2026.</p> <p>FY 2024 Plans: - Complete fabrication of the multi-layer material, cutting into pieces and continue building up the radome envelope.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>		16.002 -	22.828 -	26.288 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)	Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
Increase from FY 2023 to FY 2024 provides for increased cost of radome fabric materials.				
<div>Title: Vessel in-Port Maintenance/Upgrades</div> <div>Articles:</div> <div>Description: Perform required maintenance to achieve annual surveys of vessel power, propulsion, communications and safety equipment and U.S. Coast Guard Certifications of vessel safety procedures, process controls, records and crew training/ proficiency. The in-port period will conduct maintenance on major vessel components that require industrial assistance for rigging, specialized tools and skills, cleaning and repair of ballast and fuel tanks, scaffolding for access to part of the vessel that are hard to reach at sea and large area preservation. The work will include non-destructive testing of critical hull structure for special surveys of high stress areas for the safe operation of the vessel and to ensure SBX readiness for operational missions.</div> <div>FY 2023 Plans:</div> <div>- See above.</div> <div>FY 2024 Plans:</div> <div>- See above.</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>Increase from FY 2023 to FY 2024 provides for in-port preparation (purchase of repair materials, mobilization of scaffolding, office trailers for shipyard administration, purchase of consumable supplies to support industrial work) and shipyard execution (labor, trucks, forklifts, cranes, workboats, air compressors, generators and American Bureau of Shipping surveyors).</div>		14.591 -	6.125 -	10.443 -
<div>Title: XBR in-Port Maintenance/Upgrades</div> <div>Articles:</div> <div>Description: Perform in depth XBR maintenance that is not achievable while deployed at sea due to on-going operations. Perform technical refresh of XBR equipment to include digital network switches, control equipment, network appliances, global positioning system and critical cybersecurity testing and upgrades.</div> <div>FY 2023 Plans:</div> <div>- See above.</div> <div>FY 2024 Plans:</div> <div>- See above.</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div>		5.000 -	0.000 -	0.000 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency								Date: March 2023			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)				Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support			

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024
N/A										
Accomplishments/Planned Programs Subtotals								141.567	158.689	171.486

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603882C: Ballistic Missile Defense Midcourse Defense Segment	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing
• 0603884C: Ballistic Missile Defense Sensors	250.123	230.502	239.159	-	239.159	212.191	233.877	242.623	251.226	Continuing	Continuing
• 0603891C: Special Programs - MDA	443.503	316.977	552.888	-	552.888	496.365	451.156	411.698	381.138	Continuing	Continuing
• 0603896C: Ballistic Missile Defense Command and Control, Battle Management & Communication	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing
• 0603898C: Ballistic Missile Defense Joint Warfighter Support	50.261	50.269	48.248	-	48.248	49.164	50.445	51.542	52.859	Continuing	Continuing
• 0603904C: Missile Defense Integration and Operations Center (MDIOC)	44.188	49.367	50.549	-	50.549	56.624	58.020	59.193	60.615	Continuing	Continuing
• 0604879C: Ballistic Missile Defense Sensor Test	77.428	88.326	111.049	-	111.049	90.697	103.885	154.905	127.807	Continuing	Continuing

Remarks

D. Acquisition Strategy

The SBX is contractor operated and maintained through a variety of contracts between the Navy and Missile Defense Agency (MDA). SBX-1 Vessel Management, Offshore Supply Vessel (OSV), and Security contracts are managed by Military Sealift Command. The SBX radar is operated and maintained on contracts managed by MDA.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)				Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
XBR Radome Replacement - Radome Replacement	SS/CPFF	RAYTHEON : VARIOUS	12.741	16.002	Jan 2022	22.828	Feb 2023	26.288	Nov 2023	-		26.288	Continuing	Continuing	Continuing
Subtotal			12.741	16.002		22.828		26.288		-		26.288	Continuing	Continuing	N/A
Remarks															
In accordance with the Financial Management Regulation cost category definitions, some items have transferred to appropriate cost categories.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Vessel Operations and Support - Air Charter	MIPR	DOD - USN - MILITARY SEALIFT COMMAND (MSC) : VA	0.000	1.050	Oct 2021	1.079	Oct 2022	1.324	Oct 2023	-		1.324	Continuing	Continuing	Continuing
Vessel Operations and Support - Force Protection	MIPR	DOD - USN - MILITARY SEALIFT COMMAND (MSC) : VA	18.563	5.850	Oct 2021	6.011	Oct 2022	6.222	Oct 2023	-		6.222	Continuing	Continuing	Continuing
Vessel Operations and Support - Fuel	MIPR	DOD - USN - MILITARY SEALIFT COMMAND (MSC) : VA	86.146	8.500	Oct 2021	12.342	Oct 2022	13.602	Oct 2023	-		13.602	Continuing	Continuing	Continuing
Vessel Operations and Support - Navy Program Management Office	MIPR	DOD - USN - MILITARY SEALIFT COMMAND (MSC) : VA	13.469	3.571	Oct 2021	4.930	Oct 2022	6.539	Oct 2023	-		6.539	Continuing	Continuing	Continuing
Vessel Operations and Support - Navy Transition Office	MIPR	U.S. Navy : AL	5.732	0.000		0.000		0.000		-		0.000	0.000	5.732	0.000
Vessel Operations and Support - Operational	MIPR	DOD - USN - MILITARY SEALIFT	82.819	13.769	Oct 2021	17.181	Oct 2022	18.457	Oct 2023	-		18.457	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)						Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Support Vessel (OSV Resupply)		COMMAND (MSC) : VA													
Vessel Operations and Support - SBX Operations & Support (Vessel)	MIPR	DOD - USN - MILITARY SEALIFT COMMAND (MSC) : VA	246.924	21.567	Oct 2021	21.754	Oct 2022	22.093	Oct 2023	-		22.093	Continuing	Continuing	Continuing
Vessel Operations and Support - SBX Vessel Maintenance	MIPR	Tote : HI/NJ	36.963	0.000		0.000		0.000		-		0.000	0.000	36.963	0.000
Vessel Operations and Support - Vessel Mission Integration	C/CPIF	Gryphon Tech. : AL/ HI	77.234	0.000		0.000		0.000		-		0.000	0.000	77.234	0.000
XBR Operations and Support - Civilian Salaries/ Travel	Allot	MDA : Various	3.366	1.339	Oct 2021	1.399	Oct 2022	1.564	Oct 2023	-		1.564	Continuing	Continuing	Continuing
XBR Operations and Support - Contract Support Services	C/CPFF	Various : Various	2.493	0.685	Oct 2021	1.017	Oct 2022	0.602	Oct 2023	-		0.602	Continuing	Continuing	Continuing
XBR Operations and Support - Contract Support Services - Engineering	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : CA	0.000	1.444	Oct 2021	1.140	Oct 2022	0.771	Oct 2023	-		0.771	Continuing	Continuing	Continuing
XBR Operations and Support - FFRDC - MIT	MIPR	MASSACHUSETTS INSTITUTE OF TECHNOLOGY : Various	0.000	0.250	Jun 2022	0.000		0.000		-		0.000	0.000	0.250	0.000
XBR Operations and Support - Mission Integration	C/CPIF	MANTECH : Various	7.302	10.863	Nov 2021	10.682	Nov 2022	10.404	Nov 2023	-		10.404	Continuing	Continuing	Continuing
XBR Operations and Support - Network And Infrastructure Services	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	1.294	0.734	Jan 2022	0.446	Mar 2023	0.460	Jan 2024	-		0.460	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)						Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
XBR Operations and Support - SBX Communications Support	SS/CPIF	Boeing : AL/HI	19.825	3.580	Jan 2022	0.000		0.000		-		0.000	0.000	23.405	0.000
XBR Operations and Support - SBX Satellite Communications Terminal Install	MIPR	DOD - USN - NAVAL INFORMATION WARFARE CENTER (NIWC) PACIFIC : Various	0.000	3.237	Jun 2022	0.000		0.000		-		0.000	0.000	3.237	0.000
XBR Operations and Support - UARC -JHU/APL	SS/CPFF	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	0.000	0.000		0.361	Mar 2023	0.000		-		0.000	0.000	0.361	0.000
XBR Operations and Support - X-Band Radar O&S (CLS) - DREX Switch	SS/CPFF	RAYTHEON : Various	0.000	0.000		0.000		3.000	Oct 2023	-		3.000	Continuing	Continuing	Continuing
XBR Operations and Support - XBR Operations & Support	SS/CPFF	RAYTHEON : Various	417.746	29.535	Dec 2021	51.394	Nov 2022	49.717	Dec 2023	-		49.717	Continuing	Continuing	Continuing
Vessel in-Port Maintenance/Upgrades - Sea Based X-Band Radar Vessel Management-In-port Maintenance	MIPR	DOD - USN - MILITARY SEALIFT COMMAND (MSC) : VA	0.000	14.591	Oct 2021	6.125	Oct 2022	10.443	Oct 2023	-		10.443	Continuing	Continuing	Continuing
XBR in-Port Maintenance/Upgrades - Communication Switch Refresh	SS/CPFF	RAYTHEON : Various	0.000	5.000	Dec 2021	0.000		0.000		-		0.000	0.000	5.000	0.000
Subtotal			1,019.876	125.565		135.861		145.198		-		145.198	Continuing	Continuing	N/A
Remarks N/A															

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency											Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)				Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support				
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,032.617	141.567		158.689		171.486		-		171.486	Continuing	Continuing	N/A

Remarks

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

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PE 0603907C: *Sea Based X-Band Radar (SBX)*
Missile Defense Agency

UNCLASSIFIED
Page 11 of 18

R-1 Line #88

Volume 2a - 467

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)	Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GTI-08a (N/I) (Missile Defense System Ground Test)	3	2022	3	2022
FTX-45	4	2022	4	2022
GTD-08a (N/I) (Missile Defense System Ground Test)	1	2023	1	2023
FTX-26 (OT) (SN, OT Target Only Flight Test)	4	2023	4	2023
GTI-08b (N/I)	4	2023	4	2023
FTG-12 (GM, DT/OT Intercept Flight Test)	1	2024	1	2024
GTD-08b (N/I)	2	2024	2	2024
In-port Maintenance	4	2024	1	2025
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)	1	2025	1	2025
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)	3	2025	3	2025
In Port Maintenance	4	2025	1	2026
GTD-13 (N/I) (Missile Defense System Ground Test)	4	2025	4	2025
GTI-14 Sprint 1 (N/I)	4	2026	4	2026
FTG-16 (GM, DT Intercept Flight Test)	2	2027	2	2027
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)	2	2027	2	2027
FTT-22 (TH, DT/OT Intercept Flight Test)	3	2027	3	2027
FTG-17 (GM, DT/OT Intercept Flight Test)	4	2027	4	2027
GTD-14 (N/I) ((Missile Defense System Ground Test)	4	2027	4	2027
In port Maintenance	4	2027	1	2028
FTG-18 (DT/OT)	3	2028	3	2028
GTI-16 Sprint 1 (N/I)	4	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program-Wide Support	39.841	5.674	5.979	6.382	-	6.382	7.297	7.358	6.825	7.374	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Wide Support (PWS) is allocated on a pro-rata basis across multiple Agency program elements (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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	5.674	5.979	6.382
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)	Project (Number/Name) MD40 / Program-Wide Support	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2024 Plans: - SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>			
Accomplishments/Planned Programs Subtotals		5.674	5.979
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)				Project (Number/Name) MD40 / Program-Wide Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Facilities and Maintenance SRM	MIPR	Army Corps of Engineers : Various	0.000	0.000		1.743	Nov 2022	2.265	Nov 2023	-		2.265	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	VENTURI, INC. : Various	0.000	0.000		4.236	Nov 2022	4.117	Nov 2023	-		4.117	Continuing	Continuing	Continuing
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various : Various	9.154	0.000		0.000		0.000		-		0.000	0.000	9.154	0.000
Program Wide Support - Program Wide Support - Agency Operations Management	Various	Various Multi : AK, AL, CA, CO, VA	2.212	0.145	Jul 2022	0.000		0.000		-		0.000	0.000	2.357	0.000
Program Wide Support - Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	MDA Multi : AK, AL, CA, CO, VA	1.606	0.000		0.000		0.000		-		0.000	0.000	1.606	0.000
Program Wide Support - Program Wide Support - Agency Operations and Support Other Agency Services (MIPRs)	MIPR	Various Multi: : AK, AL, CA, CO, VA	26.498	5.395	Nov 2021	0.000		0.000		-		0.000	0.000	31.893	0.000
Program Wide Support - Program Wide Support - Agency Operations and Support Services (FFP)	C/FFP	Various Multi: : VA, WA	0.371	0.134	May 2022	0.000		0.000		-		0.000	0.000	0.505	0.000
Subtotal			39.841	5.674		5.979		6.382		-		6.382	Continuing	Continuing	N/A
Remarks N/A															

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency											Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)					Project (Number/Name) MD40 / Program-Wide Support			
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	39.841	5.674		5.979		6.382		-		6.382	Continuing	Continuing	N/A

Remarks

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

UNCLASSIFIED

PE 0603907C: *Sea Based X-Band Radar (SBX)* **UNCLASSIFIED** Volume 2a - 473
 Missile Defense Agency Page 17 of 18 R-1 Line #88

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)	Project (Number/Name) MD40 / Program-Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	2,458.391	300.000	300.000	300.000	-	300.000	300.000	300.000	300.000	300.000	Continuing	Continuing
MD26: <i>Arrow Weapon System</i>	1,006.645	173.000	173.000	173.000	-	173.000	173.000	173.000	173.000	173.000	Continuing	Continuing
MD34: <i>Short Range Ballistic Missile Defense (SRBMD) (David's Sling Weapon System (DSWS))</i>	1,451.746	127.000	127.000	127.000	-	127.000	127.000	127.000	127.000	127.000	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Content supports expected contributions from Israel per international agreements.

A. Mission Description and Budget Item Justification

Since 1986, the United States (U.S.) and the State of Israel have cooperated on missile defense. Currently, the Missile Defense Agency (MDA) has two major projects with Israel to develop and improve their indigenous capability to defend against short range rockets, cruise missiles, and short and medium range ballistic missiles. These include the Arrow Weapon System (MD26) and the Short Range Ballistic Missile Defense David's Sling Weapon System (MD34). Within these projects MDA along with Israeli Missile Defense Organization develops and produces weapon systems, conducts tests, and exercises interoperability between the U.S. Missile Defense System and the Israeli Missile Defense Architecture.

The U.S. and State of Israel entered into a Memorandum of Understanding on September 2016, in which "Such funding, should over a ten year period beginning in FY 2019 and ending in FY 2028, be provided at a level of \$500 million per year." (U.S. contributions only). These funds will be distributed between the Israeli Programs in Research Development Test & Evaluation and Procurement Funds.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)		PE 0603913C I Israeli Cooperative Programs			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	300.000	300.000	300.000	-	300.000
Current President's Budget	300.000	300.000	300.000	-	300.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	0.000	-	0.000
Change Summary Explanation					
N/A.					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603913C / Israeli Cooperative Programs				Project (Number/Name) MD26 / Arrow Weapon System			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD26: Arrow Weapon System	1,006.645	173.000	173.000	173.000	-	173.000	173.000	173.000	173.000	173.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note This project encompasses the Missile Defense Agency's (MDA) U.S.-Israeli cooperative program for the Israeli Arrow Weapon System (AWS) Program.												
A. Mission Description and Budget Item Justification Israeli AWS: This system includes block upgrades to the AWS components which enhances capabilities against evolving medium range threats by increasing the total defended area. AWS elements include the Arrow-2 and Arrow-3 missiles and launchers, Citron Tree Battle Management Center (BMC), Green Pine (GP) and Super Green Pine (SGP) Radars, Lego Shield data interfaces, and Hazelnut Tree Launcher Control Centers (LCC). AWS Block 5 development incorporates a Long Range Detection Suite (LRDS) that consists of an Airborne Early Warning System (ABEWS) for enhanced sensor tracking, discrimination, and raid size capacity. In addition, the Sharp Eye ground-based sensor suite, the Arrow-4 interceptor and the Pine Woods Radar are being developed for integration into future AWS Blocks. The program also includes the continued development of Arrow's interoperability with U.S. Missile Defense System. The U.S. and State of Israel entered into a Memorandum of Understanding on September 2016, in which "Such funding, should over a ten year period beginning in FY 2019 and ending in FY 2028, be provided at a level of \$500 million per year." (U.S. contributions only). These funds will be distributed between the Israeli Programs in Research Development Test & Evaluation and Procurement Funds.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024	
Title: Arrow Weapon System Articles:									167.940	167.940	167.940	
									-	-	-	
Description: The AWS continues Block 5 spiral development and target development. Included is the integration of Block 5 assets, which consist of Arrow-2 and Arrow-3 missiles, launchers, GPs and SGP, Citron Tree BMC, Hazelnut Tree LCCs, ABEWS, and Lego Shield. Develop continues for the Sharp Eye sensor suite, Arrow-4 interceptor and Pine Woods Radar for future AWS Blocks. Continue proven Interoperability with U.S. Assets and enhancements to existing AWS System Components. Specific and/or unique planned accomplishments to each FY are as follows: FY 2023 Plans: -Complete Block 5.0 and Continue Block 5.1 Development (Conduct Critical Design Review) -Continue Arrow-4 Interceptor and Launcher Development (Conduct Critical Design Review) -Continue AWS radar/optical sensor development and integration into the AWS												

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / Israeli Cooperative Programs	Project (Number/Name) MD26 / Arrow Weapon System		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
-Procure targets for future AWS system tests FY 2024 Plans: -Continue Arrow-4 Interceptor and Launcher Development -Conduct Block 5.0 Flight Test proving improved system performance -Complete Block 5.1 Development -Initiate Future Block 6.0 Development (Conduct System Readiness Review) -Continue AWS radar/optical sensor development and integration into the AWS -Procure targets for future AWS system tests FY 2023 to FY 2024 Increase/Decrease Statement: N/A				
Title: Israeli Test Bed (ITB) Articles: Description: The ITB provides experiments to evaluate Human Machine Interface battle management and integration of Israeli Missile Defense Weapon Systems Techniques Tactics and Procedures and CONOPS. Specific and/or unique accomplishments to each FY are as follows: FY 2023 Plans: -SEE ABOVE. FY 2024 Plans: -SEE ABOVE. FY 2023 to FY 2024 Increase/Decrease Statement: N/A		3.535 -	3.535 -	3.535 -
Title: Israeli Systems Architecture and Integration (ISA&I) Articles: Description: The ISA&I conducts studies to assess Israel's future 2038 Missile Defense Architecture. This identifies the preferred missile defense architecture and reference threat for 10-15 year future epoch and interoperability special studies on regional threats and growth path options. Specific and/or unique accomplishments to each FY are as follows:		1.525 -	1.525 -	1.525 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency								Date: March 2023			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>				Project (Number/Name) MD26 / <i>Arrow Weapon System</i>			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024	
<i>FY 2023 Plans:</i> -SEE ABOVE.											
<i>FY 2024 Plans:</i> -SEE ABOVE.											
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> N/A											
Accomplishments/Planned Programs Subtotals								173.000	173.000	173.000	
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0208866C: MD26: Arrow 3 Upper Tier System Procurement	62.000	80.000	80.000	-	80.000	50.000	50.000	50.000	50.000	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
<p>The MDA - U.S. Israeli Cooperative Program Office jointly manages the Arrow Program with Israeli Missile Defense Organization (IMDO) to ensure that all systems are delivered with quality, on time, on budget, and meet the needs of the warfighter. The program funding is equitably funded between the U.S. and Israel with Israel providing matching contributions. However, a portion of the Israeli cost share comes from non-financial contributions such as previously completed work prior to joint program initiation. Contracts are awarded by IMDO or MDA, dependent on what is most advantageous to the Joint Governments. In regard to AWS, IMDO contracts on behalf of U.S. government with Israel Aerospace Industries (IAI). IAI subcontracts with Israeli and U.S. companies. For the ITB, the MDA contracts directly with Elbit Systems, Ltd. while IMDO provides an equitable share of the funding to the U.S. Finally, MDA provides funding and contracts directly with WALES, Ltd. for the ISA&I program.</p>											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603913C / Israeli Cooperative Programs				Project (Number/Name) MD26 / Arrow Weapon System					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Arrow Weapon System - AWS	C/CPFF	Israel Aerospace Industries (IAI) : Israel	929.273	167.940	Dec 2021	167.940	Dec 2022	167.940	Dec 2023	-		167.940	Continuing	Continuing	Continuing
Israeli Test Bed (ITB) - ITB	C/FFP	Elbit Systems : Israel	45.955	3.535	Nov 2021	3.535	Nov 2022	3.535	Nov 2023	-		3.535	Continuing	Continuing	Continuing
Israeli Systems Architecture and Integration (ISA&I) - ISA&I	C/FFP	Wales LTD : Israel	31.417	1.525	Dec 2021	1.525	Dec 2022	1.525	Dec 2023	-		1.525	Continuing	Continuing	Continuing
Subtotal			1,006.645	173.000		173.000		173.000		-		173.000	Continuing	Continuing	N/A
Remarks															
ISA&I and ITB Follow On Contracts were awarded.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1,006.645	173.000		173.000		173.000		-		173.000	Continuing	Continuing	N/A
Remarks															
Contract cost reflect U.S. contribution only.															
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																															
Appropriation/Budget Activity 0400 / 4														R-1 Program Element (Number/Name) PE 0603913C / Israeli Cooperative Progra ms												Project (Number/Name) MD26 / Arrow Weapon System																			
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 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028							
Israeli Test Bed Experiments FY 2022														◆	◆	◆	◆																												
Arrow Weapon System Flight Test FY 2022														◆	◆	◆	◆																												
Israeli Test Bed Experiments FY 2023																		◇	◇	◇	◇																								
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2023																		◇	◇	◇	◇																								
Israeli Test Bed Experiments FY 2024																						◇	◇	◇	◇																				
Arrow Weapon System Flight Test FY 2024																						◇	◇	◇	◇																				
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2025																										◇	◇	◇	◇																
Israeli Test Bed Experiments FY 2025																										◇	◇	◇	◇																
Arrow Weapon System Flight Test FY 2025																										◇	◇	◇	◇																
Israeli Test Bed Experiments FY 2026																														◇	◇	◇	◇												
Arrow Weapon System Flight Test FY 2026																														◇	◇	◇	◇												
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2027																																		◇	◇	◇	◇								
Israeli Test Bed Experiments FY 2027																																		◇	◇	◇	◇								
Arrow Weapon System Flight Test FY 2027																																		◇	◇	◇	◇								
Israeli Test Bed Experiments FY 2028																																							◇	◇	◇	◇			
Arrow Weapon System Flight Test FY 2028																																							◇	◇	◇	◇			

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Arrow Weapon System</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Israeli Test Bed Experiments FY 2022	1	2022	4	2022
Arrow Weapon System Flight Test FY 2022	1	2022	4	2022
Israeli Test Bed Experiments FY 2023	1	2023	4	2023
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2023	1	2023	4	2023
Israeli Test Bed Experiments FY 2024	1	2024	4	2024
Arrow Weapon System Flight Test FY 2024	1	2024	4	2024
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2025	1	2025	4	2025
Israeli Test Bed Experiments FY 2025	1	2025	4	2025
Arrow Weapon System Flight Test FY 2025	1	2025	4	2025
Israeli Test Bed Experiments FY 2026	1	2026	4	2026
Arrow Weapon System Flight Test FY 2026	1	2026	4	2026
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2027	1	2027	4	2027
Israeli Test Bed Experiments FY 2027	1	2027	4	2027
Arrow Weapon System Flight Test FY 2027	1	2027	4	2027
Israeli Test Bed Experiments FY 2028	1	2028	4	2028
Arrow Weapon System Flight Test FY 2028	1	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603913C / Israeli Cooperative Programs				Project (Number/Name) MD34 / Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon System (DSWS))			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD34: Short Range Ballistic Missile Defense (SRBMD) (David's Sling Weapon System (DSWS))	1,451.746	127.000	127.000	127.000	-	127.000	127.000	127.000	127.000	127.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This project encompasses the Missile Defense Agency's (MDA) U.S.-Israeli cooperative program for the Israeli DSWS Program.

A. Mission Description and Budget Item Justification

Israeli SRBMD, also known as the DSWS, is designed to counter short range rockets, air breathing threats, medium caliber rockets, and theater ballistic missiles, and is integrated into the Israeli Missile Defense Architecture. The DSWS includes the Stunner Interceptor (Electro-Optical and All Weather variants), a Missile Firing Unit, a Multi-Mission Radar - Next Generation, a Launch Site Controller, a Data Link, the Elevated Sensor, and the Golden Almond Battle Management Center. The DSWS can be deployed in a variety of configurations to support the intended mission.

The DSWS Block 3 capability expands the range and threat versatility of the system by adding the All Weather Stunner Interceptor, improving the Multi-Mission Radar-Next Generation and increasing the capacity of the Golden Almond Battle Management Center.

The United States (U.S.) and State of Israel entered into a Memorandum of Understanding on September 2016, in which "Such funding, should over a ten year period beginning in FY 2019 and ending in FY 2028, be provided at a level of \$500 million per year." (U.S. contributions only). These funds will be distributed between the Israeli Programs in Research Development Test & Evaluation and Procurement Funds.

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

	FY 2022	FY 2023	FY 2024
Title: SRBMD Program	127.000	127.000	127.000
Articles:	-	-	-
Description: The DSWS continues system development, testing, and integration of spiral software development for Blocks 2-3. Block 2 will add capability to defend against cruise missiles and tactical ballistic missiles. Block 3 will provide robust defense capability and add significant detection capability to the Israeli Air Defense Architecture. Recurring Planned Accomplishments include: - Conduct Testing of the DSWS - Continue Blocks 2 and 3 Spiral Development			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD34 / <i>Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon System (DSWS))</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
- Establish and continue interoperability between the U.S. Missile Defense System and with Israeli Air Missile Defense Network			
Specific and/or unique accomplishments to each FY are as follows:			
<i>FY 2023 Plans:</i> -Conduct Block 3 Interceptor Flight Test in support of Initial Lot Production (ILP) Production Readiness Review (PRR) -Continue Block 3.1 spiral development (conduct Critical Design Review) -Continue testing of the Elevated Sensor -Procure U.S. Targets for Future DSWS System Tests -Conduct Block 2.2 Flight Test <i>FY 2024 Plans:</i> -Conduct Block 3 Interceptor Flight Test in continued support of Full Rate Production (FRP) PRR -Procure Block 3.1 Hardware for ILP -Continue Block 3.1 Spiral development -Conduct Block 3.2 System Requirements Review and Preliminary Design Review <i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> N/A			
Accomplishments/Planned Programs Subtotals	127.000	127.000	127.000

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 06028866C: MD34: <i>Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon System (DSWS)) Procurement</i>	30.000	40.000	40.000	-	40.000	40.000	40.000	40.000	40.000	Continuing	Continuing
Remarks											

D. Acquisition Strategy

The MDA- U.S. Israeli Cooperative Program Office jointly manages the DSWS Program with Israeli Missile Defense Organization (IMDO) to ensure that all systems are delivered with quality, on time, on budget, and meet the needs of the warfighter. The program funding is equitably funded between the U.S. and Israel with Israel providing matching contributions. However, a portion of the Israeli cost share comes from non-financial contributions such as previously completed work prior to joint

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / Israeli Cooperative Programs	Project (Number/Name) MD34 / Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon System (DSWS))

program initiation. Contracts are awarded by IMDO or MDA, dependent on what is most advantageous to the Joint Governments. In regard to DSWS, IMDO contracts on behalf of U.S. government with Rafael. Rafael subcontracts with Israeli and U.S. companies.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603913C / Israeli Cooperative Programs				Project (Number/Name) MD34 / Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon System (DSWS))					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
SRBMD Program - SRBMD Program	C/CPFF	Rafael : Israel	1,451.746	127.000	Dec 2021	127.000	Dec 2022	127.000	Dec 2023	-		127.000	Continuing	Continuing	Continuing
Subtotal			1,451.746	127.000		127.000		127.000		-		127.000	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1,451.746	127.000		127.000		127.000		-		127.000	Continuing	Continuing	N/A
Remarks Contract cost reflect U.S. contribution only. Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023										
Appropriation/Budget Activity 0400 / 4								R-1 Program Element (Number/Name) PE 0603913C / Israeli Cooperative Programs								Project (Number/Name) MD34 / Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon System (DSWS))								
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028				
System Flight Test #8 FY 2023												◇	◇	◇	◇									
System Flight Test #9 FY 2024													◇	◇	◇	◇								
System Flight Test #10 FY 2025															◇	◇	◇	◇						
System Flight Test #11 FY 2026																	◇	◇	◇	◇				
System Flight Test #12 FY 2027																			◇	◇	◇	◇		
System Flight Test #13 FY 2028																					◇	◇	◇	◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / Israeli Cooperative Programs	Project (Number/Name) MD34 / Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon System (DSWS))	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
System Flight Test #8 FY 2023	1	2023	4	2023
System Flight Test #9 FY 2024	1	2024	4	2024
System Flight Test #10 FY 2025	1	2025	4	2025
System Flight Test #11 FY 2026	1	2026	4	2026
System Flight Test #12 FY 2027	1	2027	4	2027
System Flight Test #13 FY 2028	1	2028	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	3,089.366	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing
MT04: <i>BMDs Test Program</i>	2,870.943	363.703	345.263	339.182	-	339.182	405.601	410.503	436.642	346.059	Continuing	Continuing
MC04: <i>Cyber Operations</i>	70.163	8.025	8.205	8.333	-	8.333	8.552	8.719	8.893	9.071	Continuing	Continuing
MD40: <i>Program Wide Support</i>	148.260	17.228	13.356	12.940	-	12.940	16.128	17.699	19.539	20.126	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Decrease from FY 2023 to FY 2024 is in accordance with Integrated Master Test Plan (IMTP) requirements.

A. Mission Description and Budget Item Justification

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

Missile Defense System Test Program Functions include:

- Represent MDA as the single test authority to the test and evaluation community, international cooperative program representatives, and other organization representatives.
- Develop and implement MDA test policy, standards, tools, products, and processes to enable effective tests while balancing MDA and element programmatic needs.
- Develop an IMTP that compiles all MDA test objectives, test schedules, and funding requirements from the year of execution through the Future Years Defense Program time period and beyond.
- Act as the single point of contact in MDA for all external ranges and common test resources.
- Provide, maintain, and develop common test resources and infrastructure required to execute tests in the MDA Test Program by leveraging element laboratories, ranges, executing agents, and functional expertise, as applicable.
- Certify that test personnel are trained and equipped to conduct safe and effective tests.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)		PE 0603914C I Ballistic Missile Defense Test			
<div>- Provide test personnel and support services to plan and execute tests.</div> <div>- Collect, archive, and distribute all MDA test data/information.</div>					
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	389.156	367.824	363.963	-	363.963
Current President's Budget	388.956	366.824	360.455	-	360.455
Total Adjustments	-0.200	-1.000	-3.508	-	-3.508
• Congressional General Reductions	0.000	-1.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.200	0.000			
• Other Adjustment	0.000	0.000	-3.508	-	-3.508
Change Summary Explanation					
Decrease in FY 2024 is in accordance with IMTP requirements.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test				Project (Number/Name) MT04 / BMDS Test Program			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MT04: BMDS Test Program	2,870.943	363.703	345.263	339.182	-	339.182	405.601	410.503	436.642	346.059	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2023 to FY 2024 is in accordance with Integrated Master Test Plan (IMTP) requirements.

A. Mission Description and Budget Item Justification

The Test Program provides consolidated Missile Defense Agency (MDA) capabilities and resources to support the management and execution of Missile Defense System and Element-level testing.

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

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

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

	FY 2022	FY 2023	FY 2024
Title: Program Planning and Operations	107.841	102.087	107.819
Articles:	-	-	-
Description: The Missile Defense System Test Program is responsible for the following Program, Planning, and Operational activities: <ul style="list-style-type: none"> - Maintain a professional and diverse civilian workforce to plan and execute flight, ground, and cyber test events. - Serve as the MDA Test Interface/Liaison to the Director, Operational Test and Evaluation (DOT&E), Under Secretary of Defense for Research and Engineering for Development Test, Evaluation, and Assessments (DTE&A), Joint Functional Component Command for Integrated Missile Defense (JFCC IMD), Joint Interoperability Test Command (JITC) and the Service Operational Test Agencies (OTA). - Provide Missile defense System OTA Team resources and funding for civilian salaries and personnel support to conduct system-level test and evaluation activities of the entire Missile Defense System portfolio. The Missile Defense System OTA Team actively 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>participates in test planning, conducts and reports of flight and ground test evaluation activities, and conducts cyber assessments of the Missile Defense System.</p> <ul style="list-style-type: none"> - Implement cyber test requirements as directed by DOT&E and DoD regulations and guidelines to include planning, coordination, and execution of Cooperative Vulnerability and Penetration Assessments and Adversarial Assessments. - Establish, maintain, and execute the Missile Defense System Test program budget. - Provide IMTP cost modeling. - Provide day-to-day Test Functional Area management. - Provide Test organizational property accountability. - Establish and standardize Test issuance documents. - Manage test contracting and acquisition activities as well as manpower activities ensuring proper integration of contracts, support agreements; oversight and maintenance of the Test Directorate Inter/Intra-agency Acquisition Review (IAR) database. - Provide oversight and coordination of test policy guidance to ensure compliance and strategic synchronization across the Test Directorate and MDA. - Manage travel, including travel to support IMTP flight and ground test events. <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <ul style="list-style-type: none"> - Increase from FY 2023 to FY 2024 reflects increased Technical, Engineering, Advisory, and Management Support (TEAMS) and OTA labor rates and inflation. 			
<p>Title: Flight Test</p> <p align="right">Articles:</p> <p>Description: The Flight Test Execution Program solely reflects the IMTP cost model. The program integrates, manages, and executes flight tests using certified personnel and standardized processes and products to support Missile Defense System fielding to the warfighter.</p> <ul style="list-style-type: none"> - Develop flight test training requirements for Test Directors and other console operators. - Implement cyber test requirements as directed by DOT&E and DoD regulations and guidelines to include planning, coordination, and execution of Cooperative Vulnerability and Penetration Assessments and Adversarial Assessments. 		4.002 -	8.185 -
		11.481 -	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test	Project (Number/Name) MT04 / BMDS Test Program		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
<div>- Develop and manage the cyber test organization including plans, policy and strategy, resources, and tracking of information and coordinating cyber test schedules in support of Flight Tests.</div> <div>- Identify mission risks and implement mitigation practices as required ensuring safe and successful test outcomes.</div> <div>- Provide a Failure Response Team to ensure implementation of the response plan and capture lessons learned for process improvement.</div> <div>- Train test personnel for each flight test and maintain training records for all test personnel.</div> <div>- Train and resource System Mission Managers to lead Integrated Event Test Team mission management and readiness activities across all four test event phases for System and Element flight test and contingency operations.</div> <div>- Complete test planning for missile defense Flight Test events.</div> <div>- Conduct mission planning and range coordination activities; provide communications security equipment and management for missile defense Flight Test events.</div> <div>- Design and develop the Lessons Learned database.</div> <div>- Execute Flight Test events in accordance with the IMTP schedule.</div> <div>Specific and/or unique accomplishments to each FY are as follows:</div> <div>FY 2023 Plans:</div> <div>- SEE ABOVE.</div> <div>FY 2024 Plans:</div> <div>- SEE ABOVE</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>- Increase from FY 2023 to FY 2024 provides Flight Test events in accordance with IMTP requirements to include \$5.584 million in FY 2024 for Pacific Deterrence Initiative testing activities.</div>				
Title: Ground Test		46.294	51.038	45.928
Articles:		-	-	-
Description: The Ground Test Execution Program plans, designs, and executes Missile Defense System ground tests in support of flight test risk reduction; Missile Defense System fielding decisions; and Doctrine, Organization, Training, Materiel, Leadership and Education, and Personnel and Facilities assessments. In addition, enables the Warfighter to effectively employ, maintain, and sustain the Missile Defense System and participate in the development of future missile defense capabilities through efficient ground testing.				
- Conduct System Pre-Mission Tests as required to support Missile defense System Flight Test Risk Reduction Analysis.				
- Refine and continue development of the Ground Test Mission Directors, System Mission Manager and Mission Director Training Plan.				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDs Test Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> - Implement cyber test requirements as directed by DOT&E and DoD regulations and guidelines to include planning, coordination, and execution of Cooperative Vulnerability and Penetration Assessments and Adversarial Assessments. - Develop and manage the cyber test organization including plans, policy and strategy, resources, and tracking of information and coordinating cyber test schedules in support of the IMTP. - Execute baseline Ground Tests in accordance with IMTP requirements. - Execute baseline Cyber Tests in accordance with IMTP requirements. <p>Maintain Ground Test Infrastructure:</p> <ul style="list-style-type: none"> - Execute ground test planning activities supporting MDA test requirements and priorities to include test design, test integration, and international testing. - Verify all test assets and resources are reserved and operationally available to support each test event. - Coordinate requirements for laboratory facilities. - Coordinate and identify communication requirements (e.g., tactical data, truth data, test data, tactical voice and test voice). - Maintain the hardware-in-the-loop (HWIL) Labs and communication test assets. <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Execute the following Ground Tests in FY 2023: GTD-08b (N/I) (Missile Defense System Ground Test) and GTI-08b (N/I), <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Execute the following Ground Tests in FY 2024: GTD-08b (N/I) (Missile Defense System Ground Test), GTI-ASI (24) (Missile Defense System International Ground Test), GTI-ISR (23) (Missile Defense System International Ground Test). <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <ul style="list-style-type: none"> - Decrease from FY 2023 to FY 2024 is in accordance with IMTP requirements. 			
<p>Title: Test Infrastructure</p> <p align="right">Articles:</p> <p>Description: The Missile Defense System Test Program procures, maintains, and manages test resource infrastructure and provides all resources and requirements in support of a robust IMTP schedule in five primary functions:</p> <ol style="list-style-type: none"> 1) Flight Test Ranges and Infrastructure Upgrades 2) Mobile Instrumentation Systems 3) Airborne Sensors 4) Test Communications 		179.521 -	162.839 -
		149.273 -	

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
5) Data Management and Labs The primary function responsibilities are as follows: Flight Test Ranges and Infrastructure Upgrades: - Manage, develop, sustain, and modernize MDA test facilities and infrastructure used to support Missile Defense System element and system-level flight tests, including range facilities, support vehicles and equipment, fixed and mobile sensors and instrumentation, test communications networks, and test situational awareness tools. - Develop and maintain test execution products that include flight vehicle and ground systems telemetry verification capabilities, good target call data and displays, flight safety data processing, sensor pointing, and data driven Subject Matter Expert (SME) displays. - Facilities Sustainment Restoration/Modernization (FSRM) Funds are required to repair, upgrade, and sustain numerous facilities, test infrastructure, and equipment maintained by MDA world-wide. Mobile Instrumentation Upgrades: - Provide Sea Based Systems continued sustainment of test instrumentation ships, Pacific Collector and Pacific Tracker, and associated telemetry and radar systems. Airborne Sensors: - Maintain existing High Altitude Observatory's (HALOs) that collect radiometric and photo-documentary performance data for strategic and tactical defense systems flight and ground tests. - Three replacements are HALO Fleet Renewal Program procured in FY 2019; Modification work ongoing with HALO-IR completed FY 2022 and HALO-IIR and HALO-IIIR to be completed by 1Q FY 2024. - Continue the phased modernization of the X-band Transportable Radar (XTR) in FY 2023 and FY 2024. Test Communications: - Provide operations and maintenance support for the Mission Voice Communications (MVC). - Maintain accreditation for the Transportable Telemetry Systems (TTS), Pacific Collector Range Safety System (PCRSS), and the MVC. - Manage, develop, maintain, and modernize the Ground Test (GT) communications network to support Missile Defense System ground testing. Data Management and Labs: - Establish authority and maintain configuration control of the test baseline.			
		FY 2024	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDs Test Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> - Develop, update, coordinate and deliver the IMTP, coordinated within MDA and External stakeholders DOT&E; Director, Developmental Test, Evaluation, and Assessments (D,DTE&A); the JFCC IMD; the Service OTAs; and the JTC; and provides an affordable and executable test plan to meet Warfighter needs and National Security commitments. - Coordinate the IMTP Special Access Programs (SAP) Annex with respect to changes to SAP Program Test Baseline and synchronize with the collateral IMTP. - Manage the approved test baseline by assessing all proposed changes to the Missile Defense System Test Schedule and Test Configurations for each Missile Defense System test event identified in the IMTP. - Support the Developmental Baseline Reviews and the annual Missile Defense System Accountability Reviews to assess baseline execution risk and verify Missile Defense System components are consistent with the approved test baseline. - Update and maintain the classified Test Resource Mission Planning-Tool (C) database. - Execute Flight Test Design Analysis ensuring test designs are safe and sufficient to meet test objectives. - Develop and maintain integrated test tools to support Truth Data Requirements Documents, Truth Data Packages, on-site Truth Quick-Look product development, pre- and post-test analysis test planning, and resource de-confliction; Integrated Data Management Plans, Data Handling Plans, Cyber documentation, data planning and management, library operations, deployment process; infrastructure requirements process; and test operations support. - Provide analytical capability for Flight and Ground test planning to include: test design feasibility assessments, truth data and sensor analysis, truth data requirements documentation and data packages; flight safety analysis and flight safety data packages; and telemetry link margin, collision avoidance, and pre- and post-test trajectory analyses. - Review Missile Defense System component programs' content on a quarterly basis to ensure consistency with the approved IMTP. - Maintain accreditation of the Orion Voice Switch Conferencing System. - Co-chair the Signature Working Group to review all signature models and identify technical limitations associated with radar and optical signatures used to support Missile Defense System ground and flight testing. - Manage the Missile Defense Data Center (MDDC) Program and its library, operations, and infrastructure providing centralized data management, archival, and distribution services. - Provide Range safety risk analysis through model development of target and interceptor debris assessments to determine mission risk assessment for mission risk decisions. - Operations and Maintenance for test communications networks and data acquisition, display, and distribution systems in support of flight and ground test events <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test	Project (Number/Name) MT04 / BMDS Test Program		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
<div>- Complete development of HALO-IIR and HALO-IIIR and declare Initial Operational Capability (IOC) in support of the Missile Defense System test program; Retire HALO-II and HALO-IV once HALO-IIR and HALO-IIIR reach IOC.</div> <div>- Continue the phased modernization of the X-band Transportable Radar (XTR) in FY 2023.</div> <div>- Continue FSRM efforts to meet mission facility condition requirements; to include Meck Island Pipe Pier Replacement and Bldg 5050 & 5098 Heating, Ventilation, and Air Conditioning (HVAC) replacements.</div> <div>- Continue the Meck Island Electrical Distribution Replacement.</div> <div>- Perform study for future Pacific Tracker/Pacific Collector replacement program.</div> <div>- Initiate Agency Ground Test Facility Infrastructure project.</div> <div>- Provide resources for the Department of Defense - Defense of Guam Architecture solution.</div> <div>FY 2024 Plans:</div> <div>- Complete development of HALO-IIR and HALO-IIIR; Retire HALO-II and HALO-IV once HALO-IIR and HALO-IIIR reach IOC.</div> <div>- Continue FSRM efforts to meet mission facility condition requirements; to include, Meck Island Pipe Pier Replacement Phase 3, Bldg 5050 & Missile Assembly Building (HVAC) replacements.</div> <div>- Enclosure and repair of a warehouse for remote site equipment at White Sands Missile Range (WSMR).</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>- Decrease from FY 2023 to FY 2024 is in accordance with IMTP requirements.</div>				
Title: Engineering and Test Analysis		26.045	21.114	24.681
Articles:		-	-	-
Description: The Engineering and Test Analysis effort provides essential Missile Defense System ground and flight test event planning, execution, and evaluation activities for each test event:				
<div>- Design test architecture, define test objectives and evaluation criteria, and define target requirements appropriate to the data collection requirements to assess Missile Defense System performance and anchor Models and Simulations.</div> <div>- Produce threat data for Missile Defense System ground and flight tests.</div> <div>- Coordinate with Missile Defense System OTA to address test issues, disposition them, coordinate them, and recommend action plans to achieve closure.</div> <div>- Deliver HWIL M&S integration test cases.</div> <div>- Integrate, test, and deliver end-to-end Missile Defense System simulations supporting ground test missions.</div> <div>- Analyze system-level interoperability.</div> <div>- Conduct modeling and technical analysis for Combatant Command Wargames and Exercises.</div> <div>- Utilize M&S for pre-test assessment and post-test review, and M&S updates.</div> <div>- Provide test configuration management risk assessments and anomaly/deficiency review, assessment and closure.</div>				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDs Test Program</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Analyze test results to identify verification and validation data collection shortfalls and reassign objectives to future test events as required. - Document Missile Defense System test observations for system-level test anomalies and coordinate the resulting Discrepancy Reports within the Failure Reporting, Analysis, and Corrective Action System. - Upgrade test analysis tools (e.g., Modular Analysis and Reporting Suite to enhance analysis capability and efficiency. <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: - SEE ABOVE</p> <p>FY 2024 Plans: - SEE ABOVE</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: - Increase from FY 2023 to FY 2024 is in accordance with IMTP requirements.</p>			
Accomplishments/Planned Programs Subtotals	363.703	345.263	339.182

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603890C: <i>BMD Enabling Programs</i>	616.800	588.847	597.720	-	597.720	620.823	639.398	648.954	650.432	Continuing	Continuing

Remarks

D. Acquisition Strategy

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

The MDA IMTP establishes and documents the test requirements for the Missile Defense System with the specific focus on collecting the data needed for the Verification, Validation, and Accreditation of the Missile Defense System M&S. This paradigm uses critical factor analysis to drive test design, planning, and execution

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test	Project (Number/Name) MT04 / BMDS Test Program
<p>for accrediting M&S, which is used to validate and assess system performance. With this test approach, MDA will establish confidence that the M&S used to evaluate the Missile Defense System represent real world behavior, thereby enabling simulation-based performance assessment to verify system functionality.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test				Project (Number/Name) MT04 / BMDs Test Program					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Planning and Operations - CSS - Advisory & Analytic Support	C/CPFF	MACAULAY-BROWN, INC : Various	0.000	0.000		0.000		1.040	Nov 2023	-		1.040	Continuing	Continuing	Continuing
Program Planning and Operations - CSS - Logistics, Security, Public Affairs, Human Resource, Safety	C/CPFF	Various : Various	0.000	0.000		0.000		1.215	Nov 2023	-		1.215	Continuing	Continuing	Continuing
Program Planning and Operations - CSS - QMA	C/CPFF	AI SOLUTIONS, INC. : Various	0.000	0.000		0.000		1.356	Nov 2023	-		1.356	Continuing	Continuing	Continuing
Program Planning and Operations - CSS - Test Support	C/CPFF	Various : Various	0.000	1.180	Nov 2021	0.000		0.000		-		0.000	0.000	1.180	0.000
Program Planning and Operations - Civilian Salaries	Allot	MDA : AL	32.724	34.746	Nov 2021	32.580	Nov 2022	34.359	Nov 2023	-		34.359	Continuing	Continuing	Continuing
Program Planning and Operations - FFRDC/ UARC	MIPR	DOD - USN - NAVY STRATEGIC SYSTEMS PROGRAMS (SSP) : Various	0.000	0.000		0.000		0.250	Nov 2023	-		0.250	Continuing	Continuing	Continuing
Program Planning and Operations - IMTP Planning and Data Management Tools	C/FP	Various : AL	140.088	0.000		0.000		0.000		-		0.000	0.000	140.088	0.000
Program Planning and Operations - Lab Analysis Infrastructure	MIPR	MIT-LL/Aerospace : AL/CA/MA	73.204	0.000		0.000		0.000		-		0.000	0.000	73.204	0.000
Program Planning and Operations - MT Contractor Support	C/CPFF	Various : AL/VA/CO/MA	0.000	40.768	Nov 2021	38.951	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test				Project (Number/Name) MT04 / BMDs Test Program					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Planning and Operations - OGA/UARC	FFRDC	GEORGIA TECH RESEARCH CORPORATION : AL	0.000	0.411	Nov 2021	0.000		0.431	Nov 2023	-		0.431	Continuing	Continuing	Continuing
Program Planning and Operations - Operational Test Agency	MIPR	ATEC, COTF, AFOTEC, JITC, CCDC, DAC : AL/CO/MD/TX/VA/AZ	164.360	29.257	Nov 2021	26.279	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Program Planning and Operations - Operational Test Agency - AFOTEC	MIPR	DOD - USAF - AIR FORCE OPERATIONAL TEST AND EVALUATION CENTER (AFOTEC) : CO	0.000	0.000		0.000		2.218	Oct 2023	-		2.218	Continuing	Continuing	Continuing
Program Planning and Operations - Operational Test Agency - ATEC	MIPR	DOD - USA - ARMY TEST AND EVALUATION COMMAND (ATEC) : Various	0.000	0.000		0.000		21.205	Nov 2023	-		21.205	Continuing	Continuing	Continuing
Program Planning and Operations - Operational Test Agency - CCDC	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : Various	0.000	0.000		0.000		2.157	Nov 2023	-		2.157	Continuing	Continuing	Continuing
Program Planning and Operations - Operational Test Agency - OPTEVFOR	MIPR	DOD - USN - COMMANDER, OPERATIONAL TEST AND EVALUATION FORCE (COTF) : VA	0.000	0.000		0.000		1.974	Nov 2023	-		1.974	Continuing	Continuing	Continuing
Program Planning and Operations - Operational Test Agency - RTC	MIPR	DOD - USA - REDSTONE TEST CENTER (RTC) : AL	0.000	0.000		0.000		1.056	Nov 2023	-		1.056	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test				Project (Number/Name) MT04 / BMDs Test Program					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Planning and Operations - Operational Test Agency - WSMR/JITC	MIPR	Various : Various	0.000	0.000		0.000		1.433	Nov 2023	-		1.433	Continuing	Continuing	Continuing
Program Planning and Operations - PPO - CSS - Test Support	C/CPFF	MP SOLUTIONS, LLC : Various	0.000	0.000		0.000		31.026	Nov 2023	-		31.026	Continuing	Continuing	Continuing
Program Planning and Operations - Service Level Agreement	C/CPFF	JACOBS TECHNOLOGY INC. : Various	0.000	1.411	Nov 2021	1.411	Nov 2022	1.400	Nov 2023	-		1.400	Continuing	Continuing	Continuing
Program Planning and Operations - Support to Flight Testing	C/CPAF	Northrop Grumman/ Lockheed Martin : AL/CO	72.822	0.000		0.000		0.000		-		0.000	0.000	72.822	0.000
Program Planning and Operations - Support to Ground Testing	C/CPAF	MDIOC/JRDC/IRES/ Northrop Grumman : AL/CO/VA/DC	28.675	0.000		0.000		0.000		-		0.000	0.000	28.675	0.000
Program Planning and Operations - Support to Test Resources	C/CPAF	Various : AL	30.969	0.000		0.000		0.000		-		0.000	0.000	30.969	0.000
Program Planning and Operations - Test Support Operations	C/CPFF	Various : Various	0.000	0.000		1.171	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Program Planning and Operations - Travel/TAC	C/Various	Various : Various	0.000	0.068	Nov 2021	1.695	Nov 2022	1.000	Nov 2023	-		1.000	Continuing	Continuing	Continuing
Flight Test - Flight Test - Flight Test Event Support	MIPR	Various : Various	0.000	0.000		0.000		0.573	Nov 2023	-		0.573	Continuing	Continuing	Continuing
Flight Test - Flight Test - Mobile Voice Communications	MIPR	DOD - USN - NAVAL AIR WARFARE CENTER WEAPONS DIVISION (NAWCWD), CHINA LAKE : Various	0.000	0.000		0.000		1.690	Nov 2023	-		1.690	Continuing	Continuing	Continuing
Flight Test - Flight Test - Network System Integration & OPDash	MIPR	DOD - USA - COMBAT CAPABILITIES	0.000	0.000		0.000		2.469	Nov 2023	-		2.469	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test				Project (Number/Name) MT04 / BMDs Test Program					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		DEVELOPMENT COMMAND (CCDC) : AL													
Flight Test - Guam Defense Test	Various	TBD : Various	0.000	0.000		0.000		5.584	Nov 2023	-		5.584	Continuing	Continuing	Continuing
Flight Test - IMTP Flight Test	C/Various	Various : Various	348.042	4.002	Oct 2021	8.185	Oct 2022	1.165	Oct 2023	-		1.165	Continuing	Continuing	Continuing
Ground Test - Advanced Research Center (ARC)	C/CPAF	DTECHLOGIC : VARIOUS	0.000	26.070	Nov 2021	22.431	Nov 2022	21.969	Oct 2023	-		21.969	Continuing	Continuing	Continuing
Ground Test - GT Assets - TCS/TCES/CDS/SEWS	MIPR	Various : Various	0.000	3.844	Oct 2021	0.000		4.458	Oct 2023	-		4.458	Continuing	Continuing	Continuing
Ground Test - Ground Test - Cyber Testing	MIPR	DOD - USA - PROGRAM EXECUTIVE OFFICE SIMULATIONS, TRAINING & INSTRUMENTATION (PEO STRI) THREAT SYSTEMS MANAGEMENT OFFICE (TSMO) : Various	0.000	3.480	Nov 2021	4.112	Nov 2022	4.290	Nov 2023	-		4.290	Continuing	Continuing	Continuing
Ground Test - Ground Test - PEO M&S Support	MIPR	Various : AL	0.000	5.183	Oct 2021	8.781	Oct 2022	4.758	Oct 2023	-		4.758	Continuing	Continuing	Continuing
Ground Test - Ground Test - Test Case Production	C/CPFF	TORCH TECHNOLOGIES INC : AL	0.000	0.000		5.218	Oct 2022	5.577	Oct 2023	-		5.577	Continuing	Continuing	Continuing
Ground Test - Ground Test Infrastructure	Various	Various : Various	120.782	1.958	Oct 2021	6.113	Oct 2022	2.162	Oct 2023	-		2.162	Continuing	Continuing	Continuing
Ground Test - Ground Test Non-IMTP	C/CPAF	COLSA CORPORATION : AL	4.058	0.000		0.000		0.000		-		0.000	0.000	4.058	0.000
Ground Test - IMTP Ground Testing	MIPR	AvMC, COLSA : AL/ CA	75.260	0.206	Oct 2021	1.132	Oct 2022	0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test				Project (Number/Name) MT04 / BMDS Test Program					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Ground Test - MDIOC GT Support	C/CPFF	JACOBS TECHNOLOGY INC. : VARIOUS	0.000	2.970	Oct 2021	3.251	Oct 2022	2.714	Oct 2023	-		2.714	Continuing	Continuing	Continuing
Ground Test - RASP Lab	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : Various	0.000	2.583	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Test Infrastructure - Ground Test Infrastructure	MIPR	Naval Information Warfare Systems Command : AL/CA	27.501	0.000		0.000		0.000		-		0.000	0.000	27.501	0.000
Test Infrastructure - ARC Facilities	MIPR	Various : AL	0.000	0.000		0.000		4.404	Nov 2023	-		4.404	Continuing	Continuing	Continuing
Test Infrastructure - Airborne Optics Mobile Assets	C/CPIF	L3 : OK	320.315	11.142	Oct 2021	2.783	Oct 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Test Infrastructure - Core Ground Test Labs and HWILS	C/IDIQ	Colsa/CCDC Aviation & Missile Center : AL/MD/FL/CA/OH/CO	217.990	0.000		0.000		0.000		-		0.000	0.000	217.990	0.000
Test Infrastructure - Data Management MDDC	C/CPFF	ANALYTICAL SERVICES, INC. : AL	0.000	26.589	Dec 2021	27.722	Dec 2022	28.888	Dec 2023	-		28.888	Continuing	Continuing	Continuing
Test Infrastructure - Enhanced GT Capability Assets	C/IDIQ	Colsa/Northrop Gurmman : AL/CO/FL/MD/HI	41.604	0.000		0.000		0.000		-		0.000	0.000	41.604	0.000
Test Infrastructure - FEM-02	TBD	Various : TBD	0.000	0.000		0.000		5.460	Nov 2023	-		5.460	Continuing	Continuing	Continuing
Test Infrastructure - Facilities Sustainment,	MIPR	Army Corps of Engineers/ Huntsville : AL	48.055	4.432	Nov 2021	3.985	Nov 2022	0.626	Dec 2023	-		0.626	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test				Project (Number/Name) MT04 / BMDs Test Program					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Restoration & Modernization (FSRM)															
Test Infrastructure - Flight Test Communications	MIPR	Various : Various	30.314	9.709	Nov 2021	12.555	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Test Infrastructure - Flight Test Non-IMTP	MIPR	CCDC - AvMC : AL / GA	0.607	1.058	Nov 2021	0.585	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Test Infrastructure - Flight Test Planning, FT Comms DISA/NAWC/NSWC	Various	Various : VARIOUS	0.000	0.150	Nov 2021	0.250	Nov 2022	2.961	Nov 2023	-		2.961	Continuing	Continuing	Continuing
Test Infrastructure - Flight Test Ranges and Infrastructure	MIPR	Various : Various	166.780	2.893	Nov 2021	1.821	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Test Infrastructure - Guam Defense Test	Various	TBD : Various	0.000	0.000		7.000	Nov 2022	4.000	Nov 2023	-		4.000	Continuing	Continuing	Continuing
Test Infrastructure - IMTP Planning & Data Management Tools/MET/ELTS	Various	Various : Various	88.790	1.326	Nov 2021	1.627	Nov 2022	1.548	Nov 2023	-		1.548	Continuing	Continuing	Continuing
Test Infrastructure - Sea Based Mobile Assets	MIPR	MARAD/NAWCAD : Various	141.740	0.000		2.003	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Test Infrastructure - Support to Test Resources	MIPR	Various : AL	153.748	0.000		0.000		0.000		-		0.000	0.000	153.748	0.000
Test Infrastructure - TTS 1-5	MIPR	DOD - USA - WHITE SANDS MISSILE RANGE (WSMR) : NM	0.000	2.500	Nov 2021	2.300	Nov 2022	2.036	Nov 2023	-		2.036	Continuing	Continuing	Continuing
Test Infrastructure - Tech Refresh	MIPR	Various : AL / VA / CO / MA	0.000	20.144	Nov 2021	23.415	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Test Infrastructure - Test Communications	C/IDIQ	ASI/WSMR : Gray Research/NRL/NAWC/CA/MD/DC/NM/AL/MA	181.573	0.000		0.000		0.000		-		0.000	0.000	181.573	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test				Project (Number/Name) MT04 / BMDs Test Program					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Infrastructure - Test Infrastructure - Cyber and Integration O&S	MIPR	ANALYTICAL SERVICES, INC. : Various	0.000	0.998	Nov 2021	1.114	Nov 2022	1.200	Nov 2023	-		1.200	Continuing	Continuing	Continuing
Test Infrastructure - Test Infrastructure - HALO O&S	MIPR	L-3 COMMUNICATIONS INTEGRATED SYSTEMS L.P. : OK	0.000	21.676	Nov 2021	16.632	Nov 2022	17.146	Nov 2023	-		17.146	Continuing	Continuing	Continuing
Test Infrastructure - Test Infrastructure - ISSO	MIPR	NORTHROP GRUMMAN : CO	1.065	1.550	Nov 2021	0.420	Nov 2022	1.300	Nov 2023	-		1.300	Continuing	Continuing	Continuing
Test Infrastructure - Test Infrastructure - Kauai Test Facility O&S	MIPR	DOE - DEPARTMENT OF ENERGY (DOE) : NM	0.000	3.000	Nov 2021	3.300	Nov 2022	3.500	Nov 2023	-		3.500	Continuing	Continuing	Continuing
Test Infrastructure - Test Infrastructure - Meck/RTS O&S	MIPR	DOD - USA - ARMY GARRISON KWAJALEIN-ATOLL (USAG KWAJ) : HI	0.000	2.970	Nov 2021	4.820	Nov 2022	5.887	Nov 2023	-		5.887	Continuing	Continuing	Continuing
Test Infrastructure - Test Infrastructure - Mission Execution & Display Distribution System (MEDDS)	C/TBD	TBD : TBD	0.000	5.313	Nov 2021	3.387	Nov 2022	8.854	Nov 2023	-		8.854	Continuing	Continuing	Continuing
Test Infrastructure - Test Infrastructure - Mission Voice Comms (MVC)	MIPR	Various : CA	0.000	0.000		0.000		3.000	Oct 2023	-		3.000	0.000	3.000	0.000
Test Infrastructure - Test Infrastructure - NSITE / GT Comms	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : Various	8.999	18.301	Nov 2021	11.650	Nov 2022	27.680	Nov 2023	-		27.680	Continuing	Continuing	Continuing
Test Infrastructure - Test Infrastructure - PMRF	MIPR	DOD - USN - PACIFIC MISSILE	0.000	1.850	Nov 2021	2.500	Nov 2022	2.400	Nov 2023	-		2.400	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test				Project (Number/Name) MT04 / BMDS Test Program					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
O&S / PRST Range - PMRF Support		RANGE FACILITY BARKING SANDS (PMRF) : HI													
Test Infrastructure - Test Infrastructure - PRST Range Support - NAWC/WSMR/VSFB/SMDC & Pacific Spaceport Complex Alaska	MIPR	Various : Various	0.000	3.683	Nov 2021	2.049	Nov 2022	4.144	Nov 2023	-		4.144	Continuing	Continuing	Continuing
Test Infrastructure - Test Infrastructure - Pacific Collector O&S / Pacific Tracker O&S	MIPR	DOT - DEPARTMENT OF TRANSPORTATION (DOT) : Various	0.000	5.027	Nov 2021	10.500	Nov 2022	9.300	Nov 2023	-		9.300	Continuing	Continuing	Continuing
Test Infrastructure - Test Infrastructure - Pacific Collector RSS (PCRSS) O&S / Pacific Tracker XTR-1 O&S	MIPR	DOD - USN - NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION (NAWCAD), PAX RIVER : Various	0.000	2.500	Nov 2021	4.281	Nov 2022	4.385	Nov 2023	-		4.385	Continuing	Continuing	Continuing
Test Infrastructure - Test Infrastructure - SIMDIS	MIPR	DOD - USN - NAVAL RESEARCH LABORATORY (NRL) : VA	0.000	0.225	Nov 2021	0.209	Nov 2022	0.200	Nov 2023	-		0.200	Continuing	Continuing	Continuing
Test Infrastructure - Test Infrastructure - WSMR O&S	MIPR	DOD - USA - WHITE SANDS MISSILE RANGE (WSMR) : NM	0.000	0.120	Nov 2021	1.140	Nov 2022	1.100	Nov 2023	-		1.100	Continuing	Continuing	Continuing
Test Infrastructure - Test Infrastructure - Wake Island (611th Support) O&S	MIPR	DOD - USAF - PACIFIC AIR FORCES REGIONAL SUPPORT CENTER (PRSC) : AK	0.000	4.845	Nov 2021	2.954	Nov 2022	5.653	Nov 2023	-		5.653	Continuing	Continuing	Continuing
Test Infrastructure - Test Infrastructure - XTR	MIPR	DOD - USA - COMBAT CAPABILITIES	0.551	1.270	Nov 2021	2.181	Nov 2022	2.385	Nov 2023	-		2.385	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test						Project (Number/Name) MT04 / BMDS Test Program			
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Systems Engineering Support		DEVELOPMENT COMMAND (CCDC) : Various													
Test Infrastructure - Test Infrastructure Improvements	Various	TBD : TBD	0.000	26.250	Nov 2021	0.000		0.000		-		0.000	0.000	26.250	0.000
Test Infrastructure - WPN - Test	C/CPFF	TBD : TBD	0.000	0.000		9.656	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Test Infrastructure - WPN O & S Services	C/CPFF	STRATEGIC ALLIANCE BUSINESS GROUP LLC : AL	0.000	0.000		0.000		1.216	Nov 2023	-		1.216	Continuing	Continuing	Continuing
Engineering and Test Analysis - CSS - TEAMS Support	C/CPFF	TBD : VARIOUS	45.442	5.873	Nov 2021	4.910	Nov 2022	4.988	Nov 2023	-		4.988	Continuing	Continuing	Continuing
Engineering and Test Analysis - CSS Various	C/Various	Various : Various	0.000	2.321	May 2022	0.000		0.000		-		0.000	0.000	2.321	0.000
Engineering and Test Analysis - Engineering and Test Analysis - OGA Support 2	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	0.000	1.953	Nov 2021	1.053	Nov 2022	0.262	Nov 2023	-		0.262	Continuing	Continuing	Continuing
Engineering and Test Analysis - FFRDC/UARC	FFRDC	MITRE : VA	3.187	0.000		0.000		0.000		-		0.000	0.000	3.187	0.000
Engineering and Test Analysis - FFRDC/UARC 2	FFRDC	Aerospace : CA	0.840	0.000		0.000		0.000		-		0.000	0.000	0.840	0.000
Engineering and Test Analysis - Industry Support	C/CPAF	Boeing : AL	26.695	0.000		0.000		0.000		-		0.000	0.000	26.695	0.000
Engineering and Test Analysis - Industry Support - NME	C/CPAF	Northrop Grumman-JRDC : CO, AL	2.048	0.000		0.000		0.000		-		0.000	0.000	2.048	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test					Project (Number/Name) MT04 / BMDS Test Program				
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Engineering and Test Analysis - Industry Support 2	C/CPAF	COLSA : AL, CO	4.219	0.958	Nov 2021	2.122	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Engineering and Test Analysis - OGA Support	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	136.764	14.940	Nov 2021	13.029	Nov 2022	19.431	Nov 2023	-		19.431	Continuing	Continuing	Continuing
Engineering and Test Analysis - OGA Support - NME	MIPR	LTPO : AL	5.114	0.000		0.000		0.000		-		0.000	0.000	5.114	0.000
Joint Emerging Operational Need (JEON) - JEON	SS/IDIQ	Lockheed Martin : Sunnyvale CA/ Huntsville, AL	126.018	0.000		0.000		0.000		-		0.000	0.000	126.018	0.000
Subtotal			2,870.943	363.703		345.263		333.483		-		333.483	Continuing	Continuing	N/A
Remarks															
- Recategorized and streamlined Missile Defense System Test cost category content to better align test priorities.															
- Increase in Network System Test Integration Environment (NSITE) / Ground Test communications (GT Comms) provides required support to MDA resources for Long Range Discrimination Radar (LRDR), Defense of Guam (DoG), related software and hardware upgrades, and associated cyber security requirements.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Planning and Operations - CSS - Business Operations	C/CPFF	Veterans Technology, LLC : Various	0.000	0.000		0.000		1.300	Nov 2023	-		1.300	Continuing	Continuing	Continuing
Program Planning and Operations - CSS - Office Admin, Acquisition	C/CPFF	Various : Various	0.000	0.000		0.000		0.960	Nov 2023	-		0.960	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)					Project (Number/Name)				
0400 / 4						PE 0603914C / Ballistic Missile Defense Test					MT04 / BMDS Test Program				
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Planning and Operations - CSS - Strategic Planning	C/CPFF	STRATEGIC ALLIANCE BUSINESS GROUP LLC : Various	0.000	0.000		0.000		2.264	Nov 2023	-		2.264	Continuing	Continuing	Continuing
Program Planning and Operations - CSS - Test Support/Strategic Planning, Info Tech Management	C/CPFF	FIVE STONES RESEARCH CORPORATION : VARIOUS	0.000	0.000		0.000		1.175	Nov 2023	-		1.175	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		5.699		-		5.699	Continuing	Continuing	N/A
Remarks															
N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			2,870.943	363.703		345.263		339.182		-		339.182	Continuing	Continuing	N/A
Remarks															
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023														
Appropriation/Budget Activity					R-1 Program Element (Number/Name)										Project (Number/Name)									
0400 / 4					PE 0603914C / Ballistic Missile Defense Test										MT04 / BMDS Test Program									
Significant Event Complete ▲		Milestone Decision Complete ★		Element Test Complete ◆		System Level Test Complete ●		Complete Activity ◆																
Significant Event Planned △		Milestone Decision Planned ☆		Element Test Planned ◇		System Level Test Planned ○		Planned Activity ◇																
					FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
GTI-ISR (21) (Missile Defense System Ground Test)					◆																			
FTP-21 E1 (P8.1.1)(LTPO, DT Intercept Flight Test)					▲																			
FTX-43 (OTHER, DT Tracking Exercise Flight Test)					▲																			
Israeli Cooperative Intercept Flight Test - FY 2022					◆	◆	◆	◆																
FTT-21 (TH, DT Intercept Flight Test)					▲																			
TH CTV-01a (LTPO, DT Interceptor Only Flight Test)					◆																			
GTI-08a (N/I) (Missile Defense System Ground Test)						◆																		
FTX-42 (OTHER, DT Target Only Flight Test)						▲																		
FTP-18 (I8-3) (OTHER, OT Intercept Flight Test)						▲																		
FTP-19 (I8-4) (OTHER, OT Intercept Flight Test)						▲																		
SICO-8a-1						◆																		
FEM-01						▲																		
FTP-21 E2 (P8.1.1)(LTPO, DT Intercept Flight Test)						▲																		
JFC-1 (OTHER, DT Tracking Exercise Flight Test)						◆																		
GCN 8B.7 SICO						◆																		
CVPA-08a (N/I) Part 1						▲																		
GTI-09 Sprint 1 (E/C) (Missile Defense System Ground Test)							◆																	
FTP-20 (I8-5) (OTHER, OT Intercept Flight Test)							▲																	
PACIFIC DRAGON-22 E1 (AEGIS 5.0, DT/OT Intercept Flight Test)							▲																	
PACIFIC DRAGON-22 E2 (AEGIS 5.0, DT/OT Tracking Exercise Flight Test)							▲																	
PACIFIC DRAGON-22 E3 (AEGIS 5.0, DT/OT Tracking Exercise Flight Test)							▲																	
FTX-45							▲																	
FTP-21 E3 (P8.1.1)(LTPO, DT Intercept Flight Test)							◆																	
GTI-08a Part 2 (N/I)								◆																

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023																			
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test										Project (Number/Name) MT04 / BMDS Test Program									
Significant Event Complete ▲ 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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
LR-08a-1 (N/I)														◆															
TBG-2 (OTHER, DT Tracking Exercise Flight Test)														▲															
GTD-08a (N/I) (Missile Defense System Ground Test)														◆															
JFTM-07 E1 (JAPAN, DT Tracking Exercise Flight Test)														▲															
JFTM-07 E2 (JAPAN, DT Intercept Flight Test)														▲															
JFTM-07 E3 (JAPAN, DT Tracking Exercise Flight Test)														▲															
JFTM-07 E4 (JAPAN, DT Intercept Flight Test)														▲															
SICO -09-1														◆															
GTD-07b (AA)														◆															
Israeli Cooperative Intercept Flight Test 2 - FY 2023														◇	◇	◇	◇												
Israeli Cooperative Intercept Flight Test 1 - FY 2023														◇	◇	◇	◇												
GTI-09 Sprint 2 (E/C) (Missile Defense System Ground Test)														◇															
CVPA-08a Part 2														△															
FTP-21 E4 (P8.1.1)(LTPO, DT Intercept Flight Test)														△															
AA-08b-a (N/I)														△															
SICO-23 (N/I)														◆															
GTI-23 Sprint 1 (N/I)														◆															
LR-08a-2 (N/I)														◇															
FTP-25 (P8.1.5) (OTHER, OT Intercept Flight Test)														△															
FTM-31 E1a (AEGIS SBT, DT/OT Intercept Flight Test)														◇															
SICO-09-2														◇															
CVPA-08b Part 1														△															
SICO-09-3														◇															
SICO-08a-02															◇														

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023																			
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test										Project (Number/Name) MT04 / BMDS Test Program									
Significant Event Complete ▲					Milestone Decision Complete ★					Element Test Complete ◆					System Level Test Complete ●					Complete Activity ◆									
Significant Event Planned △					Milestone Decision Planned ☆					Element Test Planned ◇					System Level Test Planned ○					Planned Activity ◇									
										FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
FTT-25 (TH, DT/OT Intercept Flight Test)														△															
TBG-3 (OTHER, DT Tracking Exercise Flight Test)														△															
SICO 9-4														◇															
CVPA-09 (E/C)														△															
AA-09 (E/C)														△															
FTM-48															△														
FTX-26 (OT) (SN, OT Target Only Flight Test)															△														
FTP-23 (LTPO, DT/OT Intercept Flight Test)															△														
FTP-24 E3 (LTPO, P8.1 OT-2c)															△														
FTP-24 E2 (LTPO, P8.1 OT-2b)															△														
FTP-24 E1 (LTPO, DT Intercept Flight Test)															△														
GTI-08b (N/I)															◇														
FTM-32 (AEGIS SBT, DT/OT Intercept Flight Test)																△													
FTG-12 (GM, DT/OT Intercept Flight Test)																△													
GTI-101 (E/C)																◇													
Israeli Cooperative Intercept Flight Test 1 - FY 2024																◇	◇	◇	◇										
GTI-ASI (24) (Missile Defense System Ground Test)																	◇												
FTX-40 (AEGIS 5.1, DT Tracking Exercise Flight Test)																	△												
FTX-23 (AEGIS 5.1, DT Tracking Exercise Flight Test)																	△												
GTD-08b (N/I)																	◇												
CVPA-08b Part 2																	△												
AA-08b																	△												
FTX-28 E2 (TH, DT/OT Tracking Exercise Flight Test)																		△											
GTI-102 (I)																		◇											

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023																			
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test										Project (Number/Name) MT04 / BMDs Test Program									
Significant Event Complete ▲					Milestone Decision Complete ★					Element Test Complete ◆					System Level Test Complete ●					Complete Activity ◆									
Significant Event Planned △					Milestone Decision Planned ☆					Element Test Planned ◇					System Level Test Planned ○					Planned Activity ◇									
										FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
FTX-28 E1 (TH, DT/OT Tracking Exercise Flight Test)															△														
GTI-ISR (23) (Missile Defense System Ground Test)															◇														
FTX-28 E3 (TH, DT/OT Tracking Exercise Flight Test)															△														
Pacific Dragon-24 E1 (ARAV-B)															△														
Pacific Dragon-24 E2 (ARAV-T1)															△														
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)															◇														
FTM-37 (AEGIS 5.1, DT/OT Intercept Flight Test)															△														
FEM-02															◇														
CVPA-13 (N/I) Part 1															△														
Israeli Cooperative Intercept Flight Test - FY 2025															◇	◇	◇	◇											
GTI-ISR (25) (Missile Defense System Ground Test)															◇														
FTM-43 (AEGIS 5.1, DT/OT Intercept Flight Test)															△														
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)															◇														
JFTX-01 E1 (JAPAN, DT Tracking Exercise Flight Test)															△														
JFTX-01 E2 (JAPAN, DT Tracking Exercise Flight Test)															△														
FTT-26 (MRBM T1)															△														
FTM-30 (AEGIS 5.1, DT/OT Intercept Flight Test)																△													
FTX-44 (OTHER, DT Target Only Flight Test)																△													
GTD-13 (N/I) (Missile Defense System Ground Test)															◇														
CVPA-13 (N/I) Part 2																△													
AA-13 (N/I)																△													
GTI-12 (E/C)																	◇												
GTD-12 (E/C) (Missile Defense System Ground Test)																		◇											
CVPA-12 (E/C)																		△											

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023														
Appropriation/Budget Activity					R-1 Program Element (Number/Name)										Project (Number/Name)									
0400 / 4					PE 0603914C / Ballistic Missile Defense Test										MT04 / BMDS Test Program									
Significant Event Complete ▲		Milestone Decision Complete ★			Element Test Complete ◆		System Level Test Complete ●						Complete Activity ◆											
Significant Event Planned △		Milestone Decision Planned ☆			Element Test Planned ◇		System Level Test Planned ○						Planned Activity ◇											
					FY 2022		FY 2023			FY 2024			FY 2025		FY 2026		FY 2027		FY 2028					
AA-12 (E/C)																△								
GTI-ASI (26) (Missile Defense System Ground Test)																◇								
TH CTV-03 (TH, DT Interceptor Only Flight Test)																△								
FTM-40 (AEGIS 6, DT/OT Intercept Flight Test)																△								
GTI-14 Sprint 1 (N/I)																	◇							
GTI-24 (N/I)																	◇							
Pacific Dragon-26 E2 (ARAV-T)																	△							
Pacific Dragon-26 E1 (ARAV-B)																	△							
CVPA-24 (I)																	△							
FTM-41 (AEGIS 6, DT/OT Intercept Flight Test)																		△						
Israeli Cooperative Intercept Flight Test - FY 2027																	◇	◇	◇	◇				
FTG-16 (GM, DT Intercept Flight Test)																		△						
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)																		◇						
CVPA-14 (N/I) Part 1																		△						
GTI-15 Sprint 1 (E/C)																			◇					
SICO-24 (N/I)																			◇					
FTT-22 (TH, DT/OT Intercept Flight Test)																			△					
AA-24																			△					
CVPA-24 (II)																			△					
FTG-17 (GM, DT/OT Intercept Flight Test)																				△				
GTD-14 (N/I) ((Missile Defense System Ground Test)																			◇					
FTX-47																				△				
GTI-ISR (27) (Missile Defense System Ground Test)																			◇					
FTM-42 (AEGIS 6, DT/OT Intercept Flight Test)																			△					

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023									
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test										Project (Number/Name) MT04 / BMDS Test Program									
Significant Event Complete ▲		Milestone Decision Complete ★		Element Test Complete ◆		System Level Test Complete ●		Complete Activity ◆																
Significant Event Planned △		Milestone Decision Planned ☆		Element Test Planned ◇		System Level Test Planned ○		Planned Activity ◇																
					FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
CVPA-14 (N/I) Part 2																	△							
AA-14 (N/I)																	△							
GTI-15 Sprint 2 (E/C)																	◇							
FTM-47 (MRBM T4 X3/BQM-177 X4)																		△						
GTD-15 (E/C)																	◇							
CVPA-15 (E/C)																		△						
AA-15 (E/C)																		△						
FTG-18 (DT/OT)																		△						
GTI-25 (N/I)																		◇						
CVPA-25 (I)																		△						
Pacific Dragon-28 E1 (ARAV-B)																		△						
Pacific Dragon-28 E2 (ARAV-B)																		◇						
GTI-ASI (28)																		◇						
GTI-16 Sprint 1 (N/I)																		◇						

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GTI-ISR (21) (Missile Defense System Ground Test)	1	2022	1	2022
FTP-21 E1 (P8.1.1)(LTPO, DT Intercept Flight Test)	1	2022	1	2022
FTX-43 (OTHER, DT Tracking Exercise Flight Test)	1	2022	1	2022
Israeli Cooperative Intercept Flight Test - FY 2022	1	2022	4	2022
FTT-21 (TH, DT Intercept Flight Test)	2	2022	2	2022
TH CTV-01a (LTPO, DT Interceptor Only Flight Test)	2	2022	2	2022
GTI-08a (N/I) (Missile Defense System Ground Test)	3	2022	3	2022
FTX-42 (OTHER, DT Target Only Flight Test)	3	2022	3	2022
FTP-18 (I8-3) (OTHER, OT Intercept Flight Test)	3	2022	3	2022
FTP-19 (I8-4) (OTHER, OT Intercept Flight Test)	3	2022	3	2022
SICO-8a-1	3	2022	3	2022
FEM-01	3	2022	3	2022
FTP-21 E2 (P8.1.1)(LTPO, DT Intercept Flight Test)	3	2022	3	2022
JFC-1 (OTHER, DT Tracking Exercise Flight Test)	3	2022	3	2022
GCN 8B.7 SICO	3	2022	3	2022
CVPA-08a (N/I) Part 1	3	2022	3	2022
GTI-09 Sprint 1 (E/C) (Missile Defense System Ground Test)	4	2022	4	2022
FTP-20 (I8-5) (OTHER, OT Intercept Flight Test)	4	2022	4	2022
PACIFIC DRAGON-22 E1 (AEGIS 5.0, DT/OT Intercept Flight Test)	4	2022	4	2022
PACIFIC DRAGON-22 E2 (AEGIS 5.0, DT/OT Tracking Exercise Flight Test)	4	2022	4	2022
PACIFIC DRAGON-22 E3 (AEGIS 5.0, DT/OT Tracking Exercise Flight Test)	4	2022	4	2022
FTX-45	4	2022	4	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023	
Appropriation/Budget Activity	R-1 Program Element (Number/Name)		Project (Number/Name)	
0400 / 4	PE 0603914C / Ballistic Missile Defense Test		MT04 / BMDS Test Program	
Events	Start		End	
	Quarter	Year	Quarter	Year
FTP-21 E3 (P8.1.1)(LTPO, DT Intercept Flight Test)	4	2022	4	2022
GTI-08a Part 2 (N/I)	1	2023	1	2023
LR-08a-1 (N/I)	1	2023	1	2023
TBG-2 (OTHER, DT Tracking Exercise Flight Test)	1	2023	1	2023
GTD-08a (N/I) (Missile Defense System Ground Test)	1	2023	1	2023
JFTM-07 E1 (JAPAN, DT Tracking Exercise Flight Test)	1	2023	1	2023
JFTM-07 E2 (JAPAN, DT Intercept Flight Test)	1	2023	1	2023
JFTM-07 E3 (JAPAN, DT Tracking Exercise Flight Test)	1	2023	1	2023
JFTM-07 E4 (JAPAN, DT Intercept Flight Test)	1	2023	1	2023
SICO -09-1	1	2023	1	2023
GTD-07b (AA)	1	2023	1	2023
Israeli Cooperative Intercept Flight Test 2 - FY 2023	1	2023	4	2023
Israeli Cooperative Intercept Flight Test 1 - FY 2023	1	2023	4	2023
GTI-09 Sprint 2 (E/C) (Missile Defense System Ground Test)	2	2023	2	2023
CVPA-08a Part 2	2	2023	2	2023
FTP-21 E4 (P8.1.1)(LTPO, DT Intercept Flight Test)	2	2023	2	2023
AA-08b-a (N/I)	2	2023	2	2023
SICO-23 (N/I)	2	2023	2	2023
GTI-23 Sprint 1 (N/I)	2	2023	2	2023
LR-08a-2 (N/I)	2	2023	2	2023
FTP-25 (P8.1.5) (OTHER, OT Intercept Flight Test)	2	2023	2	2023
FTM-31 E1a (AEGIS SBT, DT/OT Intercept Flight Test)	2	2023	2	2023
SICO-09-2	2	2023	2	2023
CVPA-08b Part 1	2	2023	2	2023
SICO-09-3	2	2023	2	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023	
Appropriation/Budget Activity	R-1 Program Element (Number/Name)		Project (Number/Name)	
0400 / 4	PE 0603914C / Ballistic Missile Defense Test		MT04 / BMDS Test Program	
Events	Start		End	
	Quarter	Year	Quarter	Year
SICO-08a-02	3	2023	3	2023
FTT-25 (TH, DT/OT Intercept Flight Test)	3	2023	3	2023
TBG-3 (OTHER, DT Tracking Exercise Flight Test)	3	2023	3	2023
SICO 9-4	3	2023	3	2023
CVPA-09 (E/C)	3	2023	3	2023
AA-09 (E/C)	3	2023	3	2023
FTM-48	4	2023	4	2023
FTX-26 (OT) (SN, OT Target Only Flight Test)	4	2023	4	2023
FTP-23 (LTPO, DT/OT Intercept Flight Test)	4	2023	4	2023
FTP-24 E3 (LTPO. P8.1 OT-2c)	4	2023	4	2023
FTP-24 E2 (LTPO. P8.1 OT-2b)	4	2023	4	2023
FTP-24 E1 (LTPO, DT Intercept Flight Test)	4	2023	4	2023
GTI-08b (N/I)	4	2023	4	2023
FTM-32 (AEGIS SBT, DT/OT Intercept Flight Test)	1	2024	1	2024
FTG-12 (GM, DT/OT Intercept Flight Test)	1	2024	1	2024
GTI-101 (E/C)	1	2024	1	2024
Israeli Cooperative Intercept Flight Test 1 - FY 2024	1	2024	4	2024
GTI-ASI (24) (Missile Defense System Ground Test)	2	2024	2	2024
FTX-40 (AEGIS 5.1, DT Tracking Exercise Flight Test)	2	2024	2	2024
FTX-23 (AEGIS 5.1, DT Tracking Exercise Flight Test)	2	2024	2	2024
GTD-08b (N/I)	2	2024	2	2024
CVPA-08b Part 2	2	2024	2	2024
AA-08b	2	2024	2	2024
FTX-28 E2 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024
GTI-102 (I)	3	2024	3	2024

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023	
Appropriation/Budget Activity	R-1 Program Element (Number/Name)		Project (Number/Name)	
0400 / 4	PE 0603914C / Ballistic Missile Defense Test		MT04 / BMDs Test Program	
Events	Start		End	
	Quarter	Year	Quarter	Year
FTX-28 E1 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024
GTI-ISR (23) (Missile Defense System Ground Test)	3	2024	3	2024
FTX-28 E3 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024
Pacific Dragon-24 E1 (ARAV-B)	4	2024	4	2024
Pacific Dragon-24 E2 (ARAV-T1)	4	2024	4	2024
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)	1	2025	1	2025
FTM-37 (AEGIS 5.1, DT/OT Intercept Flight Test)	1	2025	1	2025
FEM-02	1	2025	1	2025
CVPA-13 (N/I) Part 1	1	2025	1	2025
Israeli Cooperative Intercept Flight Test - FY 2025	1	2025	4	2025
GTI-ISR (25) (Missile Defense System Ground Test)	2	2025	2	2025
FTM-43 (AEGIS 5.1, DT/OT Intercept Flight Test)	2	2025	2	2025
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)	3	2025	3	2025
JFTX-01 E1 (JAPAN, DT Tracking Exercise Flight Test)	3	2025	3	2025
JFTX-01 E2 (JAPAN, DT Tracking Exercise Flight Test)	3	2025	3	2025
FTT-26 (MRBM T1)	3	2025	3	2025
FTM-30 (AEGIS 5.1, DT/OT Intercept Flight Test)	4	2025	4	2025
FTX-44 (OTHER, DT Target Only Flight Test)	4	2025	4	2025
GTD-13 (N/I) (Missile Defense System Ground Test)	4	2025	4	2025
CVPA-13 (N/I) Part 2	4	2025	4	2025
AA-13 (N/I)	4	2025	4	2025
GTI-12 (E/C)	1	2026	1	2026
GTD-12 (E/C) (Missile Defense System Ground Test)	2	2026	2	2026
CVPA-12 (E/C)	2	2026	2	2026
AA-12 (E/C)	2	2026	2	2026

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>		Project (Number/Name) MT04 / <i>BMDs Test Program</i>	
		Start		End	
Events	Quarter	Year	Quarter	Year	
GTI-ASI (26) (Missile Defense System Ground Test)	3	2026	3	2026	
TH CTV-03 (TH, DT Interceptor Only Flight Test)	3	2026	3	2026	
FTM-40 (AEGIS 6, DT/OT Intercept Flight Test)	3	2026	3	2026	
GTI-14 Sprint 1 (N/I)	4	2026	4	2026	
GTI-24 (N/I)	4	2026	4	2026	
Pacific Dragon-26 E2 (ARAV-T)	4	2026	4	2026	
Pacific Dragon-26 E1 (ARAV-B)	4	2026	4	2026	
CVPA-24 (I)	4	2026	4	2026	
FTM-41 (AEGIS 6, DT/OT Intercept Flight Test)	1	2027	1	2027	
Israeli Cooperative Intercept Flight Test - FY 2027	1	2027	4	2027	
FTG-16 (GM, DT Intercept Flight Test)	2	2027	2	2027	
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)	2	2027	2	2027	
CVPA-14 (N/I) Part 1	2	2027	2	2027	
GTI-15 Sprint 1 (E/C)	3	2027	3	2027	
SICO-24 (N/I)	3	2027	3	2027	
FTT-22 (TH, DT/OT Intercept Flight Test)	3	2027	3	2027	
AA-24	3	2027	3	2027	
CVPA-24 (II)	3	2027	3	2027	
FTG-17 (GM, DT/OT Intercept Flight Test)	4	2027	4	2027	
GTD-14 (N/I) ((Missile Defense System Ground Test)	4	2027	4	2027	
FTX-47	4	2027	4	2027	
GTI-ISR (27) (Missile Defense System Ground Test)	4	2027	4	2027	
FTM-42 (AEGIS 6, DT/OT Intercept Flight Test)	4	2027	4	2027	
CVPA-14 (N/I) Part 2	4	2027	4	2027	
AA-14 (N/I)	4	2027	4	2027	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>		Project (Number/Name) MT04 / <i>BMDs Test Program</i>	
		Start		End	
Events	Quarter	Year	Quarter	Year	
GTI-15 Sprint 2 (E/C)	1	2028	1	2028	
FTM-47 (MRBM T4 X3/BQM-177 X4)	2	2028	2	2028	
GTD-15 (E/C)	2	2028	2	2028	
CVPA-15 (E/C)	2	2028	2	2028	
AA-15 (E/C)	2	2028	2	2028	
FTG-18 (DT/OT)	3	2028	3	2028	
GTI-25 (N/I)	3	2028	3	2028	
CVPA-25 (I)	3	2028	3	2028	
Pacific Dragon-28 E1 (ARAV-B)	4	2028	4	2028	
Pacific Dragon-28 E2 (ARAV-B)	4	2028	4	2028	
GTI-ASI (28)	4	2028	4	2028	
GTI-16 Sprint 1 (N/I)	4	2028	4	2028	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test				Project (Number/Name) MC04 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC04: Cyber Operations	70.163	8.025	8.205	8.333	-	8.333	8.552	8.719	8.893	9.071	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

Missile Defense System Test Cyber Operations sustain Missile Defense Agency (MDA) Risk Management Framework (RMF) Standards, Computer Network Defense Service Provider and Controls Validation Testing activities: validation results; risk assessments; and reviews of proposed Program Manager/Information Systems Security Manager Plans of Action and Milestones (POA&Ms) for MDA Missile Defense Test Program. It maintains the Certification and Accreditation (C&A) data repository, capturing the RMF documentation (artifacts, validation results, and Cyber Risk Assessment results, and Authorizing Official (AO) accreditation decisions) and POA&Ms on all MDA information systems. This project supports the monitoring and tracking of cyber mitigations detailed in Information Technology security POA&Ms. Activities include preparation of C&A documentation and accreditation recommendations to the MDA Senior Information Systems Security Officer/Security Controls Assessor and AO. 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 Systems Modernization Act of 2014. The MDA Information Technology Networks and Systems and Cross Domain Solution (CDS) provide oversight and guidance for implementing standard CDS security policies across the Missile Defense System.

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

	FY 2022	FY 2023	FY 2024
Title: Network / System Certification and Accreditation (C&A)	8.025	8.205	8.333
Articles:	-	-	-
Description: The Missile Defense System Test Network/System Certification and Accreditation program will: <ul style="list-style-type: none"> - Provide cyber program oversight of all MDA Test Directorate (DT) information systems, networks, sponsored remote sites, ground and flight test infrastructure, and exercise/war game infrastructures. This includes management of: cyber compliance and authorization; cyber training and awareness; information system secure configuration; assessment and incident management; and computer network defense. - Fund Missile Defense System Test Program Information Systems Security Manager civilian salaries. - Conduct cyber/information assurance engineering and architecture planning for the Missile Defense System Test Program information technology systems. - Plan and test the Cyber controls for Missile Defense System. - Develop DT National Institute of Standards and Technology certification and accreditation packages. - Leverage CDS as single authority implementing standard security policies for test and across the Missile Defense System. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MC04 / <i>Cyber Operations</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>- Continue to define cyber investments, risks and benefits used to reduce vulnerabilities and protect critical administrative and test data.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p><i>FY 2023 Plans:</i> - SEE ABOVE</p> <p><i>FY 2024 Plans:</i> - SEE ABOVE</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> - N/A</p>			
Accomplishments/Planned Programs Subtotals		8.025	8.205
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
The Cyber Operations is a collaboration between subject matter expertise in the Government, Federally Funded Research and Development Centers (FFRDC), University Affiliated Research Centers, Contract Support Services, and Industry.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test				Project (Number/Name) MC04 / Cyber Operations					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - Cybersecurity Civ	Allot	MDA : Various	2.830	0.127	Nov 2021	0.161	Nov 2022	0.000		-		0.000	0.000	3.118	0.000
Network / System Certification and Accreditation (C&A) - MC Contractor Support	C/CPFF	Various : Various	40.802	2.968	Nov 2021	3.753	Nov 2022	0.000		-		0.000	0.000	47.523	0.000
Network / System Certification and Accreditation (C&A) - MC Contractor Support, CSM/ CND	C/CPFF	SYSTEM HIGH CORPORATION : VARIOUS	0.000	0.000		0.000		1.177	Nov 2023	-		1.177	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Network / System Certification and Accreditation (C&A) - CSS - BMDS CSM CND	C/CPFF	SYSTEM HIGH CORPORATION : Various	0.000	0.000		0.000		3.268	Nov 2023	-		3.268	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Network / System Certification and Accreditation (C&A) - CSS - Test Support/CCRM	C/CPFF	DECISIVE ANALYTICS CORPORATION : Various	0.000	0.000		0.000		1.070	Nov 2023	-		1.070	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Test Support CSSP	MIPR	CCDC-AvMC, Colsa, GSA, SAIC : AL	26.531	4.930	Nov 2021	4.291	Nov 2022	0.000		-		0.000	0.000	35.752	0.000
Network / System Certification and Accreditation (C&A) - Test Support CSSP - COLSA	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC)	0.000	0.000		0.000		1.650	Nov 2023	-		1.650	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
0400 / 4						PE 0603914C / Ballistic Missile Defense Test				MC04 / Cyber Operations					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		AVIATION AND MISSILE CENTER (AVMC) : VARIOUS													
Network / System Certification and Accreditation (C&A) - Test Support CSSP - GSA	MIPR	GSA - GENERAL SERVICES ADMINISTRATION (GSA) : AL	0.000	0.000		0.000		1.168	Nov 2023	-		1.168	Continuing	Continuing	Continuing
Subtotal			70.163	8.025		8.205		8.333		-		8.333	Continuing	Continuing	N/A
Remarks															
N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			70.163	8.025		8.205		8.333		-		8.333	Continuing	Continuing	N/A
Remarks															
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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PE 0603914C: *Ballistic Missile Defense Test* **UNCLASSIFIED** Volume 2a - 527
 Missile Defense Agency Page 39 of 46 R-1 Line #90

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test	Project (Number/Name) MC04 / Cyber Operations	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC04 Cyber Operations Planned	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test				Project (Number/Name) MD40 / Program Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program Wide Support	148.260	17.228	13.356	12.940	-	12.940	16.128	17.699	19.539	20.126	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

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

A. Mission Description and Budget Item Justification

PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	17.228	13.356	12.940
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p><i>FY 2023 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2024 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> N/A</p>			
Accomplishments/Planned Programs Subtotals		17.228	13.356
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test					Project (Number/Name) MD40 / Program Wide Support				
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations Management	Various	Various : Multi: AL, CA, CO, VA	6.459	0.000		0.000		0.000		-		0.000	0.000	6.459	0.000
Program Wide Support - Agency Operations and Support	C/CPFF	NETWORK MANAGEMENT RESOURCES, INC. : AL	0.000	0.000		1.150	Nov 2022	2.602	Nov 2023	-		2.602	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	DOD - DEFENSE FINANCE AND ACCOUNTING SERVICES (DFAS) : IN	6.031	5.905	Nov 2021	2.561	Nov 2022	3.016	Nov 2023	-		3.016	Continuing	Continuing	Continuing
Program Wide Support - Facilities and Maintenance - SRM	MIPR	Various : Multi: AK,AL,CA,VA	11.841	0.000		0.000		0.000		-		0.000	0.000	11.841	0.000
Subtotal			24.331	5.905		3.711		5.618		-		5.618	Continuing	Continuing	N/A
Remarks N/A															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations and Support Services	C/CPFF	Veterans Technology, LLC : AL	123.929	11.323	Jun 2022	9.645	Dec 2022	7.322	Dec 2023	-		7.322	Continuing	Continuing	Continuing
Subtotal			123.929	11.323		9.645		7.322		-		7.322	Continuing	Continuing	N/A
Remarks N/A															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency											Date: March 2023				
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test					Project (Number/Name) MD40 / Program Wide Support					
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			148.260	17.228		13.356		12.940		-		12.940	Continuing	Continuing	N/A

Remarks

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

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023														
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603914C / Ballistic Missile Defense Test										Project (Number/Name) MD40 / Program Wide Support									
Significant Event Complete ▲					Milestone Decision Complete ★					Element Test Complete ◆					System Level Test Complete ●					Complete Activity ◆									
Significant Event Planned △					Milestone Decision Planned ☆					Element Test Planned ◇					System Level Test Planned ○					Planned Activity ◇									
										FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
MD40 Program-Wide Support										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇			

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	4,509.880	560.445	579.075	570.258	-	570.258	583.747	642.329	664.683	510.063	Continuing	Continuing
MC05: <i>Cyber Operations</i>	9.556	1.551	1.512	1.752	-	1.752	1.794	1.830	1.867	1.903	Continuing	Continuing
MT05: <i>BMDs Targets Program</i>	4,328.182	539.734	556.930	548.058	-	548.058	560.191	613.279	634.554	483.276	Continuing	Continuing
MD40: <i>Program Wide Support</i>	172.142	19.160	20.633	20.448	-	20.448	21.762	27.220	28.262	24.884	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Decrease from FY 2023 to FY 2024 reflects the Congressional Plus-Up funding in FY 2023 for reactive target simulation development, advanced target front end configuration 3 technology maturation, and for the Missile Defense System integration and analysis center prototype.

A. Mission Description and Budget Item Justification

The Missile Defense System Targets Program provides centrally managed targets and countermeasures development and procurement for a cost effective, integrated system-level approach to Missile Defense System testing. Based on engineering assessments of threat intelligence data, the Missile Defense System Targets Program develops, builds, and supports the launch of SRBM (Less than 1000 Kilometer range) targets, Medium Range Ballistic Missile (1000-3000 Kilometer Range) targets, Intermediate Range Ballistic Missile (3000-5500 Kilometer Range) targets, Intercontinental Ballistic Missile (Greater than 5500 Kilometer range) targets, and Multi-Class Components to test, verify, and validate the performance of the Missile Defense System against threats. The Missile Defense System Targets Program provides an economical and reliable inventory of targets, which are representative of feasible future threats and supports demonstration of the capability of the evolving layered Missile Defense System in a simultaneous test and operations threat environment.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	560.478	559.513	555.341	-	555.341
Current President's Budget	560.445	579.075	570.258	-	570.258
Total Adjustments	-0.033	19.562	14.917	-	14.917
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-22.438			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	42.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.033	0.000			
• Other Adjustment	0.000	0.000	14.917	-	14.917

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets
<p>Change Summary Explanation</p> <p>Project: MT05 BMDS Target Program</p> <p>FY 2023 Congressional Add Total \$42.0 million:</p> <ul style="list-style-type: none">- Architecture reactive target simulation development (\$20.0 million)- Missile Defense System architecture integration and analysis center prototype (\$12.0 million)- Advanced target front end configuration 3 technology maturation (\$10.0 million) <p>FY 2023 Congressional Directed Reductions Total \$22.438:</p> <ul style="list-style-type: none">- Prior year test adjustments (\$22.438 million) <p>Increase in FY2024 provides for Hypersonic Target Vehicle 2 (HTV-2) development and to support future flight tests in accordance with the IMTP.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets				Project (Number/Name) MC05 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC05: Cyber Operations	9.556	1.551	1.512	1.752	-	1.752	1.794	1.830	1.867	1.903	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from FY 2023 to FY2024 provides additional support for cyber operations.

A. Mission Description and Budget Item Justification

Cybersecurity Operations sustains Missile Defense Agency (MDA) Targets and Countermeasures (TC) Risk Management Framework (RMF) standards, Computer Network Defense (CND) Local Control Center, and Controls Validation Testing (CVT) activities. TC cybersecurity operations maintain the Authorization and Accreditation Enterprise Mission Assurance Support Service (eMASS) repository, capturing the RMF documentation (artifacts, validation results, and Cybersecurity Risk Assessment results, Authorization Official accreditation decisions, and Plans of Action and Milestones (POA&Ms) on all MDA TC information systems non-compliance activities). The TC Cybersecurity operations support the monitoring and tracking of Cybersecurity mitigations detailed in the cybersecurity POA&Ms within eMASS. The CND Local Control Center validates Assured Compliance Assessment Solution vulnerabilities, Endpoint Security Solution compliance, ArcSight deployment, and ensures distribution and tracking of Cybersecurity Tasking Orders for the entire TC cybersecurity portfolio. The Independent Verification and Validation group testing ensures the integrity and compliance of the MDA TC cybersecurity compliance for all TC cybersecurity portfolio. These validation activities include the analysis of validation results from compliance monitoring, risk assessments and reviews of proposed Program Manager/Information Systems Security Manager POA&Ms for the MDA Targets and Countermeasures program. Activities in the Project are necessary to comply with the Federal Information Security Management Act, Department of Defense (DoD), and MDA cybersecurity standards/requirements.

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

		FY 2022	FY 2023	FY 2024
Title: Network / System Certification and Accreditation (C&A)		1.551	1.512	1.752
Articles:		-	-	-
Description: The Network/Systems C&A project sustains the MDA DoD RMF and CVT activities, analysis of validation results, risk assessments and reviews of proposed Program Manager/Information Assurance Manager POA&Ms for MDA Ballistic Missile Defense Test Program mission systems. It maintains the C&A eMASS data repository, capturing the RMF documentation (artifacts, validation results, and Information Assurance Risk Assessment results, and Designated Approving Authority accreditation decisions) and POA&M on all MDA information systems.				
Specific and/or unique accomplishments to each FY are as follows:				
FY 2023 Plans:				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MC05 / <i>Cyber Operations</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
- SEE ABOVE. FY 2024 Plans: - SEE ABOVE. FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides additional support for cyber operations.			
Accomplishments/Planned Programs Subtotals		1.551	1.512
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
The acquisition strategy for MDA Consolidated Support for Assistance Services (A&AS) consists of contract actions to industry for: a) engineering and technical support; b) studies, analyses, and evaluations; and management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 A&AS support.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets				Project (Number/Name) MC05 / Cyber Operations					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - TEAMS Support	C/IDIQ	Various : AL	3.889	1.395	Nov 2021	1.351	Nov 2022	0.000		-		0.000	0.000	6.635	0.000
Network / System Certification and Accreditation (C&A) - TEAMS Support - IT and Cyber Management	C/IDIQ	FIVE STONES RESEARCH CORPORATION : AL	0.000	0.000		0.000		1.100	Nov 2023	-		1.100	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - TEAMS Support / Civilian Pay - Cyber Compliance and Risk Management	Various	Various : Various	0.667	0.156	Nov 2021	0.161	Nov 2022	0.652	Nov 2023	-		0.652	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Windows 10 Upgrade	C/CPAF	Northrop Grumman Space Systems (NGSS) : Chandler, AZ	5.000	0.000		0.000		0.000		-		0.000	0.000	5.000	0.000
Subtotal			9.556	1.551		1.512		1.752		-		1.752	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			9.556	1.551		1.512		1.752		-		1.752	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may occur incrementally throughout the year. Previous references to Orbital Sciences Corporation and Northrop Grumman Innovation Systems have been updated to Northrop Grumman Space Systems to reflect current corporate structure.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023										
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets					Project (Number/Name) MC05 / Cyber Operations										
Significant Event Complete ▲		Milestone Decision Complete ★		Element Test Complete ◆		System Level Test Complete ●				Complete Activity ◆										
Significant Event Planned △		Milestone Decision Planned ☆		Element Test Planned ◇		System Level Test Planned ○				Planned Activity ◇										
					FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028			
MC05 Cyber Activities (FY 2022)					◇	◇	◇	◇												
MC05 Cyber Activities (FY 2023)							◇	◇	◇	◇										
MC05 Cyber Activities (FY 2024)									◇	◇	◇	◇								
MC05 Cyber Activities (FY 2025)											◇	◇	◇	◇						
MC05 Cyber Activities (FY 2026)													◇	◇	◇	◇				
MC05 Cyber Activities (FY 2027)															◇	◇	◇	◇		
MC05 Cyber Activities (FY 2028)																	◇	◇	◇	◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets	Project (Number/Name) MC05 / Cyber Operations	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC05 Cyber Activities (FY 2022)	1	2022	4	2022
MC05 Cyber Activities (FY 2023)	1	2023	4	2023
MC05 Cyber Activities (FY 2024)	1	2024	4	2024
MC05 Cyber Activities (FY 2025)	1	2025	4	2025
MC05 Cyber Activities (FY 2026)	1	2026	4	2026
MC05 Cyber Activities (FY 2027)	1	2027	4	2027
MC05 Cyber Activities (FY 2028)	1	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets				Project (Number/Name) MT05 / BMDS Targets Program			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MT05: BMDS Targets Program	4,328.182	539.734	556.930	548.058	-	548.058	560.191	613.279	634.554	483.276	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2023 to FY 2024 reflects the Congressional Plus-Up funding in FY 2023 for reactive target simulation development, advanced target front end configuration 3 technology maturation, and for the Missile Defense System integration and analysis center prototype.

A. Mission Description and Budget Item Justification

The mission of the Missile Defense System Targets Program is to provide an economical and reliable inventory of targets that are representative of feasible future threats. These targets enable demonstration of Missile Defense System capabilities in operationally realistic scenarios. The Missile Defense System Targets Program develops and acquires five target types across four target classes. The classes include: SRBM, Medium Range Ballistic Missiles (MRBM), Intermediate Range Ballistic Missiles (IRBM), and Intercontinental Ballistic Missiles (ICBM). The target types (Type 1-5) designate the complexity of the target within its class. Type-1 (T1) targets are simple baseline configurations. Type-2 (T2) targets have increased capability or complexity. Type-3 (T3) targets have unique configurations. T4 targets are subscale targets. Type-5 (T5) targets are advanced targets.

The Missile Defense System Targets Program develops and provides Modified Ballistic Re-Entry Vehicles (MBRV) and Countermeasures that can be used across the spectrum of target types and classes. The Missile Defense System Targets Program provides target digital models that enable the Missile Defense Agency (MDA) weapon system program offices to simulate end to end sensor and interceptor performance during pre-mission analysis. The Missile Defense System Targets Program also provides maintenance, aging surveillance, refurbishment, and routine testing of government furnished equipment boosters and target components.

The Missile Defense System Targets Program carefully plans the year of execution to assure the best use of appropriated funds. However, the Missile Defense System Targets Program must be flexible in its execution of the program in order to respond to emerging real world threats or changes in the intelligence community estimates of when a threat will be deployed. The Missile Defense System Targets Program must also work with missile defense systems engineers on a continuing basis to align the targets program to the Missile Defense System need to demonstrate capabilities as reflected in the Missile Defense System IMTP. The Missile Defense System Targets Program makes every effort to reduce instability in contracts, production base and budget while managing in this dynamic work environment.

The Missile Defense System Targets Program develops and builds targets and countermeasures at multiple locations including: Orlando, FL; Huntsville, AL; and Chandler, AZ. Storage and maintenance facilities are also located throughout the country including: Huntsville, AL; White Sands, NM; Ogden, UT; Tooele, UT; and Cape Canaveral Air Force Station, FL.

The Missile Defense System Targets Program consists of four major areas: Consumables, Program Planning and Operations, Resources, and Flight Test Execution.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDs Targets Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
Title: Consumables - Short Range Ballistic Missiles (SRBM) Description: Consumables include SRBM target hardware development and manufacturing. Target development includes non-recurring engineering, MBRVs, Countermeasures, and launch support equipment for Missile Defense System flight testing as required by the Missile Defense System IMTP. Target development provides air and ground launch capabilities to maximize flexibility in MDA test design. Development activities include requirements decomposition, design, modeling and simulation, qualification testing, characterization, missionization, and mission analysis. The Missile Defense System Targets Program Office manages target configuration, component interface specifications, range integration, reliability, mission assurance, and costs. The Missile Defense System Targets Program ensures target designs are producible, reliable, and affordable. Target manufacturing includes the build of targets and target components that are required to execute the Missile Defense System IMTP. Manufacturing includes government furnished equipment and new component acquisition, assembly, and integration. Also included are target characterization, quality and mission assurance, transportation, and logistics support. The Missile Defense System Targets Program delivers fully assembled and integrated targets to the Missile Defense System Test Program. Future revisions to the IMTP will likely affect target types and quantities noted in the Planned Accomplishments. Beginning in FY 2022, the Missile Defense System Targets Program began sequentially numbering SRBM T4 and MRBM T4 ship sets separately. Specific and/or unique planned accomplishments to each FY are as follows: FY 2023 Plans: -SRBM T4 - continue development efforts, complete manufacture of SRBM T4 Ship Sets 1-3 to support pre-ship readiness reviews and flight tests in FY 2024 (Ship Sets 1-3); continue manufacture of SRBM T4 Ship Set 4 to support pre-ship readiness review in FY 2026 and flight test in FY 2027 (Ship Set 4) -Continue SRBM T4 kit development and manufacturing efforts to support future target performance requirements for flight tests beginning in FY 2024 FY 2024 Plans: -SRBM T4 - continue development efforts, complete manufacture of SRBM T4 Ship Set 4 to support pre-ship readiness review in FY 2026		75.001	49.698
Articles:		-	-
			26.739

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDs Targets Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
-Continue SRBM T4 kit development and manufacturing efforts to support future target performance requirements for flight tests beginning in FY 2024 <i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Decrease from FY 2023 to FY 2024 reflects completion of three SRBM T4 ship sets in FY 2023 to support future flight tests in accordance with current IMTP requirements			
<i>Title:</i> Consumables - Medium Range Ballistic Missiles (MRBM) <i>Description:</i> MRBM target hardware development and manufacturing is consistent with the Description found in the Consumables-SRBM section. Specific and/or unique planned accomplishments to each FY are as follows: <i>FY 2023 Plans:</i> -MRBM Type 3 Configuration 2 (MRBM T3C2) - complete manufacturing of Ship Sets 6 and 7 to support pre-ship readiness reviews in FY 2023 and flight tests in FY 2023 (Ship Set 6) and FY 2024 (Ship Set 7) -MBRV-7 - continue recurring engineering efforts and manufacturing of MBRV-7 front sections to support MRBM flight tests -MRBM T1/T2 - continue manufacturing and qualification of Ship Sets 2-7 to support pre-ship readiness reviews in FY 2023 (Ship Sets 2 and 4), FY 2024 (Ship Sets 3 and 5), and FY 2025 (Ship Sets 6 and 7) and flight tests in FY 2023 (Ship Sets 2 and 4), FY 2024 (Ship Sets 5), and FY 2025 (Ship Sets 3, 6, and 7); initiate manufacturing and qualification of Ship Set 8 to support pre-ship readiness review and flight test in FY 2027 (Ship Set 8) -MRBM T4 - complete manufacturing of Ship Sets 1-3 to support pre-ship readiness reviews in FY 2026 (Ship Set 1) and FY 2027 (Ship Sets 2 and 3) and flight tests in FY 2027; continue manufacturing of Ship Sets 4 and 5 to support pre-ship readiness reviews and flight tests in FY 2027 (Ship Set 4) and beyond the Future Years Defense Program (Ship Set 5) -MRBM T5 Advanced Target - complete development and manufacturing of Ship Sets 1 and 2 to support pre-ship readiness reviews and flight tests in FY 2023 (Ship Set 1) and FY 2024 (Ship Set 2) -Continue development efforts for an alternate advanced target re-entry vehicle to address emerging threats -Continue production of additional MRBM T1/T2 targets to support future flight test requirements -Continue development efforts for MRBM Countermeasures <i>FY 2024 Plans:</i> -MRBM T3C2 - complete manufacturing of Ship Set 7 to support flight test in FY 2024 -MBRV-7 - continue recurring engineering efforts and manufacturing of MBRV-7 front sections to support MRBM flight tests		265.848	226.807
<i>Articles:</i>		-	-
			268.894

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDs Targets Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>-MRBM T1/T2 - complete manufacturing and qualification of Ship Sets 5 and 6 to support pre-ship readiness reviews in FY 2024 (Ship Set 5) and FY 2025 (Ship Set 6); continuing manufacturing and qualification of Ship Sets 7 and 8 for pre-ship readiness reviews in FY 2025 (Ship Set 7) and FY 27 (Ship Set 8)</p> <p>-MRBM T4 - continue manufacturing of kit hardware in support of future flight test requirements</p> <p>-MRBM T5 Advanced Target - complete development and manufacturing of Ship Set 1 to support pre-ship readiness reviews in FY 2024 (Ship Set 1); continue development and manufacturing of Ship Sets 2 through 6 to support pre-ship readiness reviews in FY 2025 (Ship Set 2), in FY 2027 (Ship Set 3), and beyond the Future Years Defense Program (FYDP) (Ship Sets 4-6)</p> <p>-Initiate development efforts for new re-entry vehicle designs to support front ends performance requirements in future flight tests</p> <p>-Continue development and production efforts for Hypersonic Target Vehicle 2 (HTV-2), an alternate advanced target re-entry vehicle to address emerging threats</p> <p>-Continue development efforts for MRBM Countermeasures</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides increased MRBM T5 target hardware manufacturing, increased countermeasures development, and HTV-2 development and production to support future flight tests in accordance with the current IMTP. The increase in FY 2024 includes \$46.565 million for the Pacific Deterrence Initiative for additional MRBM T5 target hardware manufacturing and flight test execution.</p>			
Title: Consumables - Intermediate Range Ballistic Missiles (IRBM)		22.934	31.728
Articles:		-	-
Description: IRBM target hardware development and manufacturing is consistent with the Description found in the Consumables-SRBM section.			
Specific and/or unique planned accomplishments to each FY are as follows:			
FY 2023 Plans:			
<p>-IRBM T1/T2 - complete Ship Sets 7 and 10 to support pre-ship readiness review in FY 2023 and flight test in FY 2023 (Ship Set 10) and FY 2024 (Ship Set 7); continue manufacturing and integration of Ship Sets 8, 9, and 11-14 to support pre-ship readiness reviews in FY 2026 (Ship Set 8), FY 2027 (Ship Sets 9 and 11), FY 2028 (Ship Set 12) and FY 2029 (Ship Set 13 and 14))</p> <p>-MBRV-8 - continue recurring engineering efforts and manufacturing of MBRV-8 front sections to support IRBM flight tests</p> <p>-Initiate development of new re-entry vehicles to meet the evolving IRBM threat, including designs to support future Next Generation Interceptor IRBM testing</p> <p>-Continue development and production efforts for IRBM Countermeasures and kits</p>			
FY 2024 Plans:			
			35.890

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDS Targets Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
-IRBM T1/T2 - complete Ship Sets 8, 9, and 11 through 14 to support pre-ship readiness reviews in FY 2026 (Ship Set 8), FY 2027 (Ship Sets 9 and 11), FY 2028 (Ship Set 12) and beyond the FYDP (Ship Sets 13 and 14) -Continue development of new re-entry vehicles to meet the evolving IRBM threat, including designs to support future Next Generation Interceptor IRBM testing -Continue development and production efforts for IRBM Countermeasures and kits, including designs to support future Next Generation Interceptor IRBM testing FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides increased IRBM Countermeasure production to support future Next Generation Interceptor IRBM testing in accordance with the current IMTP.			
Title: Consumables - Intercontinental Ballistic Missiles (ICBM) Description: ICBM target hardware development and manufacturing is consistent with the Description found in the Consumables-SRBM section. Specific and/or unique planned accomplishments to each FY are as follows: FY 2023 Plans: -ICBM T1/T2 - continue manufacturing Ship Sets 5-6 to support pre-ship readiness reviews and flight tests in FY 2028 (Ship Set 5) and FY 2029 (Ship Set 6); initiate manufacturing Ship Set 7-8 to support pre-ship readiness reviews and flight tests -MBRV-8 - continue recurring engineering efforts and manufacturing of MBRV-8 front sections to support ICBM flight tests -Continue SR-119 motor stack development efforts to replace aging C4 motors on ICBM targets, including future Next Generation Interceptor testing -Continue additional development efforts for ICBM Countermeasures, including designs to support future Next Generation Interceptor testing -Initiate development of new re-entry vehicles to meet the evolving ICBM threat, including designs to support future Next Generation Interceptor testing -Initiate manufacturing of ICBM kits that provide the connection between the SR-119 stage zero motor and the Orion 50 S XLT stage 1 motor required for future ICBM targets, including future Next Generation Interceptor testing FY 2024 Plans: -ICBM T1/T2 - complete manufacturing Ship Sets 5-8 to support pre-ship readiness reviews and flight tests in FY 2028 (Ship Set 5) and beyond the FYDP (Ship Sets 6-8) -MBRV-8 - continue recurring engineering efforts and manufacturing of MBRV-8 front sections to support ICBM flight tests		17.448 -	60.384 -
			66.649 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDs Targets Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
-Continue SR-119 motor stack development efforts to replace aging C4 motors on ICBM targets, including future Next Generation Interceptor testing -Continue additional development and manufacturing efforts for ICBM Countermeasures, including designs to support future Next Generation Interceptor testing -MBRV-11 - continue development of new re-entry vehicles to meet the evolving ICBM threat, including designs to support future Next Generation Interceptor testing -Continue manufacturing of ICBM kits, including interstage kits that provide the connection between the SR-119 stage zero motor and the Orion 50 S XLT stage 1 motor required for future ICBM targets, including future Next Generation Interceptor testing <i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase from FY 2023 to FY 2024 provides increased countermeasures development, manufacturing of MBRV-11 re-entry vehicles, and ICBM kits.			
<i>Title:</i> Program Planning & Operations <i>Description:</i> Program Planning and Operations provides for government management of the Missile Defense System Targets Program. Included in this effort is program and business management, program administration, technical and testing oversight, verification of hardware and software development, and government manpower and infrastructure to develop, test and sustain the Missile Defense System Targets Program Office system and components. Other Government Agency (OGA) and Federally Funded Research and Development Research Centers (FFRDC) are used for highly specialized skill sets not available internally to Targets for specific time periods. Recurring yearly planned accomplishments include the following: -Provide technical and business management support activities, financial management, cost and schedule performance analysis cost estimation and analysis, and integration activities -Provide program oversight, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight -Ensure Missile Defense System Targets Program compliance with internal and external direction, policies, and regulations -Conduct Internal Program Plans that align with the MDA approved IMTP -Provide program and technical management of target launch operations activities to include oversight of mission planning, range coordination, and mission requirements Specific and/or unique planned accomplishments to each FY are as follows: <i>FY 2023 Plans:</i>		64.034 -	58.471 -
		63.848 -	

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDs Targets Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
- SEE ABOVE.			
FY 2024 Plans: - SEE ABOVE.			
FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 reflects increased labor rates and inflation based on awarded TEAMS Next contract values.			
Title: Resources		68.141	90.649
Articles:		-	-
Description: Missile Defense System Targets Program Resources consist of two sub-elements: Systems Engineering/Program Management and Logistics. Systems Engineering/Program Management provides technical direction to meet Target Program requirements while balancing cost, schedule, performance, and risk. It conducts functional requirements allocation to product lines, defines product line specifications/interfaces, performs configuration and data management, and follows guidelines for design reviews. It performs target system analysis to verify system performance, defines target program baselines, controls flight test configurations, and conducts pre and post-flight analysis. It identifies treaty and environmental issues and develops plans for issue resolution. It provides Quality, Safety, and Mission Assurance operations to ensure compliance with MDA requirements for design, test, manufacturing, quality, safety and reliability to ensure high quality products are delivered for test events. It also includes Single Stimulation Framework/Objective Simulation Framework compatible Modeling and Simulation (M&S) execution and improvements to evolve M&S capability; trajectory analyses; signature analyses and characterization; studies to assess alternative target and platform solutions; assessments of risk management; and design approval of government furnished equipment. Specific Systems Engineering Planned Accomplishments include: -Continue Program Management and Business Operations for target components to provide a framework for overall management of the Missile Defense System Targets Program -Continue providing classified network connections to OGAs so their subject matter experts can be used to support Target requirements -Continue analyses of future target Launch Vehicles, Re-Entry Vehicles, and launch platforms to ensure they are threat representative and that the Agency is making use of available technology in our future designs -Continue performing Pedigree Reviews to ensure high probability of mission success -Continue information technology and classified network support to ensure sensitive target information is not compromised -Continue Software Independent Verification and Validation to provide risk reduction of flight missions for target systems under development			

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDs Targets Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>Missile Defense System Targets Program Logistics support provides target storage, aging surveillance, and transportation of target hardware in support of Missile Defense System testing. Also included are integrated logistics support for facilities, inventory maintenance, spare parts, aging surveillance, disposal, special testing for rocket motor propellants, and other hazardous material handling. This task manages and oversees accountability of all government furnished equipment and contractor acquired property. Logistics also provides common support equipment for launch vehicles, MBRVs, countermeasures, and all up integrated target rounds. It also supports launch site activations through the transportation of support equipment to various test sites. Specific Targets Logistics Planned Accomplishments include:</p> <ul style="list-style-type: none"> -Continue Multi-Class Inventory storage, aging surveillance, maintenance of existing assets, and transportation support that ensured availability of MBRV and ground support equipment -Conduct disposal actions of inert assets <p>Specific and/or unique planned accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <p>Congressional Add: Architecture reactive target simulation development (\$20 million)</p> <ul style="list-style-type: none"> -Continue architecture reactive target simulation, a suite to rapidly develop low-to medium-fidelity ballistic, hypersonic and cruise missile target sets to support the overall target design capability and representative design reference mission scenarios to define MDA's Target roadmap and technology prioritization <p>Congressional Add: Missile Defense System architecture integration and analysis center prototype (\$12 million)</p> <ul style="list-style-type: none"> -Continue infrastructure for advanced High Performance Computing (HPC), i.e., supercomputers, to equip the Targets Program with hardware and target simulation tools that enable early issue discovery, proof of concepts and rapid technology design and assessments, thereby supporting a robust design capability for developing sophisticated future threats <p>Congressional Add: Advanced target front end configuration 3 technology (ATFE C3) maturation (\$10 million)</p> <ul style="list-style-type: none"> -Initiate the incremental assessment of ATFE C3 concept designs using modeling and simulation platform to optimize front end design and begin the incremental assessment of ATFE C3 component and subsystem technologies that must be matured to meet the performance capabilities and requirements of the system design concept <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDs Targets Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
Decrease from FY 2023 to FY 2024 reflects the Congressional Plus-Up funding in FY 2023 for reactive target simulation development, advanced target front end configuration 3 technology maturation, and for the Missile Defense System integration and analysis center prototype.			FY 2024
Title: Flight Test Execution Description: Flight Test Execution is performed by the Target Launch Operations group. This group conducts target mission planning, coordinates target range and mission requirements, and provides target technical information to the MDA's General Counsel to support treaty approvals. The Target Launch Operations Group is the primary link between the target developer and the Missile Defense System test community, incorporating target system constraints into the Missile Defense System mission countdown and launch constraints. Specific and/or unique planned accomplishments to each FY are as follows: FY 2023 Plans: -Conduct final target integration with the test range and Forward Staging Area to accomplish launch operations of an MRBM target in support of Aegis Sea Based Terminal (SBT) using BL 9.2.x SW demonstrating a simulated engagement firing an SM-6 Simulated Dynamic Missile (SDM) against a Hypersonic Glide Vehicle -Conduct final target integration with the test range and Forward Staging Area to accomplish launch operations of an MRBM target in support of Aegis SBT using BL 9.C2 SW demonstrating a salvo engagement firing two SM-6 Dual II guided missiles -Conduct final target integration with the test range and Forward Staging Area to accomplish launch operations of a two (2) MRBM targets in support of THAAD using TH 4.1 SW demonstrating concurrent control of a THAAD interceptor and two MSEs (Interoperability - PATRIOT) -Conduct final target integration with the test range and Forward Staging Area to accomplish launch operations of an IRBM target with countermeasures in support of GMD using GS 9 SW demonstrating an engagement firing a CE-II Block 1 EKV -Conduct final target integration with the test range and Forward Staging Area to accomplish launch operations of an MRBM target in support of Aegis SBT using BL 9.2.4 SW demonstrating a salvo engagement firing two SM-6 Blk IAU guided missiles FY 2024 Plans: -Conduct final target integration with the test range and Forward Staging Area to accomplish launch operations of an MRBM target in support of Aegis Ballistic Missile Defense (BMD) using BL 5.4.1 SW demonstrating an engagement firing an SM-3 Blk IB TU guided missile -Conduct final target integration with the test range and Forward Staging Area to accomplish launch operations of an MRBM target with countermeasures in support of Aegis BMD using BL 9.2.3 SW performing a target scene data collect		26.328	39.193
Articles:		-	-
			33.023
			-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency									Date: March 2023		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets				Project (Number/Name) MT05 / BMDS Targets Program			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024
<div>-Conduct final target integration with the test range and Forward Staging Area to accomplish launch operations of an MRBM target in support of Aegis SBT using BL 9.2.x SW demonstrating a simulated engagement firing an SM-6 SDM against a Hypersonic Glide Vehicle</div> <div>-Conduct final target integration with the test range and Forward Staging Area to accomplish launch operations of three SRBM targets with countermeasures in support of THAAD using TH 4.1 SW and PATRIOT using PDB 8.1.x SW demonstrating coordinated simulated engagements</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects the number and types of targets required for the mix of flight tests in the Missile Defense System IMTP, including a decrease of flight test missions from five in FY 2023 to four in FY 2024</div>											
Accomplishments/Planned Programs Subtotals									539.734	556.930	548.058
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603914C: Ballistic Missile Defense Test	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
The Missile Defense System Targets Program delivers targets and countermeasures for Missile Defense System flight-testing to counter evolving threats. Program requirements are derived from the Missile Defense System IMTP and from multiple Target System Performance Specifications (TSPS).											
The Missile Defense System Targets Program is currently in various acquisition and contracting stages to deliver targets and countermeasures per multiple TSPS by target class: SRBM, MRBM, IRBM, and ICBM. Each target class may be independently solicited, evaluated, and competitively awarded based on the IMTP 'need date' priority order. The Targets Program also delivers countermeasures based on requirements and TSPS.											
The Missile Defense System Targets Program competitively awarded a prime contract in 2011 to Northrop Grumman Systems Corporation (NGSC) with a Period of Performance (PoP) of March 2011 through December 2025 for air-launched IRBM targets. This award included two follow-on options, one for (8) eight IRBM targets exercised in 2014 and another for (6) six IRBM targets exercised in 2017. Two IRBM targets were added on the contract in 2018 to support the Missile Defense System Acceleration efforts. This contract also included the development and delivery of ICBM targets. The contract scope included two ICBM Stage Zero Retrofit Kits to be installed in existing air-launched IRBM targets. Four ICBM Stage Zero Kits were added in 2018.											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDs Targets Program</i>
<p>The Missile Defense System Targets Program competitively awarded a prime contract in 2016 to NGSC with a PoP of July 2016 to December 2020 for three MRBM T3c2 targets. This award included options for up to four MRBM T3c2 targets. In August 2020 a modification was awarded to extend the base contract through March 2024 to account for two flight tests scheduled for FY 2023 and FY 2024.</p> <p>The Missile Defense System Targets Program competitively awarded a prime contract in 2013 to L-3 Communications/Coleman Aerospace Corporation (Now Aerojet Rocketdyne Coleman Aerospace) with a PoP of October 2013 through December 2027 to provide six MRBM targets. Six additional targets were added to the contract in 2019 to incorporate additional IMTP requirements. The option for the third lot of six additional targets will be on contract by 1Q FY 2023. The first target from this contract was successfully launched in 4th Quarter, FY 2019. Additionally, a quantity of two each enhanced Solid Rocket-19 (eSR-19) motor sets and Roll Control Systems were awarded in 2019.</p> <p>The Missile Defense System Targets Program competitively awarded a prime contract in 2019 to NGSC with a PoP of September 2019 through September 2024 to deliver T4 Subscale Targets. This T4 Subscale contract has a base quantity of four SRBMs, five MRBMs, with options for up to 17 SRBMs and 7 MRBMs.</p> <p>The T4-G Target and other legacy Aegis Readiness Assessment Vehicles targets are acquired through the Naval Surface Warfare Center Port Hueneme Division White Sands (NSWC PHD WS) via Military Interdepartmental Purchase Requests (MIPRs) funding transactions. NSWC PHD WS has unique sounding rocket expertise and access to existing contracts that makes this a beneficial relationship for both parties.</p> <p>The Missile Defense System Targets Program also acquires SRBM subscale targets (Black Dagger and Zombie) with special/unique guidance requirements through MIPRs from the US Army Space and Missile Defense Command (USASMDC).</p> <p>The Missile Defense System Targets Program competitively awarded a prime contract in 2017 to Lockheed Martin with a base PoP of November 2017 through December 2022. In December 2021, the period of performance was extended to January 2027. This action also moved from delivery of in-line missionization hardware to delivery of hardware that has been configured to a generic configuration. Based on this concept, missionization will occur once a mission has been identified in the IMTP. This effort currently requires the delivery of three MBRV-7 Configuration 2 (C2) and five MBRV-8 C2 targets, with options for two MBRV-7 C2 and five MBRV-8 C2 targets, as set forth in the IMTP.</p> <p>The Missile Defense System Targets Program awarded a sole source contract in 2013 to Lockheed Martin with a base PoP of January 2014 through September 2016. The Program Office awarded a contract modification to the Targets and Countermeasures Highly Specialized Services contract that extended the PoP through September 2027. This effort provides missionization requirements-preparation and flight readiness of target assets, ordnance handling, and execution of mission reviews to support specific flight-test objectives for MBRVs.</p> <p>The Targets Program initiated development efforts with Johns Hopkins University Applied Physics Lab (JHU APL) for the Hypersonic Target Vehicle-2 (HTV-2) utilizing an existing contract through MDA's Directorate of Engineering team. The Program Office plans to continue non-recurring engineering with University Affiliated Research Center and FFRDC partners, to include Sandia National Laboratories, for an alternate advance target re-entry vehicles materiel solutions.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
0400 / 4	PE 0603915C / <i>Ballistic Missile Defense Targets</i>	MT05 / <i>BMDS Targets Program</i>
<p>The Missile Defense System Targets Program future acquisition planning and solicitations will go through MDA Acquisition Strategy Panel(s)/Board(s) for decision-making. Future acquisition strategies are based on two premises: a) utilize existing capabilities/infrastructure and sustain an industrial base to deliver targets; and b) initiate acquisitions that delivers low cost/affordable targets that emulate evolving threats.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)						Project (Number/Name)			
0400 / 4						PE 0603915C / Ballistic Missile Defense Targets						MT05 / BMDS Targets Program			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Consumables - Short Range Ballistic Missiles (SRBM) - Countermeasures (GTRI)	FFRDC	Georgia Tech Research Institute : Huntsville, AL	0.000	2.569	Dec 2021	2.118	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Consumables - Short Range Ballistic Missiles (SRBM) - Countermeasures (SNL)	IA	Sandia National Lab : Albuquerque, NM	12.759	7.023	Dec 2021	3.051	Dec 2022	0.000		-		0.000	0.000	22.833	0.000
Consumables - Short Range Ballistic Missiles (SRBM) - Pathfinder Zombie / Black Dagger	MIPR	Space and Missile Defense Command : Huntsville, AL	1.576	0.000		0.000		0.000		-		0.000	0.000	1.576	0.000
Consumables - Short Range Ballistic Missiles (SRBM) - SRBM T4	C/CPFF	NORTHROP GRUMMAN : AZ	95.978	65.102	Nov 2021	44.529	Nov 2022	20.881	Nov 2023	-		20.881	Continuing	Continuing	Continuing
Consumables - Short Range Ballistic Missiles (SRBM) - Target Integration	MIPR	Naval Surface Warfare Center, Port Hueneme : Port Hueneme, CA	94.605	0.307	Nov 2021	0.000		0.000		-		0.000	0.000	94.912	0.000
Consumables - Short Range Ballistic Missiles (SRBM) - Various (Prior Year Funding Only, No Funding in the FYDP)	Various	Various : Various	47.539	0.000		0.000		0.000		-		0.000	0.000	47.539	0.000
Consumables - Medium Range Ballistic Missiles (MRBM) - Air Launch Target Support	MIPR	Yuma Proving Grounds : Yuma, AZ	0.316	0.240	Nov 2021	0.294	Nov 2022	0.000		-		0.000	0.000	0.850	0.000
Consumables - Medium Range Ballistic Missiles (MRBM) - Aviation Fueling	MIPR	DOD - DEFENSE LOGISTICS AGENCY (DLA) : VA	0.000	0.000		0.021	Dec 2022	0.022	Dec 2023	-		0.022	Continuing	Continuing	Continuing
Consumables - Medium Range Ballistic Missiles (MRBM) - Countermeasures (GTRI)	FFRDC	Georgia Tech Research Institute : Huntsville, AL	11.627	5.440	Dec 2021	2.258	Dec 2022	0.000		-		0.000	0.000	19.325	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets				Project (Number/Name) MT05 / BMDS Targets Program					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Consumables - Medium Range Ballistic Missiles (MRBM) - Countermeasures (MIT LL)	FFRDC	MASSACHUSETTS INSTITUTE OF TECHNOLOGY : MA	10.447	9.530	Dec 2021	4.009	Dec 2022	11.464	Dec 2023	-		11.464	Continuing	Continuing	Continuing
Consumables - Medium Range Ballistic Missiles (MRBM) - Countermeasures (SNL)	IA	SNL (Sandia National Laboratory) : NM	134.487	23.700	Dec 2021	25.695	Dec 2022	33.882	Dec 2023	-		33.882	Continuing	Continuing	Continuing
Consumables - Medium Range Ballistic Missiles (MRBM) - HTV-2 (CCDC)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	0.000	0.000		0.000		6.329	Nov 2023	-		6.329	0.000	6.329	0.000
Consumables - Medium Range Ballistic Missiles (MRBM) - HTV-2 (JHU APL)	FFRDC	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	0.000	0.000		12.000	Dec 2022	37.071	Dec 2023	-		37.071	0.000	49.071	0.000
Consumables - Medium Range Ballistic Missiles (MRBM) - MBRVs	C/CPAF	LOCKHEED MARTIN CORPORATION : AL	496.223	17.712	Nov 2021	15.546	Nov 2022	15.881	Nov 2023	-		15.881	Continuing	Continuing	Continuing
Consumables - Medium Range Ballistic Missiles (MRBM) - MRBM T1/T2	C/CPAF	L-3 Coleman Aerospace : FL	512.858	103.071	Nov 2021	114.168	Nov 2022	105.977	Nov 2023	-		105.977	Continuing	Continuing	Continuing
Consumables - Medium Range Ballistic Missiles (MRBM) - MRBM T3c2	C/CPAF	Northrop Grumman Space Systems : Chandler, AZ	219.809	24.237	Nov 2021	0.000		0.000		-		0.000	0.000	244.046	0.000
Consumables - Medium Range Ballistic Missiles (MRBM) - MRBM T4	C/CPAF	NORTHROP GRUMMAN : AZ	46.886	32.465	Nov 2021	40.441	Nov 2022	22.419	Nov 2023	-		22.419	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets				Project (Number/Name) MT05 / BMDS Targets Program					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Consumables - Medium Range Ballistic Missiles (MRBM) - Range Safety	MIPR	Reagan Test Site : Kwajalein Atoll	0.000	0.116	Dec 2021	0.332	Dec 2022	0.000		-		0.000	0.000	0.448	0.000
Consumables - Medium Range Ballistic Missiles (MRBM) - Re-entry Vehicles	FFRDC	Applied Physics Lab/Johns Hopkins University : Laurel, MD	38.079	47.058	Dec 2021	0.000		0.000		-		0.000	0.000	85.137	0.000
Consumables - Medium Range Ballistic Missiles (MRBM) - TPS Support	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	32.449	1.450	Dec 2021	1.709	Dec 2022	1.608	Dec 2023	-		1.608	Continuing	Continuing	Continuing
Consumables - Medium Range Ballistic Missiles (MRBM) - Various (Prior Year Funding Only, No Funding in the FYDP)	Various	Various : Various	32.363	0.000		0.000		0.000		-		0.000	0.000	32.363	0.000
Consumables - Medium Range Ballistic Missiles (MRBM) - eSR19	C/CPAF	L-3 Coleman Aerospace : FL	0.000	0.000		0.000		21.054	Dec 2023	-		21.054	0.000	21.054	0.000
Consumables - Intermediate Range Ballistic Missiles (IRBM) - Countermeasures (SNL)	IA	SNL (Sandia National Laboratory) : NM	17.586	10.627	Dec 2021	1.952	Dec 2022	10.638	Dec 2023	-		10.638	Continuing	Continuing	Continuing
Consumables - Intermediate Range Ballistic Missiles (IRBM) - IRBM Re-entry Vehicles	C/CPAF	NORTHROP GRUMMAN : AZ	0.000	0.000		17.062	Dec 2022	16.102	Dec 2023	-		16.102	Continuing	Continuing	Continuing
Consumables - Intermediate Range Ballistic Missiles (IRBM) - IRBM T1/T2	C/CPAF	NORTHROP GRUMMAN : AZ	707.015	11.775	Nov 2021	11.452	Nov 2022	5.565	Dec 2023	-		5.565	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Ta rgets				Project (Number/Name) MT05 / BMDS Targets Program					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Consumables - Intermediate Range Ballistic Missiles (IRBM) - Re-entry Vehicles	C/CPAF	Lockheed Martin Space Systems Company : Huntsville, AL	82.970	0.532	Nov 2021	1.262	Nov 2022	0.000		-		0.000	0.000	84.764	0.000
Consumables - Intermediate Range Ballistic Missiles (IRBM) - Various (Prior Year Funding Only, No Funding in the FYDP)	Various	Various : Various	10.455	0.000		0.000		0.000		-		0.000	0.000	10.455	0.000
Consumables - Intercontinental Ballistic Missiles (ICBM) - Countermeasures (MIT LL)	FFRDC	MIT Lincoln Laboratory : Hanscom AFB, Lexington, MA	20.483	0.000		11.393	Dec 2022	0.000		-		0.000	0.000	31.876	0.000
Consumables - Intercontinental Ballistic Missiles (ICBM) - Countermeasures (SNL)	IA	SNL (Sandia National Laboratory) : NM	18.402	0.000		6.635	Dec 2022	17.950	Dec 2023	-		17.950	Continuing	Continuing	Continuing
Consumables - Intercontinental Ballistic Missiles (ICBM) - ICBM Re-entry Vehicles	C/CPAF	NORTHROP GRUMMAN : AZ	0.000	0.000		0.617	Dec 2022	2.789	Dec 2023	-		2.789	Continuing	Continuing	Continuing
Consumables - Intercontinental Ballistic Missiles (ICBM) - ICBM T1/T2	C/CPAF	NORTHROP GRUMMAN : AZ	349.690	11.862	Nov 2021	28.629	Nov 2022	28.170	Nov 2023	-		28.170	Continuing	Continuing	Continuing
Consumables - Intercontinental Ballistic Missiles (ICBM) - MBRVs	C/CPAF	Lockheed Martin Space Systems Company : Huntsville, AL	35.521	0.000		0.000		0.000		-		0.000	0.000	35.521	0.000
Consumables - Intercontinental Ballistic Missiles (ICBM) - Static Fire Support	MIPR	Naval Air Weapons Station : China Lake, CA	0.701	0.279	Nov 2021	0.394	Dec 2022	0.000		-		0.000	0.000	1.374	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets					Project (Number/Name) MT05 / BMDS Targets Program				
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Consumables - Intercontinental Ballistic Missiles (ICBM) - Various (Prior Year Funding Only, No Funding in the FYDP)	Various	Various : Various	12.201	0.000		0.000		0.000		-		0.000	0.000	12.201	0.000
Consumables - Joint Emergent Operational Need Statement (JEON) - Various (Prior Year Funding Only, No Funding in the FYDP)	Various	Various : Various	50.027	0.000		0.000		0.000		-		0.000	0.000	50.027	0.000
Subtotal			3,093.052	375.095		345.567		357.802		-		357.802	Continuing	Continuing	N/A
Remarks N/A															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Consumables - Medium Range Ballistic Missiles (MRBM) - MBRVs	C/CPAF	LOCKHEED MARTIN CORPORATION : AL	0.000	0.000		0.000		4.068	Nov 2023	-		4.068	0.000	4.068	0.000
Consumables - Medium Range Ballistic Missiles (MRBM) - MRBM T1/T2	C/CPAF	L-3 Coleman Aerospace : FL	0.000	0.000		0.000		2.510	Nov 2023	-		2.510	0.000	2.510	0.000
Consumables - Medium Range Ballistic Missiles (MRBM) - MRBM T3c2	C/CPAF	NORTHROP GRUMMAN : AZ	0.000	0.000		9.944	Nov 2022	3.946	Nov 2023	-		3.946	0.000	13.890	0.000
Consumables - Medium Range Ballistic Missiles (MRBM) - Network Services - MRBM T1/T2 Target Support	Various	Various : Various	1.232	0.829	Nov 2021	0.390	Nov 2022	0.181	Nov 2023	-		0.181	Continuing	Continuing	Continuing

UNCLASSIFIED

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Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets				Project (Number/Name) MT05 / BMDS Targets Program					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Consumables - Intermediate Range Ballistic Missiles (IRBM) - IRBM T1/T2	C/CPAF	NORTHROP GRUMMAN : AZ	0.000	0.000		0.000		3.581	Dec 2023	-		3.581	0.000	3.581	0.000
Consumables - Intercontinental Ballistic Missiles (ICBM) - ICBM Motor Services	C/CPAF	NORTHROP GRUMMAN : UT	9.927	5.307	Nov 2021	5.183	Nov 2022	5.701	Nov 2023	-		5.701	Continuing	Continuing	Continuing
Consumables - Intercontinental Ballistic Missiles (ICBM) - ICBM T1/T2	C/CPAF	NORTHROP GRUMMAN : AZ	0.000	0.000		0.000		5.599	Nov 2023	-		5.599	0.000	5.599	0.000
Consumables - Intercontinental Ballistic Missiles (ICBM) - MBRVs	C/CPAF	LOCKHEED MARTIN CORPORATION : AL	0.000	0.000		7.533	Nov 2022	6.440	Nov 2023	-		6.440	Continuing	Continuing	Continuing
Program Planning & Operations - Civilian Pay, Travel, IT Support	Allot	DOD - MISSILE DEFENSE AGENCY (MDA) : AL	256.337	28.256	Nov 2021	29.993	Nov 2022	30.186	Nov 2023	-		30.186	Continuing	Continuing	Continuing
Program Planning & Operations - FFRDC Support (JHU APL)	FFRDC	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	9.901	1.720	Dec 2021	2.003	Dec 2022	1.743	Dec 2023	-		1.743	Continuing	Continuing	Continuing
Program Planning & Operations - IT Support	C/CPIF	Various : AL	0.000	0.000		0.000		1.240	Dec 2023	-		1.240	Continuing	Continuing	Continuing
Program Planning & Operations - Safety and Logistics Support - Network Services	Various	Various : Various	9.743	0.552	Nov 2021	0.517	Nov 2022	0.442	Nov 2023	-		0.442	Continuing	Continuing	Continuing
Program Planning & Operations - TEAMS Support	C/CPAF	Various : AL	328.067	33.506	Nov 2021	25.958	Nov 2022	0.000		-		0.000	0.000	387.531	0.000
Program Planning & Operations - TEAMS	C/IDIQ	PARSONS GOVERNMENT SERVICES INC. : AL	0.000	0.000		0.000		30.237	Nov 2023	-		30.237	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets				Project (Number/Name) MT05 / BMDS Targets Program					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Support - MDS Engineering															
Program Planning & Operations - Various (Prior Year Funding Only, No Funding in the FYDP)	Various	Various : Various	1.098	0.000		0.000		0.000		-		0.000	0.000	1.098	0.000
Resources - Advanced Target Front End Configuration 3	C/CPFF	Verity Integrated Systems : AL	0.000	0.000		10.000	Jun 2023	0.000		-		0.000	0.000	10.000	0.000
Resources - FFRDC Reactive Target Simulation	IA	Sandia National Laboratories, New Mexico (SNL) : NM	0.000	8.000	Jun 2022	0.000		0.000		-		0.000	0.000	8.000	0.000
Resources - FFRDC Support / Trade Studies (Aerospace)	FFRDC	THE AEROSPACE CORPORATION : CA	35.544	4.486	Dec 2021	2.560	Dec 2022	4.619	Dec 2023	-		4.619	Continuing	Continuing	Continuing
Resources - FFRDC Support / Trade Studies (JHU APL)	FFRDC	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	9.580	0.844	Nov 2021	0.964	Nov 2022	1.016	Nov 2023	-		1.016	Continuing	Continuing	Continuing
Resources - FFRDC Support / Trade Studies (SNL)	IA	SNL (Sandia National Laboratory) : NM	15.242	4.993	Dec 2021	5.065	Dec 2022	5.268	Dec 2023	-		5.268	Continuing	Continuing	Continuing
Resources - Future ILS Support	TBD	Various : TBD	0.000	1.340	Dec 2021	0.000		0.000		-		0.000	0.000	1.340	0.000
Resources - Garrison Support	MIPR	DOD - USA - ARMY GARRISON REDSTONE ARSENAL (USAG RSA) : TBD	3.424	0.466	Nov 2021	0.000		0.000		-		0.000	0.000	3.890	0.000
Resources - Independent Verification and Validation	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC)	94.277	9.275	Nov 2021	6.318	Nov 2022	6.676	Nov 2023	-		6.676	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets				Project (Number/Name) MT05 / BMDS Targets Program					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		AVIATION AND MISSILE CENTER (AVMC) : AL													
Resources - Integration and Analysis Center (Concordia)	C/IDIQ	CONCORDIA TECHNOLOGIES LLC : AL	0.000	0.000		12.000	Jun 2023	0.000		-		0.000	0.000	12.000	0.000
Resources - Integration and Analysis Center (Parsons)	C/IDIQ	PARSONS GOVERNMENT SERVICES INC. : TBD	0.000	5.000	Jun 2022	0.000		0.000		-		0.000	0.000	5.000	0.000
Resources - MRBM T3c2 Engineering Services Support	C/CPAF	NORTHROP GRUMMAN : UT	0.000	0.000		1.350	Dec 2022	1.133	Dec 2023	-		1.133	0.000	2.483	0.000
Resources - Maintenance Support (ACU) - Garrison Support (Jacobs) -Hazard Materials - Disposal	Various	Various : Various	11.404	0.451	Nov 2021	1.056	Nov 2022	0.946	Nov 2023	-		0.946	Continuing	Continuing	Continuing
Resources - Motor Activities	MIPR	DOD - USSF - SPACE AND MISSILE SYSTEMS CENTER (SMC) : NM	0.440	3.327	Nov 2021	6.235	Nov 2022	6.854	Nov 2023	-		6.854	Continuing	Continuing	Continuing
Resources - Pedigree Reviews	FFRDC	THE AEROSPACE CORPORATION : CA	12.393	4.108	Nov 2021	4.501	Nov 2022	3.158	Nov 2023	-		3.158	Continuing	Continuing	Continuing
Resources - RCS Testing - Motor Static Fire Testing - Motor Storage	Various	Various : Various	13.495	0.669	Nov 2021	1.786	Nov 2022	0.996	Nov 2023	-		0.996	Continuing	Continuing	Continuing
Resources - Reactive Target Simulation (Concordia)	C/IDIQ	CONCORDIA TECHNOLOGIES LLC : AL	0.000	0.000		20.000	Jun 2023	0.000		-		0.000	0.000	20.000	0.000
Resources - Reactive Target Simulation (Parsons)	C/IDIQ	PARSONS GOVERNMENT SERVICES INC. : AL	0.000	12.000	Jun 2022	0.000		0.000		-		0.000	0.000	12.000	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets				Project (Number/Name) MT05 / BMDS Targets Program					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Resources - Sustaining Support and Maintenance	C/CPFF	VENTURI, INC. : AL	2.882	1.154	Jan 2022	2.356	Jan 2023	2.711	Jan 2024	-		2.711	Continuing	Continuing	Continuing
Resources - TEAMS Support	C/CPAF	Various : Various	29.407	6.568	Nov 2021	10.590	Nov 2022	0.000		-		0.000	0.000	46.565	0.000
Resources - TEAMS Support - Facilities, Logistics, and Environmental Support	C/IDIQ	STRATEGIC ALLIANCE SOLUTIONS LLC : AL	0.000	0.000		0.000		1.495	Nov 2023	-		1.495	Continuing	Continuing	Continuing
Resources - TEAMS Support - Quality and Mission Assurance	C/IDIQ	AI SOLUTIONS, INC. : AL	0.000	0.000		0.000		2.971	Nov 2023	-		2.971	Continuing	Continuing	Continuing
Resources - TEAMS Support - Safety - Security - Specialized Engineering	Various	Various : Various	0.000	0.000		0.000		1.508	Nov 2023	-		1.508	Continuing	Continuing	Continuing
Resources - Target Integration and Storage	MIPR	DOD - USA - ARMY GARRISON REDSTONE ARSENAL (USAG RSA) : AL	0.000	0.000		0.000		1.233	Dec 2023	-		1.233	Continuing	Continuing	Continuing
Resources - Technical Data Lab	Various	DOD - MISSILE DEFENSE AGENCY (MDA) : AL	0.830	0.500	Nov 2021	0.486	Nov 2022	1.154	Nov 2023	-		1.154	Continuing	Continuing	Continuing
Resources - Transportation - Logistics - Engineering Services	Various	Various : Various	6.693	1.352	Nov 2021	1.582	Nov 2022	2.044	Nov 2023	-		2.044	Continuing	Continuing	Continuing
Resources - Various (Prior Year Funding Only, No Funding in the FYDP)	Various	Various : Various	206.200	0.000		0.000		0.000		-		0.000	0.000	206.200	0.000
Resources - Wind Tunnel Support	MIPR	DOD - USAF - ARNOLD ENGINEERING DEVELOPMENT CENTER (AEDC) : TN	3.716	3.608	Dec 2021	3.800	Dec 2022	4.360	Dec 2023	-		4.360	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>						Project (Number/Name) MT05 / <i>BMDS Targets Program</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			1,061.832	138.311		172.170		144.016		-		144.016	Continuing	Continuing	N/A
Remarks N/A															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Consumables - Short Range Ballistic Missiles (SRBM) - Countermeasures (GTRI)	FFRDC	GEORGIA TECH RESEARCH CORPORATION : AL	0.000	0.000		0.000		0.537	Nov 2023	-		0.537	0.000	0.537	0.000
Consumables - Short Range Ballistic Missiles (SRBM) - Countermeasures (SNL)	IA	SNL (Sandia National Laboratory) : NM	0.000	0.000		0.000		0.537	Nov 2023	-		0.537	0.000	0.537	0.000
Consumables - Short Range Ballistic Missiles (SRBM) - SRBM T4	C/CPAF	NORTHROP GRUMMAN : AZ	0.000	0.000		0.000		4.784	Nov 2023	-		4.784	0.000	4.784	0.000
Consumables - Medium Range Ballistic Missiles (MRBM) - MBRVs	C/CPAF	LOCKHEED MARTIN CORPORATION : AL	0.000	0.000		0.000		0.621	Nov 2023	-		0.621	0.000	0.621	0.000
Consumables - Medium Range Ballistic Missiles (MRBM) - MRBM T1/T2	C/CPAF	L-3 Coleman Aerospace : FL	0.000	0.000		0.000		1.861	Nov 2023	-		1.861	0.000	1.861	0.000
Consumables - Intermediate Range Ballistic Missiles (IRBM) - IRBM T1/T2	C/CPAF	NORTHROP GRUMMAN : AZ	0.000	0.000		0.000		0.004	Nov 2023	-		0.004	0.000	0.004	0.000
Flight Test Execution - Air Force Test Center Support	MIPR	DOD - USAF - 412TH TEST WING (412 TW) : CA	20.389	3.577	Nov 2021	5.067	Nov 2022	2.389	Nov 2023	-		2.389	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets				Project (Number/Name) MT05 / BMDS Targets Program					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Flight Test Execution - Air Launch Target Support	MIPR	DOD - USAF - DEPARTMENT OF THE AIR FORCE (USAF) : WA	0.000	2.023	Dec 2021	3.714	Dec 2022	6.103	Dec 2023	-		6.103	Continuing	Continuing	Continuing
Flight Test Execution - Flight Test Execution Support (MDA)	Various	DOD - MISSILE DEFENSE AGENCY (MDA) : AL	11.166	2.225	Dec 2021	0.000		0.000		-		0.000	0.000	13.391	0.000
Flight Test Execution - Flight Test Execution Support (NSWC)	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) PORT HUENEME DIVISION (PHD) : CA	7.952	0.000		0.000		0.000		-		0.000	0.000	7.952	0.000
Flight Test Execution - Flight Test Transportation	MIPR	DOD - DEFENSE FINANCE AND ACCOUNTING SERVICES (DFAS) : IN	32.629	2.504	Nov 2021	6.874	Nov 2022	5.134	Nov 2023	-		5.134	Continuing	Continuing	Continuing
Flight Test Execution - Launch Execution (Coleman Aerospace)	C/CPAF	L-3 Coleman Aerospace : FL	9.741	3.280	Nov 2021	5.942	Nov 2022	8.460	Nov 2023	-		8.460	Continuing	Continuing	Continuing
Flight Test Execution - Launch Execution (NGSS)	C/CPAF	NORTHROP GRUMMAN : AZ	19.035	4.336	Nov 2021	4.986	Nov 2022	2.464	Nov 2023	-		2.464	Continuing	Continuing	Continuing
Flight Test Execution - Range Support (KTF)	MIPR	DOE - DEPARTMENT OF ENERGY (DOE) : HI	5.785	0.000		3.514	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Flight Test Execution - Range Support (PMRF)	MIPR	DOD - USN - PACIFIC MISSILE RANGE FACILITY BARKING SANDS (PMRF) : HI	22.527	0.000		2.031	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Flight Test Execution - Range Support (RTS)	MIPR	DOD - USA - REDSTONE TEST	13.320	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets				Project (Number/Name) MT05 / BMDS Targets Program					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		CENTER (RTC) : TBD													
Flight Test Execution - Range Support (WSMR)	MIPR	DOD - USA - WHITE SANDS MISSILE RANGE (WSMR) : NM	0.000	0.000		0.000		0.354	Nov 2023	-		0.354	0.000	0.354	0.000
Flight Test Execution - Spectrum Support and Analysis - COMSEC Utility - Communications - Electromagnetic Interference Analysis	Various	Various : Various	3.110	1.039	Nov 2021	1.466	Nov 2022	1.488	Nov 2023	-		1.488	Continuing	Continuing	Continuing
Flight Test Execution - TEAMS Support	C/IDIQ	Various : Various	12.390	5.834	Nov 2021	3.855	Nov 2022	0.000		-		0.000	0.000	22.079	0.000
Flight Test Execution - TEAMS Support - Test Support	C/IDIQ	Mobius Consulting : AL	0.000	0.000		0.000		3.965	Nov 2023	-		3.965	Continuing	Continuing	Continuing
Flight Test Execution - Target Transportation - Captive Carry Support - Flight Gear Equipment - Forward Staging	Various	Various : Various	1.821	0.507	Nov 2021	0.320	Nov 2022	0.362	Nov 2023	-		0.362	Continuing	Continuing	Continuing
Flight Test Execution - Test Verification Instruments	MIPR	DOD - USA - YUMA PROVING GROUND (YPG) : AZ	3.437	1.003	Nov 2021	1.424	Nov 2022	2.304	Nov 2023	-		2.304	Continuing	Continuing	Continuing
Flight Test Execution - Various (Prior Year Funding Only, No Funding in the FYDP)	Various	Various : Various	9.996	0.000		0.000		0.000		-		0.000	0.000	9.996	0.000
Subtotal			173.298	26.328		39.193		41.367		-		41.367	Continuing	Continuing	N/A
Remarks N/A															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets				Project (Number/Name) MT05 / BMDS Targets Program					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Resources - TEAMS Support - Administration Support	C/IDIQ	TBD : AL	0.000	0.000		0.000		0.823	Nov 2023	-		0.823	Continuing	Continuing	Continuing
Resources - TEAMS Support - Agency Operations Support	C/IDIQ	TBD : AL	0.000	0.000		0.000		1.120	Nov 2023	-		1.120	Continuing	Continuing	Continuing
Resources - TEAMS Support - Planning and Acquisition Support	C/IDIQ	TBD : AL	0.000	0.000		0.000		2.930	Nov 2023	-		2.930	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		4.873		-		4.873	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			4,328.182	539.734		556.930		548.058		-		548.058	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may occur incrementally throughout the year. Previous references to Orbital Sciences Corporation and Northrop Grumman Innovation Systems have been updated to Northrop Grumman Systems Corporation (NGSC) to reflect current corporate structure. Defense of Guam variable flight test funding is captured in the PE 0603914C BMD Test.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023															
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets										Project (Number/Name) MT05 / BMDS Targets Program									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
ATFE (HTV-2) Critical Design Review										▲																			
T4 Critical Design Review											▲																		
MRBM Type 3/Configuration 2 Pre-Ship Readiness Review (Ship Set 6)												▲																	
MRBM Type 1/Type2 Pre-Ship Readiness Review (Ship Set 2)													△																
MRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 4)													△																
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 10)													△																
MRBM Type 3/Configuration 2 Pre-Ship Readiness Review (Ship Set 7)														△															
MRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 5)														△															
MRBM Type 5 (Advanced Target) Pre-Ship Readiness Review (Ship Set 1)														△															
SRBM Type 4 Pre-Ship Readiness Review (Ship Set 1)															△														
SRBM Type 4 Pre-Ship Readiness Review (Ship Set 2)															△														
SRBM Type 4 Pre-Ship Readiness Review (Ship Set 3)															△														
MRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 3)																△													
MRBM Type 5 (Advanced Target) Pre-Ship Readiness Review (Ship Set 2)																	△												
MRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 6)																	△												
MRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 7)																	△												
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 8)																		△											
MRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 8)																			△										
SRBM Type 4 Pre-Ship Readiness Review (Ship Set 4)																				△									
MRBM Type 4 Pre-Ship Readiness Review (Ship Set 1)																				△									
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 9)																					△								
MRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 9)																						△							
MRBM Type 5 (Advanced Target) Pre-Ship Readiness Review (Ship Set 3)																							△						
MRBM Type 4 Pre-Ship Readiness Review (Ship Set 2)																								△					

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023					
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets						Project (Number/Name) MT05 / BMDS Targets Program							
Significant Event Complete ▲		Milestone Decision Complete ★		Element Test Complete ◆		System Level Test Complete ●				Complete Activity ◆									
Significant Event Planned △		Milestone Decision Planned ☆		Element Test Planned ◇		System Level Test Planned ○				Planned Activity ◇									
						FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028	
MRBM Type 4 Pre-Ship Readiness Review (Ship Set 3)																	△		
MRBM Type 4 Pre-Ship Readiness Review (Ship Set 4)																	△		
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 11)																	△		
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 12)																		△	
ICBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 5)																		△	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDs Targets Program</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ATFE (HTV-2) Critical Design Review	2	2022	2	2022
T4 Critical Design Review	3	2022	3	2022
MRBM Type 3/Configuration 2 Pre-Ship Readiness Review (Ship Set 6)	1	2023	1	2023
MRBM Type 1/Type2 Pre-Ship Readiness Review (Ship Set 2)	2	2023	2	2023
MRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 4)	2	2023	2	2023
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 10)	3	2023	3	2023
MRBM Type 3/Configuration 2 Pre-Ship Readiness Review (Ship Set 7)	4	2023	4	2023
MRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 5)	1	2024	1	2024
MRBM Type 5 (Advanced Target) Pre-Ship Readiness Review (Ship Set 1)	1	2024	1	2024
SRBM Type 4 Pre-Ship Readiness Review (Ship Set 1)	2	2024	2	2024
SRBM Type 4 Pre-Ship Readiness Review (Ship Set 2)	2	2024	2	2024
SRBM Type 4 Pre-Ship Readiness Review (Ship Set 3)	2	2024	2	2024
MRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 3)	4	2024	4	2024
MRBM Type 5 (Advanced Target) Pre-Ship Readiness Review (Ship Set 2)	1	2025	1	2025
MRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 6)	2	2025	2	2025
MRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 7)	2	2025	2	2025
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 8)	4	2025	4	2025
MRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 8)	2	2026	2	2026
SRBM Type 4 Pre-Ship Readiness Review (Ship Set 4)	4	2026	4	2026
MRBM Type 4 Pre-Ship Readiness Review (Ship Set 1)	4	2026	4	2026
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 9)	1	2027	1	2027
MRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 9)	2	2027	2	2027

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets	Project (Number/Name) MT05 / BMDS Targets Program	
		Start		End
Events		Quarter	Year	Quarter Year
MRBM Type 5 (Advanced Target) Pre-Ship Readiness Review (Ship Set 3)		3	2027	3 2027
MRBM Type 4 Pre-Ship Readiness Review (Ship Set 2)		3	2027	3 2027
MRBM Type 4 Pre-Ship Readiness Review (Ship Set 3)		3	2027	3 2027
MRBM Type 4 Pre-Ship Readiness Review (Ship Set 4)		3	2027	3 2027
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 11)		4	2027	4 2027
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 12)		1	2028	1 2028
ICBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 5)		2	2028	2 2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets				Project (Number/Name) MD40 / Program Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program Wide Support	172.142	19.160	20.633	20.448	-	20.448	21.762	27.220	28.262	24.884	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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	19.160	20.633	20.448
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p><i>FY 2023 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2024 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> - N/A</p>			
Accomplishments/Planned Programs Subtotals		19.160	20.633
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets				Project (Number/Name) MD40 / Program Wide Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations Management	C/CPFF	NETWORK MANAGEMENT RESOURCES, INC. : AL	7.308	0.000		0.000		3.894	Nov 2023	-		3.894	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	Various : AL	0.434	0.264	Nov 2021	0.225	Nov 2022	1.125	Nov 2023	-		1.125	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	Various	Various : Various	0.000	0.000		0.000		1.448	Nov 2023	-		1.448	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support, International, and Materiel and Readiness	MIPR	Various Multi: : AK, AL, CA, CO, HI, VA	1.678	0.708	Jan 2022	0.700	Jan 2023	0.000		-		0.000	0.000	3.086	0.000
Program Wide Support - FFRDC	FFRDC	Various : Multi: AL, VA	0.426	0.583	Nov 2021	0.497	Nov 2022	0.000		-		0.000	0.000	1.506	0.000
Program Wide Support - Facilities and Maintenance SRM	MIPR	Various : Multi: AK, AL, CA, VA	27.517	0.000		0.000		0.000		-		0.000	0.000	27.517	0.000
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various : Various	63.648	0.000		0.000		0.000		-		0.000	0.000	63.648	0.000
Subtotal			101.011	1.555		1.422		6.467		-		6.467	Continuing	Continuing	N/A
Remarks N/A															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets					Project (Number/Name) MD40 / Program Wide Support				
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations and Contract Support	C/CPFF	STRATEGIC ALLIANCE BUSINESS GROUP LLC : AL	58.835	11.579	Nov 2021	12.447	Nov 2022	6.763	Nov 2023	-		6.763	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Acq	C/CPFF	SYSTEM HIGH CORPORATION : AL	0.000	0.000		3.427	Nov 2022	2.944	Nov 2023	-		2.944	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services (FFP)	C/CPFF	CHENEGA : AL	12.296	6.026	Dec 2021	3.337	Dec 2022	3.004	Dec 2023	-		3.004	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	Various	Various : Various	0.000	0.000		0.000		1.270	Nov 2023	-		1.270	Continuing	Continuing	Continuing
Subtotal			71.131	17.605		19.211		13.981		-		13.981	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			172.142	19.160		20.633		20.448		-		20.448	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets										Project (Number/Name) MD40 / Program Wide Support																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / Ballistic Missile Defense Targets	Project (Number/Name) MD40 / Program Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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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 0604102C / <i>Guam Defense Development</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	110.611	393.201	397.578	-	397.578	291.301	272.227	238.348	232.115	Continuing	Continuing
MD65: <i>Defense of Guam Development</i>	-	110.611	378.751	385.132	-	385.132	279.223	261.590	228.114	221.653	Continuing	Continuing
MD40: <i>Program Wide Support</i>	-	0.000	14.450	12.446	-	12.446	12.078	10.637	10.234	10.462	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Beginning in Fiscal Year (FY) 2024, this Budget Exhibit has been re-structured to present a more transparent, organized justification for the mission activities that support the Defense of Guam architecture.

A. Mission Description and Budget Item Justification

This program develops a Missile Defense System for the defense of Guam against ballistic, hypersonic, and cruise missile threats as a high priority mission for the Department of Defense (DoD). The Missile Defense System will form a key part of strategic deterrence and supports the Pacific Deterrence Initiative.

In FY 2022 MDA initiated studies and analysis, architecture development and siting analysis. FY 2023 continues architecture development and increases the development and modification of the distributed radar, Aegis Guam System support, environmental studies, site design, activation and advanced planning. In FY 2024, the program leverages the results of studies and analysis to continue to provide for developing and fielding distributed land-based launchers, distributed sensors, and integrated communications across Guam. The architecture acquisition process also provides increased Aegis Weapon System development for Guam integration, site activation, environmental protection, engineering, and interoperability activities to balance costs and associated risks.

The FY 2024 architecture includes integration efforts between MDA, U.S. Army, and U.S. Navy systems, which includes a 360 degree persistent integrated air and missile defense with distributed Mk-41 Vertical Launching Systems, Army Standard Missile Launchers, and an AN/TPY-6 (formerly AN/TPY-X) to provide for the Defense of Guam. Guam Architecture System will be controlled by a Joint Command Center with additional Integrated Air and Missile Defense Battle Command System; Aegis Guam System; and Command and Control, Battle Management and Communications (C2BMC) mission node providing local continuity of operations. Initial capability will be demonstrated on Guam in 2024, enhanced capability in 2029, and future additional capability in the 2030's. (Additional information available in a higher classification level).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)		PE 0604102C I Guam Defense Development			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	112.400	397.936	343.875	-	343.875
Current President's Budget	110.611	393.201	397.578	-	397.578
Total Adjustments	-1.789	-4.735	53.703	-	53.703
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-4.735			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-1.789	0.000			
• Other Adjustment	0.000	0.000	53.703	-	53.703
 <u>Change Summary Explanation</u>					
FY 2023 Congressional Directed Reductions Total \$4.735 million:					
Project MD65: Early to Need					
 Increase in FY 2024 provides additional funding to support Guam architecture and schedule.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604102C / Guam Defense Development				Project (Number/Name) MD65 / Defense of Guam Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD65: Defense of Guam Development	-	110.611	378.751	385.132	-	385.132	279.223	261.590	228.114	221.653	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The increase from FY 2023 to FY 2024 provides additional funding to support Guam architecture and schedule as part of the Pacific Deterrence Initiative (PDI).

A. Mission Description and Budget Item Justification

The Missile Defense Agency (MDA) is developing a Missile Defense System for Guam defense against a range of missile threats. The Department of Defense has undertaken studies on a range of missile defense architecture options, emphasizing effectiveness, survivability, and flexibility against an evolving threat. The architecture design includes integration efforts between MDA, U.S. Army, and U.S. Navy systems. This Program Element supports PDI.

In FY 2022 MDA initiated studies and analysis, architecture development and siting analysis. FY 2023 continues architecture development and increases the development and modification of the distributed radar, Aegis Guam System support, environmental studies, site design, activation and advanced planning. In FY 2024, the program leverages the results of studies and analysis to continue to provide for developing and fielding distributed land-based launchers, distributed sensors, and integrated communications across Guam. The architecture acquisition process also provides increased Aegis Weapon System development for Guam integration, site activation, environmental protection, engineering, and interoperability activities to balance costs and associated risks.

The FY 2024 MDA system architecture design includes integration efforts between MDA, U.S. Army, and U.S. Navy systems, which includes a 360 degree persistent integrated air and missile defense with Mk-41 Vertical Launching Systems and an AN/TPY-6 (formerly AN/TPY-X) to provide for the Defense of Guam. Guam Architecture System will be controlled by a Joint Command Center with additional Integrated Air and Missile Defense Battle Command System; Aegis Guam System; and Command and Control, Battle Management and Communications (C2BMC) mission node providing local continuity of operations. Initial capability will be demonstrated on Guam in 2024, enhanced capability in 2029, and future additional capability in the 2030's. (Additional information available in a higher classification level).

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

	FY 2022	FY 2023	FY 2024
Title: Guam Defense C2BMC	13.127	0.000	0.000
Articles:	-	-	-
Description: This Accomplishment deploys C2BMC Ballistic Missile Defense Communications Network (BCN) to support Guam defense to provide ballistic threat typing and tracking, battle management decision aids and regional radar support while integrating with the Army Integrated Air and Missile Defense Battle Command System (IBCS) and Aegis Weapon System.			
FY 2023 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604102C / <i>Guam Defense Development</i>	Project (Number/Name) MD65 / <i>Defense of Guam Development</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
Beginning in FY 2023, activities for this Accomplishment transitioned to PE: 0603896C - Ballistic Missile Defense Command and Control, Battle Management & Communication				
FY 2024 Plans: N/A				
FY 2023 to FY 2024 Increase/Decrease Statement: N/A				
Title: Guam Radar Development and Integration		27.932	234.120	164.149
Articles:		-	-	-
Description: Develop, procure, deliver, and integrate distributed land-based radar capability for use in acquiring, tracking, identifying, and discriminating threats to Guam, including the necessary on-island support equipment for power, data communications to Aegis Guam system, cooling, and environmental protection. Provide transportation, delivery, integration, testing, operations, and limited spares.				
FY 2023 Plans: - Initiate design and development of distributed land-based radar system - Initiate radar system component acquisition; including Active Electronically Scanned Array antenna subsystems, power conversion and storage subsystems, mission processing subsystems, and radar signal processing subsystems for multiple distributed operating locations - Continue design and acquisition of radar environmental protection (Radomes)				
FY 2024 Plans: - Continue land-based radar system development - Continue radar system component acquisition; including Active Electronically Scanned Array antenna subsystems, power conversion and storage subsystems, mission processing subsystems, and radar signal processing subsystems for multiple distributed operating locations - Continue design and acquisition of radar environmental protection (Radomes) - Initiate integration and test for first array				
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects the acquisition of long lead material parts in FY 2023. FY 2024 will focus on the development of the land-based Radar System and Integration requirements specific to the DoD architecture solution.				
Title: Program Operations		3.500	17.500	20.383
Articles:		-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604102C / <i>Guam Defense Development</i>	Project (Number/Name) MD65 / <i>Defense of Guam Development</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>Description: Provide the program management oversight and inter-Agency/Service coordination to integrate a capability to defend Guam against ballistic and cruise missile attack. Activities involve coordination with United States Navy (USN), United States Army (USA), United States IndoPacific Command (USINDOPACOM), and the island of Guam to evaluate complex architecture integration activities.</p> <p>FY 2023 Plans: - See Above</p> <p>FY 2024 Plans: - See Above</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides increased technical coordination and integration planning across multiple Services/Agencies, and subject matter expertise to align systems engineering and integration towards one Department architecture.</p>			
<p>Title: Guam Site Environmental, Activation and Advanced Planning</p> <p align="right">Articles:</p>		15.520	26.800
<p>Description: The Environmental, Site Activation, and Advanced Planning accomplishment leads all efforts for Guam defense to complete the environmental impacts and assessments as required by federal Laws. Performs geotechnical, topographical, environmental, and unexploded ordnance efforts to support siting of Guam defense assets. Performs advance planning and site preparation for required military construction on Guam. Performs site activation and facilities sustainment.</p> <p>FY 2023 Plans: - Continue advance planning activities for site activation and construction on Guam - Continue environmental impact studies and assessments as required by federal Law - Continue site activation activities on Guam</p> <p>FY 2024 Plans: - Increase advance planning activities for site activation and construction on Guam - Begin installation of admin facilities, communications, and other on island support - Increase environmental impact studies and assessments activities as required by federal Law - Continue Munitions and Explosives of Concern (MEC) investigations and commence MEC removal actions - Begin equipment purchases for the initial deployment</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>		-	-
		63.600	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604102C / <i>Guam Defense Development</i>	Project (Number/Name) MD65 / <i>Defense of Guam Development</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
- Increase from FY 2023 to FY 2024 provides additional site preparation/activation requirements needed to support first capability deployment in FY 2025 including finalizing many environmental impact studies and mitigations.			
Title: Guam Weapon System Engineering Description: Provide Aegis Guam system architecture and systems engineering activities necessary to provide an integrated air and missile defense system on Guam against ballistic missile threats. Activities include threat engineering, specifications development, software validation and verification, usage at development test sites, modeling and simulations, risk management, pre-mission test analysis, performance analysis, and baseline management and control. FY 2023 Plans: <ul style="list-style-type: none"> - Begin systems engineering activities to support Defense of Guam (DoG) Program - Begin Aegis Guam System (AGS) technology design for integration, assembly, test and check out - Conduct feasibility analysis, draft AWS requirements, develop design intent models and government reference models to support a System Requirements Review - Conduct MDS system level requirements allocation and AGS requirements development, trace, validation and verification, and establish configuration management for coordination with all participating external agencies and organizations - Develop Systems Modeling Language (SysML) model to support AGS development and technical reviews - Develop initial design for AGS enclosures and transportation plans - Develop initial design concepts for command, control, computers, communications, and intelligence (C4I) enclosure, towers and integration plans - Participate in Integrated Product Teams consisting of MDA and Army Rapid Capabilities and Critical Technologies Office (RCCTO) for integration of Solid-State Radars and transportable launchers - Begin Concept of Operations development for AGS, including electro-magnetic interference mitigation, and commercial air traffic de-confliction - Begin development of training and logistics support plans for AGS - Continue requirements development to map integration activities across the island of Guam - Continue modeling and simulation to develop threat engineering assessment - Continue system methodology development to evaluate integration activities within the system architecture - Initiate modeling and simulation of advanced threats, including threat models and tools - Document system-level design and specifications for Enhanced Integrated Air and Missile Defense Guam defense - Initiate Guam-specific M&S framework and core truth model updates - Begin AGS requirements development, trace, and establish configuration management for coordination with all participating external agencies and organizations 		50.532	100.331
Articles:		-	-
			137.000

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0604102C / <i>Guam Defense Development</i>		Project (Number/Name) MD65 / <i>Defense of Guam Development</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
<p>- Complete Aegis System Requirements Review</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Continue design & development of AGS enclosures and finalize transportation plans - Continue design & development of C4I enclosure, towers and integration plans - Continue Concept of Operations development for AGS, including electro-magnetic interference mitigation, and commercial air traffic de-confliction - Begin development of training and logistics, including technical publications and transportation requirements, for support plans for AGS - Conduct AGS system requirements development, trace, and establish configuration management for coordination with all participating external agencies and organizations - Conduct required system feasibility analysis - Continue development of SysML model to support AGS development and technical reviews - Participate in Integrated Product Teams consisting of MDA and Army Rapid Capabilities and Critical Technologies Office (RCCTO) for integration of Solid-State Radars and transportable launchers - Conduct Ballistic Missile Defense Systems Test Bed (BTS) laboratory upgrades necessary to ensure DoG Surrogate/Hardware In the Loop (HWIL) availability required for DoG Program baseline development, demonstrations and testing - Conduct Development (Dev) and Integration and Test (I&T) laboratories upgrades necessary to ensure DoG Program integrated baseline development, demonstrations and testing at Original Equipment Manufacturers (OEM) development, test and integration site - Develop initial AGS technical publications necessary to inform the design, development, installation and maintenance activities in a format to be used as the basis for final facilities design and for reference in future warfighter decisions - Conduct shipment of materials/parts/systems/sub-systems necessary to establish the Dev and I&T laboratories as well as equipment delivery to Guam in support of the first flight test currently planned in FY2025 - Conduct modeling and simulation of advanced threats, including development of threat models and tools, and produce threat data for simulations - Conduct system-level design and specifications for Guam Defense - Develop Guam-specific M&S framework updates and tailor core truth models for ground and flight test - Begin integration of M&S required for Defense of Guam performance assessment - Provide system test requirements and planning documents for Guam defense - Initiate accreditation activities for models and M&S framework to be used in Defense of Guam performance assessment <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604102C / <i>Guam Defense Development</i>	Project (Number/Name) MD65 / <i>Defense of Guam Development</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
Increase from FY 2023 to FY 2024 provides the engineering design work needed in FY 2024 to prepare for the first integrated flight test currently planned in FY 2025, and additional System Engineering efforts and M&S development and integration across the planned architecture, as required to meet the Defense of Guam timeline.			
Accomplishments/Planned Programs Subtotals	110.611	378.751	385.132

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0208902C: <i>MD65: Defense of Guam Procurement</i>	80.000	26.514	169.627	-	169.627	85.693	5.274	0.000	0.000	0.000	367.108
• 0603890C: <i>BMD Enabling Programs</i>	616.800	588.847	597.720	-	597.720	620.823	639.398	648.954	650.432	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	628.014	595.572	693.727	-	693.727	639.678	706.974	699.611	733.909	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	560.445	579.075	570.258	-	570.258	583.747	642.329	664.683	510.063	Continuing	Continuing

Remarks

D. Acquisition Strategy

Acquisition strategy for Guam Defense consists of contract actions to industry, and agreements with DoD organizations and Federally Funded Research and Development Centers (FFRDC) to develop, demonstrate, and field a Missile Defense System on Guam. MDA is leveraging existing programs of record with existing and planned contracts. Major contributors include Aegis Weapon System; contributing capabilities as part of its future deliveries to support the Aegis Guam System, and AN/TPY-6 Radar development. The AN/TPY-6 is the joint designation for the Homeland Defense Radar-Guam (HDR-G) and is the sensor for the Aegis Guam System.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604102C / Guam Defense Developme nt				Project (Number/Name) MD65 / Defense of Guam Development					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Guam Defense C2BMC - C2BMC Advanced Overhead Persistent Infra- Red Planning & Analysis	C/CPFF	BLUEHALO : AL	0.000	1.348	May 2022	0.000		0.000		-		0.000	0.000	1.348	0.000
Guam Defense C2BMC - C2BMC Advanced Overhead Persistent Infra- Red Planning & Analysis (USAF)	MIPR	DOD - USAF - SECRETARY OF THE AIR FORCE, DIRECTOR FOR BUDGET INVESTMENT (SAF/ FMBI) : Various	0.000	2.879	May 2022	0.000		0.000		-		0.000	0.000	2.879	0.000
Guam Defense C2BMC - Communications Development	Various	Various : Various	0.000	1.091	May 2022	0.000		0.000		-		0.000	0.000	1.091	0.000
Guam Defense C2BMC - Guam Defense System (GDS) - C2BMC Advanced Threat Tracking Architecture (NG)	C/CPAF	NORTHROP GRUMMAN : CO	0.000	3.045	Jul 2022	0.000		0.000		-		0.000	0.000	3.045	0.000
Guam Defense C2BMC - Guam Defense System (GDS) - C2BMC Communications Network (CPU)	MIPR	DOD - DEFENSE INFORMATION SYSTEMS AGENCY (DISA) : MD	0.000	3.500	Sep 2022	0.000		0.000		-		0.000	0.000	3.500	0.000
Guam Radar Development and Integration - Sensor Development Land-Based Radar Development	C/IDIQ	LOCKHEED MARTIN CORPORATION : NJ	0.000	6.861	Apr 2022	224.882	Oct 2022	134.060	Nov 2023	-		134.060	Continuing	Continuing	Continuing
Guam Radar Development and Integration - Sensor Development Homeland Defense Radar-Guam Material (CPU)	C/CPIF	LOCKHEED MARTIN CORPORATION : NJ	0.000	16.200	Aug 2022	0.000		0.000		-		0.000	0.000	16.200	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604102C / Guam Defense Developme nt				Project (Number/Name) MD65 / Defense of Guam Development					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Guam Weapon System Engineering - ABE Guam Development APL	C/CPFF	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	0.000	0.000		0.000		2.808	Nov 2023	-		2.808	Continuing	Continuing	Continuing
Guam Weapon System Engineering - ABE Guam Development Dahlgren	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) DAHLGREN DIVISION (NSWCDD) : VA	0.000	0.000		0.000		2.006	Nov 2023	-		2.006	Continuing	Continuing	Continuing
Guam Weapon System Engineering - ABE Guam Development IDT	C/CPFF	INNOVATIVE DEFENSE TECHNOLOGIES, LLC : DC	0.000	0.000		0.000		1.526	Nov 2023	-		1.526	Continuing	Continuing	Continuing
Guam Weapon System Engineering - ABS Guam Development LM	C/CPFF	LOCKHEED MARTIN CORPORATION : NJ	0.000	12.098	Apr 2022	20.479	Jan 2023	76.991	Nov 2023	-		76.991	Continuing	Continuing	Continuing
Guam Weapon System Engineering - ABS Guam Development MDA	Allot	DOD - MISSILE DEFENSE AGENCY (MDA) : VA	0.000	0.000		0.000		7.600	Nov 2023	-		7.600	Continuing	Continuing	Continuing
Guam Weapon System Engineering - ABS Guam Development NAVSEA	MIPR	DOD - USN - NAVAL SEA SYSTEMS COMMAND (NAVSEA) : VA	0.000	0.000		1.200	Nov 2022	0.000		-		0.000	0.000	1.200	0.000
Guam Weapon System Engineering - ABS Guam Development NIWC	MIPR	DOD - USN - NAVAL INFORMATION WARFARE CENTER (NIWC) : CA	0.000	0.000		39.000	Nov 2022	18.651	Nov 2023	-		18.651	Continuing	Continuing	Continuing
Guam Weapon System Engineering - ABS Guam Development NSWC DD	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) DAHLGREN	0.000	1.697	May 2022	0.000		0.000		-		0.000	0.000	1.697	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604102C / Guam Defense Development				Project (Number/Name) MD65 / Defense of Guam Development					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		DIVISION (NSWCDD) : VA													
Guam Weapon System Engineering - ABS Guam Development USTRANSCOM	MIPR	TBD : Various	0.000	0.000		0.000		2.500	Nov 2023	-		2.500	Continuing	Continuing	Continuing
Guam Weapon System Engineering - Aegis Design and Engineering - Requirements Development	FFRDC	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	0.000	2.157	May 2022	0.000		0.000		-		0.000	0.000	2.157	0.000
Guam Weapon System Engineering - Aegis Guam Systems Engineering, Test, and Integration (CPU)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : MD	0.000	2.501	Aug 2022	0.000		0.000		-		0.000	0.000	2.501	0.000
Guam Weapon System Engineering - Aegis Launcher Beowulf Software/ Hardware Refresh Long-Lead Material (CPU)	C/CPIF	LOCKHEED MARTIN CORPORATION : NJ	0.000	0.317	Aug 2022	0.000		0.000		-		0.000	0.000	0.317	0.000
Guam Weapon System Engineering - Aegis Launcher Development (CPU)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : MD	0.000	1.499	Sep 2022	0.000		0.000		-		0.000	0.000	1.499	0.000
Guam Weapon System Engineering - Aegis Launcher Integration -	MIPR	DOD - USA - COMBAT CAPABILITIES	0.000	2.146	Sep 2022	0.000		0.000		-		0.000	0.000	2.146	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604102C / Guam Defense Development				Project (Number/Name) MD65 / Defense of Guam Development					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Launcher Development Material		DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : MD													
Guam Weapon System Engineering - Aegis Launcher Non-Recurring Engineering Material (CPU)	C/CPIF	LOCKHEED MARTIN CORPORATION : NJ	0.000	5.754	Aug 2022	0.000		0.000		-		0.000	0.000	5.754	0.000
Guam Weapon System Engineering - Aegis Technical Development	Various	Various : Various	0.000	1.155	May 2022	0.000		2.218	Nov 2023	-		2.218	Continuing	Continuing	Continuing
Guam Weapon System Engineering - Architect Support	Various	Various : Various	0.000	1.079	Apr 2022	0.000		0.000		-		0.000	0.000	1.079	0.000
Guam Weapon System Engineering - Architect Support (CPU)	Various	Various : Various	0.000	0.045	Aug 2022	0.000		0.000		-		0.000	0.000	0.045	0.000
Guam Weapon System Engineering - Systems Engineering	C/CPIF	TBD : AL	0.000	0.000		15.462	Nov 2022	0.000		-		0.000	0.000	15.462	0.000
Guam Weapon System Engineering - Systems Engineering NSWC (Crane)	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) CRANE DIVISION : IN	0.000	0.000		3.000	Nov 2022	0.000		-		0.000	0.000	3.000	0.000
Guam Weapon System Engineering - Systems Engineering NSWC (PHD)	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) PORT HUENEME DIVISION (PHD) : CA	0.000	0.000		1.500	Nov 2022	0.000		-		0.000	0.000	1.500	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604102C / Guam Defense Development					Project (Number/Name) MD65 / Defense of Guam Development				
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Guam Weapon System Engineering - Systems Engineering PEO C4I	MIPR	DOD - USA - PROGRAM EXECUTIVE OFFICE COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS & INTELLIGENCE (PEO : DC	0.000	0.000		3.000	Nov 2022	0.000		-		0.000	0.000	3.000	0.000
Subtotal			0.000	65.372		308.523		248.360		-		248.360	Continuing	Continuing	N/A
Remarks															
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year. In accordance with the Financial Management Regulation cost category definitions, some items have transferred to appropriate cost categories.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Guam Defense C2BMC - Communications Support	Various	Various : Various	0.000	1.264	May 2022	0.000		0.000		-		0.000	0.000	1.264	0.000
Guam Radar Development and Integration - Agency Management Support	Various	Various : Various	0.000	1.632	Sep 2022	0.000		0.000		-		0.000	0.000	1.632	0.000
Guam Radar Development and Integration - Integration Risk Reduction	Various	Various : AL	0.000	0.000		0.000		20.642	Dec 2023	-		20.642	Continuing	Continuing	Continuing
Guam Radar Development and Integration - Radar Development Services	Various	Various : Various	0.000	0.609	Jun 2022	1.492	Mar 2023	1.675	Dec 2023	-		1.675	Continuing	Continuing	Continuing
Guam Radar Development and Integration - Sensor Development (JHU/APL)	FFRDC	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS	0.000	0.773	Apr 2022	1.494	Apr 2023	1.535	Dec 2023	-		1.535	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604102C / Guam Defense Developme nt				Project (Number/Name) MD65 / Defense of Guam Development					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		LABORATORY LLC, THE : MD													
Program Operations - Aegis Fed Labor	Allot	DOD - MISSILE DEFENSE AGENCY (MDA) : Various	0.000	0.000		1.800	Oct 2022	3.400	Oct 2023	-		3.400	Continuing	Continuing	Continuing
Program Operations - Management Integration Analysis of Alternatives	FFRDC	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : Various	0.000	0.570	Apr 2022	1.420	Nov 2022	1.809	Nov 2023	-		1.809	Continuing	Continuing	Continuing
Program Operations - Management Integration Analysis of Alternatives (CPU)	FFRDC	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	0.000	0.700	Sep 2022	0.000		0.000		-		0.000	0.000	0.700	0.000
Program Operations - Management Integration Fed Labor	Allot	DOD - MISSILE DEFENSE AGENCY (MDA) : Various	0.000	0.500	Apr 2022	4.100	Oct 2022	4.500	Oct 2023	-		4.500	Continuing	Continuing	Continuing
Program Operations - Management Integration Model Based Engineering	FFRDC	THE MITRE CORPORATION : VA	0.000	0.498	Sep 2022	1.250	Nov 2022	1.441	Nov 2023	-		1.441	Continuing	Continuing	Continuing
Program Operations - Management Integration TEAMS	C/Various	Various : Various	0.000	0.167	Apr 2022	2.823	Nov 2022	3.324	Nov 2023	-		3.324	Continuing	Continuing	Continuing
Program Operations - Program Management Support	Various	Various : Various	0.000	0.358	Jun 2022	1.920	Nov 2022	1.162	Nov 2023	-		1.162	Continuing	Continuing	Continuing
Program Operations - Program Management Support (CPU)	Various	Various : Various	0.000	0.600	Aug 2022	0.000		0.000		-		0.000	0.000	0.600	0.000
Program Operations - Radar Fed Labor	Allot	DOD - MISSILE DEFENSE AGENCY (MDA) : Various	0.000	0.000		4.100	Feb 2023	4.100	Oct 2023	-		4.100	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604102C / Guam Defense Developme nt				Project (Number/Name) MD65 / Defense of Guam Development					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - Research Design and Transfer	Various	Various : Various	0.000	0.000		0.000		0.486	Nov 2023	-		0.486	Continuing	Continuing	Continuing
Guam Site Environmental, Activation and Advanced Planning - Environmental, Site Activation, and Advanced Planning - Sites Activation - USN	MIPR	DOD - USN - NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC) HAWAII : HI	0.000	7.238	Jun 2022	18.801	Dec 2022	29.674	Dec 2023	-		29.674	Continuing	Continuing	Continuing
Guam Site Environmental, Activation and Advanced Planning - Facilities JSC E3 Support	MIPR	DOD - JOINT SPECTRUM CENTER (JSC) : Various	0.000	0.059	May 2022	0.051	May 2023	0.053	Mar 2024	-		0.053	Continuing	Continuing	Continuing
Guam Site Environmental, Activation and Advanced Planning - Facilities NAVFAC Support	MIPR	Various : Various	0.000	1.013	May 2022	2.400	Nov 2022	2.500	Nov 2023	-		2.500	Continuing	Continuing	Continuing
Guam Site Environmental, Activation and Advanced Planning - Facilities NSWC E3 Support	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) DAHLGREN DIVISION (NSWCDD) : Various	0.000	0.121	May 2022	0.154	May 2023	0.157	Dec 2023	-		0.157	Continuing	Continuing	Continuing
Guam Site Environmental, Activation and Advanced Planning - Facilities Planning, Siting, Studies & Environmental (CPU)	MIPR	DOD - USN - NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC) HAWAII : HI	0.000	6.220	Sep 2022	0.000		0.000		-		0.000	0.000	6.220	0.000
Guam Site Environmental, Activation and Advanced Planning - Facilities Planning, Siting, and Studies	MIPR	DOD - USA - US ARMY CORPS OF ENGINEERS (USACE) ENGINEERING AND SUPPORT CENTER,	0.000	0.794	Apr 2022	4.694	May 2023	30.502	Jan 2024	-		30.502	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604102C / Guam Defense Development				Project (Number/Name) MD65 / Defense of Guam Development					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		HUNTSVILLE (HNC) : Various													
Guam Site Environmental, Activation and Advanced Planning - Facilities Support	MIPR	DOD - USA - US ARMY CORPS OF ENGINEERS (USACE) ENGINEERING AND SUPPORT CENTER, HUNTSVILLE (HNC) : Various	0.000	0.075	Jun 2022	0.700	Feb 2023	0.714	Nov 2023	-		0.714	Continuing	Continuing	Continuing
Guam Weapon System Engineering - Engineering Modeling and Simulation (CPU)	C/CPIF	NORTHROP GRUMMAN : AL	0.000	1.708	Aug 2022	0.000		0.000		-		0.000	0.000	1.708	0.000
Guam Weapon System Engineering - Engineering (CPU)	C/CPIF	BOEING : VA	0.000	0.956	Aug 2022	0.000		0.000		-		0.000	0.000	0.956	0.000
Guam Weapon System Engineering - Engineering Development	C/CPIF	BOEING : VA	0.000	1.898	Apr 2022	2.659	Apr 2023	4.800	Nov 2023	-		4.800	Continuing	Continuing	Continuing
Guam Weapon System Engineering - Engineering Development TEAMS	C/CPAF	PARSONS GOVERNMENT SERVICES INC. : Various	0.000	0.000		0.825	Jul 2023	3.090	Nov 2023	-		3.090	Continuing	Continuing	Continuing
Guam Weapon System Engineering - Engineering Integration	Various	Various : Various	0.000	1.742	Apr 2022	0.825	Jan 2023	3.269	Nov 2023	-		3.269	Continuing	Continuing	Continuing
Guam Weapon System Engineering - Engineering Integration and Threat Analysis	Various	Various : Various	0.000	1.572	Apr 2022	0.000		0.000		-		0.000	0.000	1.572	0.000
Guam Weapon System Engineering - Engineering M&S - framework and Core Truth	C/CPAF	LOCKHEED MARTIN CORPORATION : Various	0.000	0.000		1.675	Jan 2023	2.010	Nov 2023	-		2.010	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604102C / Guam Defense Development				Project (Number/Name) MD65 / Defense of Guam Development					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Guam Weapon System Engineering - Engineering Modeling and Simulation	C/CPIF	NORTHROP GRUMMAN : AL	0.000	0.000		6.255	Jan 2023	4.036	Nov 2023	-		4.036	Continuing	Continuing	Continuing
Guam Weapon System Engineering - Engineering Threat Analysis	C/CPIF	SYSTEMS ENGINEERING INC : MD	0.000	0.000		2.490	Nov 2022	2.162	Nov 2023	-		2.162	Continuing	Continuing	Continuing
Guam Weapon System Engineering - Engineering Threat Analysis (DV)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : MD	0.000	1.898	Apr 2022	0.000		0.000		-		0.000	0.000	1.898	0.000
Guam Weapon System Engineering - Engineering and Analysis/Integration	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	0.000	0.000		1.961	Dec 2022	3.333	Nov 2023	-		3.333	Continuing	Continuing	Continuing
Guam Weapon System Engineering - Guam Weapon System Support	Various	Various : Various	0.000	0.443	May 2022	0.000		0.000		-		0.000	0.000	0.443	0.000
Guam Weapon System Engineering - Special Projects	Various	Various : Various	0.000	9.867	Apr 2022	0.000		0.000		-		0.000	0.000	9.867	0.000
Subtotal			0.000	43.275		63.889		130.374		-		130.374	Continuing	Continuing	N/A
Remarks N/A															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604102C / Guam Defense Development						Project (Number/Name) MD65 / Defense of Guam Development			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Guam Radar Development and Integration - Radar Development Services	Various	Various : Various	0.000	0.557	Jun 2022	3.149	Mar 2023	3.016	Dec 2023	-		3.016	Continuing	Continuing	Continuing
Guam Radar Development and Integration - Sensor Development TEAMS Engineering	C/IDIQ	PARSONS GOVERNMENT SERVICES INC. : AL	0.000	1.300	Apr 2022	3.103	Mar 2023	3.221	Dec 2023	-		3.221	Continuing	Continuing	Continuing
Program Operations - Management Integration SharePoint	C/CPFF	NETWORK MANAGEMENT RESOURCES, INC. : AL	0.000	0.107	Aug 2022	0.087	Feb 2023	0.161	Nov 2023	-		0.161	Continuing	Continuing	Continuing
Subtotal			0.000	1.964		6.339		6.398		-		6.398	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	110.611		378.751		385.132		-		385.132	Continuing	Continuing	N/A
Remarks N/A															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023									
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604102C / Guam Defense Development					Project (Number/Name) MD65 / Defense of Guam Development														
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
Environmental - Advance Planning and Evaluation							◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇						
Architecture and Engineering - Architecture Development and Assessment							◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇						
Environmental - Impact Assessment							◇	◇	◇	◇	◇													
AN/TPY-6 Radar Development - TAU 1							◇	◇	◇	◇	◇	◇												
AN/TPY-6 Radar Development - TAU 2							◇	◇	◇	◇	◇	◇	◇											
FEM-02 Environmental Assessment							◇	◇	◇	◇	◇	◇	◇	◇	◇									
Radar Development - Equipment Shelter							◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇						
Environmental - Sites Activation Activities								◇	◇	◇	◇	◇	◇	◇	◇	◇	◇							
Aegis Guam - System Engineering								◇	◇	◇	◇	◇	◇	◇	◇	◇								
Aegis Guam - Technology Design for Integration, Assembly, Test and Verification								◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇						
Aegis Guam System Requirement Review									◇															
Aegis Software Release #1										◇														
Guam Preliminary Design Review (PDR)											◇													
Aegis Software Release #2												◇												
Guam Critical Design Review (CDR)													◇											
FEM-02														◇										
Guam Initial Deployment																								
FTX-47																		△						

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604102C / <i>Guam Defense Development</i>	Project (Number/Name) MD65 / <i>Defense of Guam Development</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Environmental - Advance Planning and Evaluation	3	2022	4	2028
Architecture and Engineering - Architecture Development and Assessment	3	2022	4	2028
Environmental - Impact Assessment	3	2022	3	2023
AN/TPY-6 Radar Development - TAU 1	3	2022	2	2024
AN/TPY-6 Radar Development - TAU 2	3	2022	3	2024
FEM-02 Environmental Assessment	3	2022	1	2025
Radar Development - Equipment Shelter	3	2022	4	2027
Environmental - Sites Activation Activities	4	2022	4	2026
Aegis Guam - System Engineering	1	2023	4	2026
Aegis Guam - Technology Design for Integration, Assembly, Test and Verification	1	2023	4	2028
Aegis Guam System Requirement Review	3	2023	3	2023
Aegis Software Release #1	4	2023	4	2023
Guam Preliminary Design Review (PDR)	1	2024	1	2024
Aegis Software Release #2	2	2024	2	2024
Guam Critical Design Review (CDR)	4	2024	4	2024
FEM-02	1	2025	1	2025
Guam Initial Deployment	1	2025	1	2025
FTX-47	4	2027	4	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604102C / Guam Defense Developme nt				Project (Number/Name) MD40 / Program Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program Wide Support	-	0.000	14.450	12.446	-	12.446	12.078	10.637	10.234	10.462	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Wide Support (PWS) is allocated on a pro-rata basis across multiple Agency PE's 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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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)

Title: Program Wide Support		FY 2022	FY 2023	FY 2024
Articles:		0.000	14.450	12.446
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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		-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604102C / <i>Guam Defense Development</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2024 Plans: - SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects the PWS allocation on a pro-rata basis across multiple Agency PE's each fiscal year based on the total Agency budget, and therefore fluctuates per PE by fiscal year.</p>			
Accomplishments/Planned Programs Subtotals		0.000	14.450
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services (A&AS) support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023				
Appropriation/Budget Activity						R-1 Program Element (Number/Name)					Project (Number/Name)					
0400 / 4						PE 0604102C / Guam Defense Development					MD40 / Program Wide Support					
Support (\$ in Millions)						FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total		
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Program Wide Support - Agency Operations Support	C/CPFF	LSINC : AL	0.000	0.000		1.700	Nov 2022	0.000		-		0.000	0.000	1.700	0.000	
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	DOD - DEFENSE FINANCE AND ACCOUNTING SERVICES (DFAS) : IN	0.000	0.000		2.250	Nov 2022	3.300	Nov 2023	-		3.300	Continuing	Continuing	Continuing	
Subtotal			0.000	0.000		3.950		3.300		-		3.300	Continuing	Continuing	N/A	
Remarks																
N/A																
Management Services (\$ in Millions)						FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total		
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Program Wide Support - Agency Operations and Support Financial	C/CPFF	Veterans Technology, LLC : AL	0.000	0.000		2.000	Dec 2022	1.646	Dec 2023	-		1.646	Continuing	Continuing	Continuing	
Program Wide Support - Agency Operations and Support Security	C/CPFF	INTREPID TV LTD : AL	0.000	0.000		3.500	Nov 2022	3.500	Nov 2023	-		3.500	Continuing	Continuing	Continuing	
Program Wide Support - Agency Operations and Support Services	C/CPFF	Kepler Research, Incorporated : AL	0.000	0.000		5.000	Dec 2022	4.000	Dec 2023	-		4.000	Continuing	Continuing	Continuing	
Subtotal			0.000	0.000		10.500		9.146		-		9.146	Continuing	Continuing	N/A	
Remarks																
N/A																

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency										Date: March 2023				
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604102C / Guam Defense Developme nt					Project (Number/Name) MD40 / Program Wide Support				
		Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		0.000	0.000		14.450		12.446		-		12.446	Continuing	Continuing	N/A
Remarks N/A														

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PE 0604102C: *Guam Defense Development* **UNCLASSIFIED** Volume 2a - 601
 Missile Defense Agency Page 25 of 26 R-1 Line #95

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604102C / Guam Defense Developme nt	Project (Number/Name) MD40 / Program Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2023	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity	R-1 Program Element (Number/Name)											
0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	PE 0604115C / <i>Technology Maturation Initiatives</i>											
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	467.330	39.200	16.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	522.530
MD98: <i>Directed Energy Demonstrator Development</i>	467.330	39.200	16.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	522.530

Program MDAP/MAIS Code: 362

Note

The decrease from FY 2023 to FY 2024 reflects the Congressional add of \$16.0 million enacted in FY 2023. No funding is requested for this program in FY 2024 and the outyears.

A. Mission Description and Budget Item Justification

Technology Maturation Initiatives (TMI) demonstrates the utility of directed energy for missile defense. The Missile Defense Agency's (MDA) directed energy plan incrementally demonstrates and improves the constituent components required to execute a directed energy acquisition, tracking, and lethality kill chain. The directed energy effort advances the technology readiness levels of emerging and developing technologies, while simultaneously assessing the performance and contributions to the Missile Defense System architecture. TMI included analysis, development, demonstration, systems engineering and test efforts to examine, develop, and improve directed energy systems, disruptive directed energy concepts, sensors, and future missile defense technologies.

Directed Energy Demonstrator Development addressed technology risk reduction and maturation for high powered strategic lasers, beam control, lethality, and related technologies. The efforts remain tightly coupled with Office of the Undersecretary of Defense Research and Engineering (OUSD(R&E)) High Energy Laser Development Road Map, and are essential to mature strategic laser technology.

MDA collaborates with the Combatant Commands, Defense Advanced Research Projects Agency, Department of Energy, Joint Directed Energy Transition Office, Military Departments, National Laboratories and OUSD(R&E) in a systems engineering based strategy to research, analyze, develop and test directed energy weapons technology.

MDA continues to participate in the Department's Directed Energy Reviews.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency					Date: March 2023
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>			R-1 Program Element (Number/Name) PE 0604115C <i>I Technology Maturation Initiatives</i>		
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	39.200	0.000	0.000	-	0.000
Current President's Budget	39.200	16.000	0.000	-	0.000
Total Adjustments	0.000	16.000	0.000	-	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	16.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	0.000	-	0.000
<u>Change Summary Explanation</u>					
Project MD98: Directed Energy Demonstrator Development:					
FY 2023 Congressional Add Total \$16.0 million:					
- Short pulse laser directed energy demo for hypersonic defense (\$9.0 million)					
- Continue Diode Pumped Alkali Laser Development (\$7.0 million)					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604115C / <i>Technology Maturation Initiatives</i>				Project (Number/Name) MD98 / <i>Directed Energy Demonstrator Development</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD98: <i>Directed Energy Demonstrator Development</i>	467.330	39.200	16.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	522.530
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The decrease from FY 2023 to FY 2024 reflects the Congressional add of \$16.0 million enacted in FY 2023. No funding is requested for this program in FY 2024 and the outyears.

A. Mission Description and Budget Item Justification

The Directed Energy Demonstrator Development (DEDD) project develops, integrates, and tests the component technologies required to scale electric lasers to hundreds of kilowatts. Laser scaling focused on maturing laser capability to levels sufficient to enter into the Office of the Undersecretary of Defense Research and Engineering High Energy Laser Road Map efforts. The DEDD project provided the necessary technology, test data, and operations familiarity to successfully transition to a higher power directed energy weapon. MDA continues to participate in the Department's Directed Energy Reviews.

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

	FY 2022	FY 2023	FY 2024
Title: Directed Energy Demonstrator Development	39.200	16.000	0.000
Articles:	-	-	-
Description: Laser scaling develops, integrates, and tests the component technologies required for scaling electric lasers while maintaining optimal size, weight, and power metrics and near diffraction limited beam quality.			
FY 2023 Plans: Congressional Add: Short pulse laser directed energy demo for hypersonic defense (\$9 million) - Collect test data and conduct analysis of the data on the lethality mechanisms of pulsed lasers on missile threats. Congressional Add: Continue Diode Pumped Alkali Laser Development (\$7 million) - Continue the transition of laser technology out of a National Laboratory to Industry. - Study the potential deployment of laser weapons to augment the layered defense capability of the Missile Defense System. - Develop concepts for incorporation of directed energy weapons into the Missile Defense System. - Develop command and control capabilities to maximize the effectiveness of kinetic and non-kinetic weapons used together synergistically in the future layered Missile Defense System architecture. - Develop machine learning based algorithms for phase control, deformable mirror control, and turbulence characterization. - Initiate advanced microwave technology improvements, mature components and conduct threat representative assessments.			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604115C / <i>Technology Maturation Initiatives</i>	Project (Number/Name) MD98 / <i>Directed Energy Demonstrator Development</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> - Develop and demonstrate a prototype, coherent beam combining scalable direct diode laser to prove that the direct diode concepts are practicable and achievable. - Develop a safe, domestic, battery-based power supply that can support all ground and ship directed energy systems. <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - No funding is requested in FY 2024 for this effort <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects the Congressional add.</p>			
Accomplishments/Planned Programs Subtotals		39.200	16.000
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
Employ various contracting strategies in a flexible manner to maximize the contribution to MDA. Execute through utilization of small businesses, leverage the Nation's engineering centers of excellence (FFRDCs and University Affiliated Research Centers); generate cooperatives with other Government Agencies to provide concept modeling and assessment capability. This strategy uses agency and partner subject matter experts and government model-based assessments to inform Better Buying Power acquisition decisions.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604115C / <i>Technology Maturation Initiatives</i>				Project (Number/Name) MD98 / <i>Directed Energy Demonstrator Development</i>					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Directed Energy Demonstrator Development - Adaptive Optics Effectiveness Demonstration	C/CPFF	Various : Various	0.000	9.000	Aug 2022	0.000		0.000		-		0.000	0.000	9.000	0.000
Directed Energy Demonstrator Development - Beam Control and Lethality Demonstration	C/CPFF	Multi : Multi	27.561	0.000		0.000		0.000		-		0.000	0.000	27.561	0.000
Directed Energy Demonstrator Development - Industry Laser Scaling and Technology Transfer	C/CPFF	Boeing : CA	18.412	0.000		0.000		0.000		-		0.000	0.000	18.412	0.000
Directed Energy Demonstrator Development - LPLD Preliminary Design A	C/CPFF	Lockheed Martin : CA	40.494	0.000		0.000		0.000		-		0.000	0.000	40.494	0.000
Directed Energy Demonstrator Development - LPLD Preliminary Design B	C/CPFF	General Atomics : CA	36.841	0.000		0.000		0.000		-		0.000	0.000	36.841	0.000
Directed Energy Demonstrator Development - LPLD Preliminary Design C	C/CPFF	Boeing : CA	36.361	0.000		0.000		0.000		-		0.000	0.000	36.361	0.000
Directed Energy Demonstrator Development - LPLD System Critical Design A (CPU)	C/CPFF	Lockheed Martin : CA	26.000	0.000		0.000		0.000		-		0.000	0.000	26.000	0.000
Directed Energy Demonstrator Development - LPLD	C/CPFF	General Atomics : CA	26.000	0.000		0.000		0.000		-		0.000	0.000	26.000	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604115C / <i>Technology Maturation Initiatives</i>						Project (Number/Name) MD98 / <i>Directed Energy Demonstrator Development</i>			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 Critical Design B (CPU)															
Directed Energy Demonstrator Development - LPLD System Critical Design C (CPU)	C/CPFF	Boeing : CA	26.000	0.000		0.000		0.000		-		0.000	0.000	26.000	0.000
Directed Energy Demonstrator Development - Laser Lethality Demonstration	C/CPFF	General Atomics, AFRL, Redstone Testing Center, White Sands Missile Range : CA, AL, NM	4.178	7.200	Sep 2022	0.000		0.000		-		0.000	0.000	11.378	0.000
Directed Energy Demonstrator Development - Laser Scaling	C/Various	MIT LL, LLNL : MA, CA	136.658	0.000		0.000		0.000		-		0.000	0.000	136.658	0.000
Directed Energy Demonstrator Development - Laser Scaling - Diode Pumped Alkali Laser (CPU)	Various	Multi, LLNL : CA	41.400	6.000	Jun 2022	7.000	Apr 2023	0.000		-		0.000	0.000	54.400	0.000
Directed Energy Demonstrator Development - Machine Learning Adaptive Optics	C/Various	Various : Various	0.000	2.500	Sep 2022	0.000		0.000		-		0.000	0.000	2.500	0.000
Directed Energy Demonstrator Development - Microwave Technology Assessment	C/CPFF	RAYTHEON : AZ	0.000	5.500	Jul 2022	0.000		0.000		-		0.000	0.000	5.500	0.000
Directed Energy Demonstrator Development - Performance Analysis	Various	MIT LL, Aviation and Missile Research Development and Engineering Center (AMRDEC), Combat Capabilities Development	12.469	0.000		0.000		0.000		-		0.000	0.000	12.469	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604115C / <i>Technology Maturation Initiatives</i>						Project (Number/Name) MD98 / <i>Directed Energy Demonstrator Development</i>			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		Command - Aviation and Missile Center (CCDC-AMC), AFRL, USAFA, Semquest : MA, AL, NM, CO													
Directed Energy Demonstrator Development - Short Pulsed Laser Lethality Assessment	MIPR	UNIVERSITY OF ROCHESTER : NY	0.000	9.000	Sep 2022	9.000	Sep 2023	0.000		-		0.000	0.000	18.000	9.000
Directed Energy Demonstrator Development - Technology Transfer/Component Development	C/CPIF	Boeing : CA	16.209	0.000		0.000		0.000		-		0.000	0.000	16.209	0.000
Subtotal			448.583	39.200		16.000		0.000		-		0.000	0.000	503.783	N/A
Remarks N/A															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Directed Energy Demonstrator Development - Advisory and Assistance Services	C/CPFF	MDA Multi : AL, NM	8.013	0.000		0.000		0.000		-		0.000	0.000	8.013	0.000
Directed Energy Demonstrator Development - Engineering and Technical Services	MIPR	Aviation and Missile Research Development and Engineering Center (AMRDEC), Combat Capabilities Development	2.221	0.000		0.000		0.000		-		0.000	0.000	2.221	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604115C / <i>Technology Maturation Initiatives</i>						Project (Number/Name) MD98 / <i>Directed Energy Demonstrator Development</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		Command - Aviation and Missile Center (CCDC-AMC) : AL													
Directed Energy Demonstrator Development - FFRDC	FFRDC	Aerospace : AL, NM	3.317	0.000		0.000		0.000		-		0.000	0.000	3.317	0.000
Directed Energy Demonstrator Development - Facility Support	Various	377th ABW, Phoenix : NM	0.483	0.000		0.000		0.000		-		0.000	0.000	0.483	0.000
Directed Energy Demonstrator Development - Facility Sustainment	C/CPFF	Multi : AL, NM	1.281	0.000		0.000		0.000		-		0.000	0.000	1.281	0.000
Directed Energy Demonstrator Development - Information Technology	C/CPFF	Northrop Grumman, Jacobs Technology : CO	3.282	0.000		0.000		0.000		-		0.000	0.000	3.282	0.000
Directed Energy Demonstrator Development - Travel	Allot	MDA Multi : AL, NM	0.150	0.000		0.000		0.000		-		0.000	0.000	0.150	0.000
Subtotal			18.747	0.000		0.000		0.000		-		0.000	0.000	18.747	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			467.330	39.200		16.000		0.000		-		0.000	0.000	522.530	N/A
Remarks N/A															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency											Date: March 2023									
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604115C / Technology Maturation Initiatives					Project (Number/Name) MD98 / Directed Energy Demonstrator Development										
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028			
Laser Scaling Development - Diode Pumped Alkali Laser (DPAL)					◆	◆	◆	◆												
Laser Scaling Development – DPAL 60 kW-Class Lab Demo					◆	◆	◆	◆												
Laser Scaling Development – DPAL 60 kW-Class Lab Demo with Beam Quality measurement						◆	◆	◆												
Laser Scaling Development - Diode Pumped Alkali Laser (DPAL) Continued									◇	◇	◇									
Optimize laser performance									◇	◇	◇									
Studies for transision of technology from the Laboratory to Industry									◇	◇	◇									

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604115C / Technology Maturation Initiatives	Project (Number/Name) MD98 / Directed Energy Demonstrator Development	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Laser Scaling Development - Diode Pumped Alkali Laser (DPAL)	1	2022	4	2022
Laser Scaling Development DPAL 60 kW-Class Lab Demo	1	2022	4	2022
Laser Scaling Development DPAL 60 kW-Class Lab Demo with Beam Quality measurement	2	2022	4	2022
Laser Scaling Development - Diode Pumped Alkali Laser (DPAL) Continued	2	2023	4	2023
Optimize laser performance	2	2023	4	2023
Studies for transistion of technology from the Laboratory to Industry	2	2023	4	2023

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604181C / <i>Hypersonic Defense</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	854.732	281.886	517.977	208.997	-	208.997	218.939	294.326	366.951	644.996	Continuing	Continuing
MD29: <i>Hypersonic Defense</i>	832.561	273.106	510.117	190.555	-	190.555	195.627	282.434	352.062	616.390	Continuing	Continuing
MD40: <i>Program Wide Support</i>	22.171	8.780	7.860	18.442	-	18.442	23.312	11.892	14.889	28.606	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Decrease from Fiscal Year (FY) 2023 to FY 2024 reflects Congressional add of \$292.5 million for component risk reduction enacted in FY 2023, as well as the scheduled alignment of requirements to the current delivery of the Glide Phase Interceptor capability. In PB24, this budget exhibit has been re-structured to present a more organized justification for the mission activities that support a regional hypersonic missile defense capability.

A. Mission Description and Budget Item Justification

Strategic competitors and regional adversaries are heavily investing in offensive and defensive hypersonic capabilities, and currently have operational hypersonic strike and defensive systems deployed. These are challenging realities of the emerging missile threat environment that U.S. missile defense policy, strategy, and capabilities must address. These competitors continue to expand the capability and capacity of their offensive and defensive hypersonic missile inventories for both strategic and regional hypersonic missiles. Rogue nations have also demonstrated hypersonic missiles in recent flight tests.

The Hypersonic Defense (HD) Program Element includes execution of the systems engineering activities, upgrade of existing systems, investment in new technologies, and development of new regional defensive capabilities and maturation for delivery in the 2030s. Missile Defense Agency's Hypersonic Missile Defense strategy includes leveraging existing systems, delivering an initial regional layered defense capability, and increasing defense capabilities in the future.

Activities enabling this strategy are the following:

- Develop a regional Glide Phase Intercept capability to engage hypersonic threats during the glide phase of flight. The Preliminary Design Review (PDR) is planned for FY 2029, Critical Design Review (CDR) for FY 2032, and delivery in FY 2034.
- Integrate existing and new overhead sensors like the Hypersonic and Ballistic Tracking Space Sensor to track and support intercepts to counter hypersonic threats
- Update existing Ballistic Missile Defense System Overhead Architecture to use information from satellites to create tracks on hypersonic threats
- Modify existing Aegis SPY radar, fire control, and communications, as well as Command & Control, Battle Management, and Communications for track and warning of hypersonic threats
- Execute systems engineering for HD (architecture analysis, technology prioritization, requirements development, planning, analysis)
- Partner with the Services and other agencies to leverage work on common technologies, test infrastructure, weapon development, testing, and war-gaming
- Partner with Allies where possible

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)		PE 0604181C I Hypersonic Defense			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	287.796	225.477	108.540	-	108.540
Current President's Budget	281.886	517.977	208.997	-	208.997
Total Adjustments	-5.910	292.500	100.457	-	100.457
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	292.500			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-5.910	0.000			
• Other Adjustment	0.000	0.000	100.457	-	100.457
Change Summary Explanation					
Project MD29: Hypersonic Defense:					
FY 2023 \$292.5 million Congressional Add for Glide Phase Defeat weapons system.					
FY 2024 increase provides additional technology maturation to support the delivery of regional hypersonic glide phase defense capability.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604181C / <i>Hypersonic Defense</i>				Project (Number/Name) MD29 / <i>Hypersonic Defense</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD29: <i>Hypersonic Defense</i>	832.561	273.106	510.117	190.555	-	190.555	195.627	282.434	352.062	616.390	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2023 to FY 2024 reflects Congressional add of \$292.5 million for component risk reduction enacted in FY 2023, as well as the scheduled alignment of requirements to the current delivery of the Glide Phase Interceptor capability.

A. Mission Description and Budget Item Justification

Strategic competitors and regional adversaries are heavily investing in hypersonics, both offense and defense, and currently have operational hypersonic strike and defensive systems deployed. These are challenging realities of the emerging missile threat environment that U.S. missile defense policy, strategy, and capabilities must address. These competitors continue to expand the capability and capacity of their offensive and defensive hypersonic missile inventories for both strategic and regional hypersonic missiles. Rogue nations have also demonstrated hypersonic missiles in flight tests.

The Hypersonic Defense (HD) Program Element (PE) includes executing systems engineering activities, upgrading existing systems, investing in new technologies and maturation, and developing new regional defensive capabilities. Missile Defense Agency's counter hypersonic threats strategy includes leveraging existing systems, delivering an initial regional layered defense capability, and increasing defense capabilities in the future. Activities enabling this strategy are the following:

- Develop a regional Glide Phase Intercept (GPI) capability to engage hypersonic threats during the glide phase of flight
- Integrate existing and new overhead sensors like the Hypersonic and Ballistic Tracking Space Sensor to track and support intercepts to counter hypersonic threats
- Update existing Ballistic Missile Defense System Overhead Architecture (BOA) to use information from satellites to create tracks on hypersonic threats
- Modify existing Aegis SPY radar, fire control, and communications, as well as Command & Control, Battle Management, and Communications (C2BMC) for track and warning of hypersonic threats
- Execute systems engineering for HD (architecture analysis, technology prioritization, requirements development, planning, analysis)
- Partner with the Services and other agencies to leverage work on common technologies, test infrastructure, weapon development, testing, and war-gaming
- Partner with Allies where possible

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

	FY 2022	FY 2023	FY 2024
Title: Engineering Enablers	65.347	0.000	0.000
Articles:	-	-	-
Description: Provides systems engineering activities required to evolve the Missile Defense System to counter hypersonic threats, to include architecture analysis, capability roadmap development, and requirements development. Recurring activities include:			
- Conduct foundational Systems Engineering activities required to develop regional HD, including concept definition, requirements and interfaces, system design, integration, test planning, and use of digital engineering tools and practices			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense	Project (Number/Name) MD29 / Hypersonic Defense		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
<div>-- Provide key products for development and maintenance of the technical baseline</div> <div>-- Assess current Missile Defense System capabilities against hypersonic threats and analyze future HD solutions to counter the evolving threat</div> <div>-- Develop and integrate modeling and simulation (M&S) tools to validate HD requirements and assess HD performance</div> <div>-- Support HD reviews to coordinate the technical and program baselines to ensure development of a successful capability</div> <div>-- Continue to mature M&S architecture</div> <div>- Perform engineering analysis, develop requirements, and define interfaces for sensor-to-weapon fire control using C2BMC to lay the path for connectivity, battle management, and sensor tasking to a weapon system such as Aegis</div> <div>Specific and/or unique accomplishments to each FY are as follows:</div> <div>FY 2023 Plans:</div> <div>N/A</div> <div>FY 2024 Plans:</div> <div>N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>N/A</div>				
<div>Title: Disruptive Technologies for Future Architecture</div> <div>Articles:</div> <div>Description: Provides identification, development of new technology and capabilities needed across the kill chain in support of Hypersonic Missile Defense architecture alternatives, and the ability to address advanced threats through kinetic and non-kinetic capabilities. Specific and/or unique accomplishments to each FY are as follows:</div> <div>FY 2023 Plans:</div> <div>N/A</div> <div>FY 2024 Plans:</div> <div>N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>N/A</div>		25.782 -	0.000 -	0.000 -
<div>Title: Leverage and Upgrade Existing Systems</div> <div>Articles:</div>		24.491 -	0.000 -	0.000 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense	Project (Number/Name) MD29 / Hypersonic Defense		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
<p>Description: Analyze existing systems capability to defend against hypersonic threats and upgrade existing systems to support hypersonic missile defense activities. Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: N/A</p> <p>FY 2024 Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>					
<p>Title: Regional Hypersonic Missile Defense Capability</p> <p>Articles:</p> <p>Description: Develop and deliver a defensive capability to engage and defeat regional hypersonic threats during the glide phase of flight using the proven Aegis Weapon System (AWS). This will provide an additional layer of regional hypersonic defense from an Aegis ship, which also complements the Sea-Based Terminal capability by extending the battlespace. The defensive capability includes the development of a regional GPI missile that reduces the operational seam currently used by hypersonic threats to fly between air defense and ballistic missile defense systems. The effort also includes updates to the AWS for planning, tracking and conducting remote engagements against hypersonic threats within the Missile Defense System as well as conducting studies and advancing hypersonic capability to Legacy Aegis Weapon Systems. Perform Systems Engineering, architecture analysis, modeling and simulation, advanced hypersonic technology development, and integrate the new capability into the Missile Defense System. Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: Regional GPI Missile</p> <ul style="list-style-type: none">- Continue Technology Readiness Level Assessments of contractor designs- Purchase materials for the technology level maturation testing of critical technologies- Initiate preparations for GPI missile Preliminary Design Reviews (PDR) for multiple vendor designs to establish the baseline for the regional GPI capability to include Mk 41 Vertical Launch System integration and Aegis Engage on Remote engagement capability- Conduct studies to explore and advance concepts in missile technology- Conduct hypersonic threat development and lethality development- Congressional Add: Glide Phase Defeat weapons system (\$292.5 million) for additional maturation of missile critical technology elements for InfraRed (IR) Signal Processing, IR Seeker Components and Window Characterization, Upper Stage Rocket Motor/ Propulsion Elements, Inertial Measurement Units (IMU) and Lethality components			129.434 -	510.117 -	190.555 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604181C / <i>Hypersonic Defense</i>	Project (Number/Name) MD29 / <i>Hypersonic Defense</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>Aegis Weapon System</p> <ul style="list-style-type: none"> - Continue AWS trade studies and concepts supporting Aegis Ballistic Missile Defense (BMD) Element Specification development - Continue modeling changes needed to incorporate AWS upgrades and Interceptor development - Continue Systems Engineering preparations for AWS System Requirements Review (SRR) which establishes the Aegis BMD element specification requirements for a regional GPI capability and the integration of the regional GPI layered defense - Perform interoperability planning of AWS Regional Glide Phase capability with the Missile Defense System - Continue reviews and activities for improving defense against hypersonic threats with the Aegis platform - Continue studies to explore and advance concepts in weapon system technology - Develop Prototype Code for observation purposes during FTX-40 and FTM-43 to support GPI development <p>Disruptive Technology for Future Architecture</p> <ul style="list-style-type: none"> - Continue to develop supporting low-cost/light weight Focal Plane Array sensor electronics for increased throughput and cryocoolers in an open architecture applicable to multiple sensor systems - Continue development of advanced technology concepts to counter the evolving threats - Continue to develop propulsion technology to increase maneuverability and energy management for future endo-atmospheric hypersonic interceptor kill vehicles and rocket motors to include testing and demonstrations in relevant environments <p>Engineering Enablers</p> <ul style="list-style-type: none"> - Perform architecture analysis for regional HD and continue implementation of digital engineering - Conduct analysis and testing to reduce risk of key technical enablers for regional HD - Reduce technical risk with Federally Funded Research Development Centers, University Affiliated Research Centers, and National Labs to conduct analysis, develop prototypes, and execute testing for both kinetic and non-kinetic defensive measures - Continue development of HD models, to include Core Truth Model updates - Leverage cost share opportunities with offensive hypersonic systems to test engineering payloads in low-cost sounding rocket flight tests - Continue development of hypersonic threat models and update existing threat models based on real-world data to support analysis <p>Leverage and Upgrade Existing Systems</p> <ul style="list-style-type: none"> - Continue upgrade for BOA/C2BMC to support regional Aegis GPI capability - Provide BOA algorithm development and prototyping for low latency tracks in support of regional GPI HD efforts <p>FY 2024 Plans: Regional GPI Missile</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense	Project (Number/Name) MD29 / Hypersonic Defense	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> - Conduct Missile Concept Technical Analysis to support development of feasibility data which supports missile subassembly requirement development. - Conduct Missile legacy component assessments to support the initial concept design that will house and use the legacy component. Additionally, Quality Assurance requirements Mission Assurance Provisions need data to justify the operating environments the legacy components will be in and any modifications necessary to support the GPI mission. - Conduct Element-level M&S development to lay the foundation of the design and ensure early subassembly design concepts support integrated missile performance to the GPI requirements. - Continue Development and Maturation of Critical Technology Elements across limited areas of the all up round. - Execute design activities for hardware, software, support systems, human interfaces, cybersecurity, and mechanical and electrical interfaces - Purchase limited materials to support proof of design and design verification testing in support of establishing the preliminary interceptor design. - Conduct hypersonic threat development and lethality development - Explore international cooperative development opportunities through agreements between U.S. and allied nations. <p>Aegis Weapon System</p> <ul style="list-style-type: none"> - Mature design concepts and models as needed to incorporate and evolve AWS upgrades and Interceptor integration activities. - Conduct interoperability planning of AWS Regional Glide Phase capability with the MDS. - Continue and finalize Systems Engineering efforts and conduct AWS SRR which establishes the Aegis BMD element specification requirements for a regional GPI capability and the integration of the regional GPI layered defense. - Continue and finalize development activities to support FTX-40 and FTM-43 targeted capabilities. - Execute development, execution and risk reduction activities to include Search & Track (S&T) and GPI engagement software builds to support planned flight tests and additional test of opportunity options. <p>Disruptive Technology for Future Architecture</p> <ul style="list-style-type: none"> - Improve seeker performance and testing capability in relevant environments - Mature high performance on-demand and relightable propulsion technology - Continue development of advanced technology concepts and component technology maturation to counter the evolving threats <p>Engineering Enablers</p> <ul style="list-style-type: none"> - Continue architecture analysis for regional HD and continue implementation of digital engineering - Align system requirements to Element specifications to include functional, interface, performance, and design suitability requirements - Perform HD lethality range testing and material characterization 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency									Date: March 2023		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense				Project (Number/Name) MD29 / Hypersonic Defense			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024
- Provide limited test analysis and M&S framework development											
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects Congressional add of \$292.5 million for component risk reduction enacted in FY 2023, as well as the scheduled alignment of requirements to the current delivery of the Glide Phase Interceptor capability.											
Title: Partnered Flight Test Participation									28.052	0.000	0.000
Articles:									-	-	-
Description: MDA's participation in Partner Flight Test events is critical for data collection across a diverse hypersonic threat set from multiple types of launch platforms. Participation in these test events supports the development and fielding of MDA's regional HD capabilities to protect the United States, its allies, and deployed forces in all phases of flight.											
FY 2023 Plans: N/A.											
FY 2024 Plans: N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: N/A											
Accomplishments/Planned Programs Subtotals									273.106	510.117	190.555
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603176C: Advanced Concepts and Performance Assessment	39.678	39.737	17.825	-	17.825	18.301	18.752	19.134	19.596	Continuing	Continuing
• 0603180C: Advanced Research	51.270	85.323	21.461	-	21.461	22.024	22.571	23.031	23.591	Continuing	Continuing
• 0603884C: Ballistic Missile Defense Sensors	250.123	230.502	239.159	-	239.159	212.191	233.877	242.623	251.226	Continuing	Continuing
• 0603890C: BMD Enabling Programs	616.800	588.847	597.720	-	597.720	620.823	639.398	648.954	650.432	Continuing	Continuing
• 0603892C: AEGIS BMD	628.014	595.572	693.727	-	693.727	639.678	706.974	699.611	733.909	Continuing	Continuing
• 0603896C: Ballistic Missile Defense Command and	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023	
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense			Project (Number/Name) MD29 / Hypersonic Defense			

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
<i>Control, Battle Management & Communication</i>											
• 0603915C: Ballistic Missile Defense Targets	560.445	579.075	570.258	-	570.258	583.747	642.329	664.683	510.063	Continuing	Continuing
• 1206895C: Ballistic Missile Defense System Space Programs	285.706	129.957	109.483	-	109.483	119.860	43.032	43.900	44.957	Continuing	Continuing

Remarks

D. Acquisition Strategy

To optimize Missile Defense System performance, MDA leverages the nation's engineering centers of excellence at government agencies, Military Services, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and industry. The executing agents use varying contracting strategies in a flexible manner to maximize their contribution to the Missile Defense System. MDA acquires products and services by competitive means to the extent that is possible, practical and uses the Advanced Technology Broad Agency Announcement process to award concept definition contracts.

For the regional Glide Phase Interceptor (GPI), MDA developed the acquisition strategy to utilize a Broad Agency Announcement (BAA) for the competitive selection and award of Other Transaction Authority agreements. This strategy awarded three Missile System contracts in November 2021, with the continuation of two contracts in June 2022 through PDR, to drive innovation in missile system modification. Sole source Weapon Systems contract awarded in July 2022.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense				Project (Number/Name) MD29 / Hypersonic Defense					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Hypersonic Defense - Component Technology for Sensors and Weapons	MIPR	Various : AL	20.500	0.000		0.000		0.000		-		0.000	0.000	20.500	0.000
Engineering Enablers - Hypersonics Lab	MIPR	JACOBS TECHNOLOGY INC. : AL	0.000	1.856	May 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Engineering Enablers - Hypersonics Lab -2	Various	Various : AL	0.000	0.642	Jan 2022	0.000		0.000		-		0.000	0.000	0.642	0.000
Hypersonic Defense - Missile Defense System C2BMC Upgrades	C/Various	Various : AL	33.645	0.000		0.000		0.000		-		0.000	0.000	33.645	0.000
Hypersonic Defense - Missile Defense System Sensor Upgrades - AN/TPY-2	SS/CPFF	Raytheon : MA	16.474	0.000		0.000		0.000		-		0.000	0.000	16.474	0.000
Hypersonic Defense - Missile Defense System Sensor Upgrades - LRDR	C/FFP	Lockheed Martin : NJ	12.007	0.000		0.000		0.000		-		0.000	0.000	12.007	0.000
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - Lethality and Analysis	IA	DOE - DEPARTMENT OF ENERGY (DOE) : Various	16.732	3.458	Nov 2021	0.000		0.000		-		0.000	0.000	20.190	0.000
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - M&S	C/CPAF	Various : AL	13.495	5.341	Dec 2021	0.000		0.000		-		0.000	0.000	18.836	0.000
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - SNL	IA	Department of Energy (DOE)/National Nuclear Security Administration/ Sandia Field Office (NNSA SFO) : NM	0.000	6.695	Oct 2021	0.000		0.000		-		0.000	0.000	6.695	0.000
Engineering Enablers - Regional Hypersonic	Various	Various : AL	16.887	1.800	Dec 2021	0.000		0.000		-		0.000	0.000	18.687	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense				Project (Number/Name) MD29 / Hypersonic Defense					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Defense - Systems Engineering - Threat Engineering															
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering -- FFRDC/UARC	FFRDC	Various : AL, VA	57.193	0.000		0.000		0.000		-		0.000	0.000	57.193	0.000
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering – Requirements Development	Various	Various : Various	4.971	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Hypersonic Defense - Sensor Technology - Advanced Threat Tracking and Analysis / Low Latency Processing	MIPR	Various : AL, CA	13.016	0.000		0.000		0.000		-		0.000	0.000	13.016	0.000
Hypersonic Defense - Sensor Technology - Sensor Concept and Development	MIPR	Various : AL	21.522	0.000		0.000		0.000		-		0.000	0.000	21.522	0.000
Engineering Enablers - System Design/ Specification	C/CPAF	BOEING : AL	0.000	4.231	Dec 2021	0.000		0.000		-		0.000	0.000	4.231	0.000
Hypersonic Defense - Systems Engineering	Allot	MDA : AL, VA	5.444	0.000		0.000		0.000		-		0.000	0.000	5.444	0.000
Hypersonic Defense - Systems Engineering -- CSS	C/CPFF	TEAMS : AL, VA	6.688	0.000		0.000		0.000		-		0.000	0.000	6.688	0.000
Hypersonic Defense - Systems Engineering -- FFRDC/UARC	FFRDC	Various : VA, AL	7.257	0.000		0.000		0.000		-		0.000	0.000	7.257	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense						Project (Number/Name) MD29 / Hypersonic Defense			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Hypersonic Defense - Systems Engineering -- Industry	C/CPAF	Boeing : AL	3.539	0.000		0.000		0.000		-		0.000	0.000	3.539	0.000
Hypersonic Defense - Technology Development Program Operations	Allot	MDA : AL, VA	11.861	0.000		0.000		0.000		-		0.000	0.000	11.861	0.000
Engineering Enablers - Testing & Assessment	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	0.000	1.278	Mar 2022	0.000		0.000		-		0.000	0.000	1.278	0.000
Hypersonic Defense - Weapon Concept Definition & Risk Reduction	C/Various	Various : AL	38.301	0.000		0.000		0.000		-		0.000	0.000	38.301	0.000
Disruptive Technologies for Future Architecture - Component Technology for Sensors and Weapons - Propulsion and Aero-Controls	C/CPFF	NORTHROP GRUMMAN : Various	0.000	4.000	Jul 2022	0.000		0.000		-		0.000	0.000	4.000	0.000
Disruptive Technologies for Future Architecture - Component Technology for Sensors and Weapons - Seeker and Aero-Optics - Boeing	C/CPFF	BOEING : AL	0.000	0.500	Jul 2022	0.000		0.000		-		0.000	0.000	0.500	0.000
Disruptive Technologies for Future Architecture - Component Technology for Sensors and Weapons - Seeker and Aero-Optics - SDL	C/CPFF	SPACE DYNAMICS LABORATORY : Various	0.000	3.200	Apr 2022	0.000		0.000		-		0.000	0.000	3.200	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense				Project (Number/Name) MD29 / Hypersonic Defense					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Disruptive Technologies for Future Architecture - Regional Hypersonic Defense - Component Technology for Sensors and Weapons	MIPR	Various : AL	53.782	11.094	Dec 2021	0.000		0.000		-		0.000	0.000	64.876	0.000
Disruptive Technologies for Future Architecture - Regional Hypersonic Defense - Sensor Technology - Advanced Threat Tracking and Analysis / Low Latency Processing	MIPR	Various : AL, CA	21.726	2.300	May 2022	0.000		0.000		-		0.000	0.000	24.026	0.000
Disruptive Technologies for Future Architecture - Regional Hypersonic Defense - Sensor Technology / Sensor Concept and Development	MIPR	DOD - USAF - SECRETARY OF THE AIR FORCE, FINANCIAL MANAGEMENT (SAF/FM) : Various	27.934	4.688	Dec 2021	0.000		0.000		-		0.000	0.000	32.622	0.000
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense - C2BMC Regional GPI	C/CPAF	SciTec : Newark, NJ	0.000	4.181	Nov 2021	0.000		0.000		-		0.000	0.000	4.181	0.000
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense - C2BMC Regional GPI Prototype/ Development	C/CPAF	Northrop Grumman : CO	0.000	12.600	Mar 2022	0.000		0.000		-		0.000	0.000	12.600	0.000
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense - Missile Defense System C2BMC	Various	Various : Various	35.470	0.000		0.000		0.000		-		0.000	0.000	35.470	0.000

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Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense						Project (Number/Name) MD29 / Hypersonic Defense			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense - Missile Defense System C2BMC Upgrades (Prime)	C/CPIF	Lockheed Martin : AL	18.605	0.048	Nov 2021	0.000		0.000		-		0.000	0.000	18.653	0.000
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense - Missile Defense System C2BMC Upgrades for HD	C/CPAF	Northrop Grumman : CO	30.598	2.768	Nov 2021	0.000		0.000		-		0.000	0.000	33.366	0.000
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense - Missile Defense System Sensor Upgrades	C/FFP	Lockheed Martin : NJ	4.189	0.000		0.000		0.000		-		0.000	0.000	4.189	0.000
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense - Missile Defense System Sensor Upgrades - AN/TPY-2	SS/CPFF	Raytheon : MA	30.793	4.894	Nov 2021	0.000		0.000		-		0.000	0.000	35.687	0.000
Leverage and Upgrade Existing Systems - Regional Hypersonic Defense-Missile Defense System C2BMC Upgrades BAA	C/CPFF	LOCKHEED MARTIN CORPORATION : TX	9.377	0.000		0.000		0.000		-		0.000	0.000	9.377	0.000
Regional Hypersonic Missile Defense Capability - Engineering Support	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) DAHLGREN DIVISION (NSWCDD) : VA	0.000	12.253	Nov 2021	18.006	Nov 2022	9.068	Nov 2023	-		9.068	Continuing	Continuing	Continuing

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Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense				Project (Number/Name) MD29 / Hypersonic Defense					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Regional Hypersonic Missile Defense Capability - Missile System	C/Various	Various : Various	0.000	0.445	Nov 2021	14.025	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Missile System - RMD	C/FFP	RAYTHEON : AZ	0.000	46.761	Nov 2021	182.522	Nov 2022	65.228	Nov 2023	-		65.228	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Missile System - NG	C/FFP	NORTHROP GRUMMAN : AZ	0.000	46.094	Nov 2021	182.213	Nov 2022	65.228	Nov 2023	-		65.228	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Missile System- LM	C/FFP	LOCKHEED MARTIN CORPORATION : NJ	0.000	14.825	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Engineering Support	MIPR	NSWCD : VA	9.259	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Interface Change Proposals	MIPR	NIWC PAC : CA	2.091	0.000		0.000		0.000		-		0.000	0.000	2.091	0.000
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Missile System	C/Various	Various : Various	3.496	0.000		0.000		0.000		-		0.000	0.000	3.496	0.000
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Missile System - RMD	C/FFP	RAYTHEON : AZ	12.204	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Missile System - NG	C/FFP	NORTHROP GRUMMAN : AZ	11.035	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense				Project (Number/Name) MD29 / Hypersonic Defense					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Missile System-LM	C/FFP	LOCKHEED MARTIN CORPORATION : NJ	9.114	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Special Studies	C/CPAF	APL : MD	9.314	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Systems Engineering	MIPR	MIT/LL : MA	4.300	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Systems Engineering Support	Various	Various : Various	0.443	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Weapon Concept Definition and Risk Reduction	C/Various	Various : VA	42.126	0.000		0.000		0.000		-		0.000	0.000	42.126	0.000
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense - Weapon System Modification	C/CPIF	Lockheed Martin : NJ	44.165	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Regional Glide Phase Defeat Weapon System - Regional Hypersonic Defense -MDA	Allot	MDA : AL, VA	10.952	0.000		0.000		0.000		-		0.000	0.000	10.952	0.000
Regional Glide Phase Defeat Weapon System - Regional Hypersonic	Various	Various : TBD	3.000	0.000		0.000		0.000		-		0.000	0.000	3.000	0.000

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Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense						Project (Number/Name) MD29 / Hypersonic Defense			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Defense- Weapon System Special Studies															
Regional Hypersonic Missile Defense Capability - Special Studies	C/CPAF	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	0.000	7.269	Nov 2021	12.450	Nov 2022	7.311	Nov 2023	-		7.311	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Systems Engineering	MIPR	MASSACHUSETTS INSTITUTE OF TECHNOLOGY : MA	0.000	0.000		3.000	Nov 2022	3.400	Nov 2023	-		3.400	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Systems Engineering Support	Various	Various : Various	0.000	1.787	Nov 2021	1.928	Nov 2022	0.519	Nov 2023	-		0.519	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Weapon System Modification	C/CPIF	LOCKHEED MARTIN CORPORATION : NJ	0.000	0.000		27.356	Nov 2022	18.135	Nov 2023	-		18.135	Continuing	Continuing	Continuing
Subtotal			693.505	205.008		441.500		168.889		-		168.889	Continuing	Continuing	N/A
Remarks N/A															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering	Various	Various : VARIOUS	20.962	5.573	Nov 2021	0.000		0.000		-		0.000	0.000	26.535	0.000
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - Aerospace	FFRDC	DOD - USSF - SPACE AND MISSILE SYSTEMS CENTER (SMC) : CA	0.000	2.800	Oct 2021	0.000		0.000		-		0.000	0.000	2.800	0.000

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Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / <i>Hypersonic Defense</i>						Project (Number/Name) MD29 / <i>Hypersonic Defense</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - CS Support	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : VARIOUS	11.006	2.439	Nov 2021	0.000		0.000		-		0.000	0.000	13.445	0.000
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - Engineering Architecture Analysis Support	MIPR	DOD - USAF - AIR FORCE LIFE CYCLE MANAGEMENT CENTER (AFLCMC) : MA	0.000	5.108	May 2022	0.000		0.000		-		0.000	0.000	5.108	0.000
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - Hypersonic Architectures Modeling, Requirements and Simulations (HAMRS)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	0.000	7.095	Dec 2021	0.000		0.000		-		0.000	0.000	7.095	0.000
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - JHU/APL	FFRDC	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	0.000	15.199	Dec 2021	0.000		0.000		-		0.000	0.000	15.199	0.000
Engineering Enablers - Regional Hypersonic Defense - Systems Engineering - MITRE	FFRDC	DOD - USA - COMMUNICATIONS ELECTRONICS COMMAND (CECOM) : MD	0.000	1.832	Nov 2021	0.000		0.000		-		0.000	0.000	1.832	0.000
Regional Hypersonic Missile Defense Capability - Component Technology for Sensors and Weapons - High Temperature Materials	C/CPFF	Various : Various	0.000	0.000		0.500	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Risk Reduction - JHU/APL	FFRDC	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS	0.000	0.000		4.020	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing

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Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense				Project (Number/Name) MD29 / Hypersonic Defense					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		LABORATORY LLC, THE : MD													
Regional Hypersonic Missile Defense Capability - Component Technology Development	MIPR	Various : AL	0.000	0.000		0.000		5.479	Dec 2023	-		5.479	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Component Technology for Sensors and Weapons - Propulsion and Aero- Controls	C/CPFF	NORTHROP GRUMMAN : Various	0.000	0.000		0.917	Dec 2022	0.945	Dec 2023	-		0.945	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Component Technology for Sensors and Weapons - Seeker and Aero-Optics - Boeing	C/CPFF	BOEING : AL	0.000	0.000		1.980	Dec 2022	2.039	Dec 2023	-		2.039	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Component Technology for Sensors and Weapons - Seeker and Aero-Optics - SDL	C/CPFF	SPACE DYNAMICS LABORATORY : Various	0.000	0.000		0.938	Dec 2022	0.966	Dec 2023	-		0.966	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Risk Reduction - MIT/LL	MIPR	DOD - USAF - AIR FORCE LIFE CYCLE MANAGEMENT CENTER (AFLCMC) : MA	0.000	0.000		3.793	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Risk Reduction - SNL	IA	DOE - DEPARTMENT OF ENERGY (DOE) : NM	0.000	0.000		4.300	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Risk Reduction - Various	Various	Various : Various	0.000	0.000		0.000		3.218	Nov 2023	-		3.218	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense						Project (Number/Name) MD29 / Hypersonic Defense			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Systems Engineering - Aerospace - system generated	FFRDC	AEROSPACE OPTICS, INC. : CA	0.000	0.000		3.069	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Systems Engineering - CS Specialized - system generated	C/TBD	039664375 - TAMERAN GRAPHIC SYSTEMS, INC. : TBD	0.000	0.000		4.135	Nov 2022	1.342	Nov 2023	-		1.342	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Systems Engineering - CS Specialty	C/CPFF	MODERN TECHNOLOGY SOLUTIONS, INC. : Various	0.000	0.000		1.117	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Systems Engineering - CS Support - system generated	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : Various	0.000	0.000		1.698	Nov 2022	1.693	Nov 2023	-		1.693	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Systems Engineering - Engineering Architecture Analysis Support - system generated	MIPR	DOD - USAF - AIR FORCE LIFE CYCLE MANAGEMENT CENTER (AFLCMC) : MA	0.000	0.000		1.250	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Systems Engineering - Hypersonic Architectures Modeling, Requirements	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	0.000	0.000		5.113	Dec 2022	1.075	Dec 2023	-		1.075	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense				Project (Number/Name) MD29 / Hypersonic Defense					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
and Simulations (HAMRS) - system generated															
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Systems Engineering - JHU/APL - system generated	FFRDC	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	0.000	0.000		2.809	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Systems Engineering - Lethality and Analysis	IA	DOE - DEPARTMENT OF ENERGY (DOE) : Various	0.000	0.000		4.441	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Systems Engineering - M&S	C/CPAF	Various : AL	0.000	0.000		4.559	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Systems Engineering - MITRE - system generated	FFRDC	DOD - USA - COMMUNICATIONS ELECTRONICS COMMAND (CECOM) : MD	0.000	0.000		1.585	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Systems Engineering - Threat Engineering	Various	Various : AL	0.000	0.000		2.000	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Systems Engineering - system generated	Various	Various : Various	0.000	0.000		1.362	Dec 2022	1.926	Nov 2023	-		1.926	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Engineering Enablers - Systems Engineering	Various	Various : Various	0.000	0.000		1.681	Dec 2022	2.983	Nov 2023	-		2.983	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense				Project (Number/Name) MD29 / Hypersonic Defense					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
- Requirements Development															
Regional Hypersonic Missile Defense Capability - Leverage and Upgrade Existing Systems - C2BMC Regional GPI Upgrades	C/CPFF	NORTHROP GRUMMAN : CO	0.000	0.000		12.424	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Regional Hypersonic Missile Defense Capability - Sensor Technology / Sensor Concept and Development	MIPR	DOD - USAF - SECRETARY OF THE AIR FORCE, FINANCIAL MANAGEMENT (SAF/FM) : Various	0.000	0.000		4.926	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			31.968	40.046		68.617		21.666		-		21.666	Continuing	Continuing	N/A
Remarks N/A															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Partnered Flight Test Participation - Partner Flight Test Participation	MIPR	DOD - USN - PACIFIC MISSILE RANGE FACILITY BARKING SANDS (PMRF) : AL/CA/CO/ DC/HI/TN/TX	107.088	1.107	Jul 2022	0.000		0.000		-		0.000	0.000	108.195	0.000
Partnered Flight Test Participation - Partnered Flight Test Participation - Partner Flight Test Participation	MIPR	DOE - DEPARTMENT OF ENERGY (DOE) : NM	0.000	7.450	Sep 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Partnered Flight Test Participation - Partnered Flight Test Participation	C/CPAF	L-3 COMMUNICATIONS	0.000	6.559	Jun 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense				Project (Number/Name) MD29 / Hypersonic Defense					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
- Partner Flight Test Participation (L-3 Comms)		CORPORATION : OK													
Partnered Flight Test Participation - Partnered Flight Test Participation - Partner Flight Test Participation (MARAD)	IA	DOT - MARITIME ADMINISTRATION (MARAD) NATIONAL DEFENSE RESERVE FLEET (NDRF) : TBD	0.000	6.091	Aug 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Partnered Flight Test Participation - Partnered Flight Test Participation - Partner Flight Test Participation -PMRF	MIPR	DOD - USN - PACIFIC MISSILE RANGE FACILITY BARKING SANDS (PMRF) : CA	0.000	1.633	Sep 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Partnered Flight Test Participation - Partnered Flight Test Participation - Partnered Flight Test Participation - Partner Flight Test Participation	MIPR	DOD - USAF - 412TH TEST WING (412 TW) : CA	0.000	3.000	Dec 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Partnered Flight Test Participation - Partnered Flight Test Participation - Partnered Flight Test Participation - Partner Flight Test Participation - CCDC	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : TBD	0.000	1.092	Jul 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Partnered Flight Test Participation - Partnered Flight Test Participation - Partnered Flight Test Participation - Partner Flight Test Participation-NAWC	MIPR	DOD - USN - NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION (NAWCAD) SURFACE/ AVIATION INTEROPERABILITY LA : MD	0.000	1.120	Apr 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			107.088	28.052		0.000		0.000		-		0.000	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense				Project (Number/Name) MD29 / Hypersonic Defense					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			832.561	273.106		510.117		190.555		-		190.555	Continuing	Continuing	N/A
Remarks Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023														
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense										Project (Number/Name) MD29 / Hypersonic Defense									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
C2BMC Capability Development										◇	◇	◇	◇	◇	◇	◇	◇	◇											
C2BMC GPI Capability Development																				◇	◇	◇	◇	◇	◇	◇			
Hypersonic Threat Sensor Technology Development										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
Weapons Technology Risk Reduction Contract(s) Award										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
Regional Hypersonic Defense Sensor & Weapons Component Technology Capability Development										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	
Missile System Requirement Review													◇																
Weapon System Preliminary System Review													◇																
Technology Plan Review														◇															
Technology Development Decision														◇															
Weapons System Requirement Review																		◇											

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604181C / <i>Hypersonic Defense</i>	Project (Number/Name) MD29 / <i>Hypersonic Defense</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
C2BMC Capability Development	1	2022	2	2024
C2BMC GPI Capability Development	1	2026	4	2028
Hypersonic Threat Sensor Technology Development	1	2022	4	2028
Weapons Technology Risk Reduction Contract(s) Award	1	2022	4	2028
Regional Hypersonic Defense Sensor & Weapons Component Technology Capability Development	1	2022	4	2028
Missile System Requirement Review	4	2022	4	2022
Weapon System Preliminary System Review	4	2022	4	2022
Technology Plan Review	2	2023	2	2023
Technology Development Decision	2	2023	2	2023
Weapons System Requirement Review	4	2024	4	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense				Project (Number/Name) MD40 / Program Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program Wide Support	22.171	8.780	7.860	18.442	-	18.442	23.312	11.892	14.889	28.606	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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	8.780	7.860	18.442
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604181C / <i>Hypersonic Defense</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p><i>FY 2023 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2024 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase from FY 2023 to FY 2024 reflects the PWS allocation 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.</p>			
Accomplishments/Planned Programs Subtotals		8.780	7.860
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services (A&AS) support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense				Project (Number/Name) MD40 / Program Wide Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Facilities and Maintenance	MIPR	Various : AL, CO, CA, VA	0.000	6.485	Nov 2021	0.015	Nov 2022	0.000		-		0.000	0.000	6.500	0.000
Program Wide Support - Agency Facilities and Maintenance SRM	MIPR	Various : Multi: AK, AL, CA, CO, HI, VA	4.370	1.084	Dec 2021	1.472	Nov 2022	3.371	Nov 2023	-		3.371	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Various	Various : Multi, AL, CA, CO, VA	2.161	0.000		0.000		0.000		-		0.000	0.000	2.161	0.000
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	Various : Multi: AK/AL/CA/CO/HI/MD/VA/NJ/NY/OCONUS	0.265	0.000		0.000		0.000		-		0.000	0.000	0.265	0.000
Program Wide Support - Agency Operations and Support Services	C/Various	Various : Multi: AK, AL, CA, CO, HI, VA	5.308	1.211	Nov 2021	6.373	Nov 2022	0.000		-		0.000	0.000	12.892	0.000
Program Wide Support - Agency Operations and Support Services #2	C/CPFF	Cherokee Nation Red Wing : Various	0.000	0.000		0.000		4.890	Nov 2023	-		4.890	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services #3	C/FFP	HUNTSVILLE REHABILITATION FOUNDATION : AL	0.000	0.000		0.000		7.317	Nov 2023	-		7.317	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations, Sustainment and GPC	C/FFP	Various : Multi: AK, AL, CA, HI, NY, NM, VA	3.469	0.000		0.000		0.000		-		0.000	0.000	3.469	0.000
Program Wide Support - Facilities Maintenance	MIPR	Various : Multi: AK, AL, CA, CO, HI, VA	6.598	0.000		0.000		0.000		-		0.000	0.000	6.598	0.000
Subtotal			22.171	8.780		7.860		15.578		-		15.578	Continuing	Continuing	N/A
Remarks N/A															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
0400 / 4						PE 0604181C / Hypersonic Defense				MD40 / Program Wide Support					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations and Support Services	C/CPFF	STRATEGIC ALLIANCE BUSINESS GROUP LLC : AL	0.000	0.000		0.000		2.864	Nov 2023	-		2.864	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		2.864		-		2.864	Continuing	Continuing	N/A
Remarks															
N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			22.171	8.780		7.860		18.442		-		18.442	Continuing	Continuing	N/A
Remarks															
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																							
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense										Project (Number/Name) MD40 / Program Wide Support																	
Significant Event Complete ▲					Milestone Decision Complete ★					Element Test Complete ◆					System Level Test Complete ●					Complete Activity ◆																	
Significant Event Planned △					Milestone Decision Planned ☆					Element Test Planned ◇					System Level Test Planned ○					Planned Activity ◇																	
										FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
MD40 Program-Wide Support										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604181C / Hypersonic Defense	Project (Number/Name) MD40 / Program Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0604672C / Homeland Defense Radar-Hawaii
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	378.491	75.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	453.491
MD41: Homeland Defense Radar-Hawaii (HDR-H)	378.491	75.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	453.491

Program MDAP/MAIS Code: 362

Note

No funding is requested for this program.

A. Mission Description and Budget Item Justification

The defense of Hawaii remains a high priority mission for the Department of Defense. However, various factors have changed since the early planning stages of Homeland Defense Radar-Hawaii (HDR-H), including an evolution of the threat landscape and the enhanced capabilities planned for the Next Generation Interceptor. In light of these changes, no funding is requested for HDR-H.

B. Program Change Summary (\$ in Millions)	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	75.000	0.000	0.000	-	0.000
Current President's Budget	75.000	0.000	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	0.000	-	0.000

Change Summary Explanation

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604672C / Homeland Defense Radar-Hawaii				Project (Number/Name) MD41 / Homeland Defense Radar-Hawaii (HDR-H)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD41: Homeland Defense Radar-Hawaii (HDR-H)	378.491	75.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	453.491
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note No funding is requested for this program.												
A. Mission Description and Budget Item Justification The defense of Hawaii remains a high priority mission for the Department of Defense. However, various factors have changed since the early planning stages of Homeland Defense Radar-Hawaii (HDR-H), including an evolution of the threat landscape and the enhanced capabilities planned for the Next Generation Interceptor. In light of these changes, no funding is requested for HDR-H.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024	
Title: Homeland Defense Radar - Hawaii (HDR-H) Articles: Description: Congressional Plus Up for procurement of radar components and sub-assemblies. FY 2023 Plans: -No funding requested for this effort in FY 2023 FY 2024 Plans: -No funding requested for this effort in FY 2024 FY 2023 to FY 2024 Increase/Decrease Statement: N/A									75.000	0.000	0.000	
									-	-	-	
Accomplishments/Planned Programs Subtotals									75.000	0.000	0.000	
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• 0603882C: Ballistic Missile Defense Midcourse Defense Segment	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency								Date: March 2023			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0604672C / <i>Homeland Defense Radar-Hawaii</i>				Project (Number/Name) MD41 / <i>Homeland Defense Radar-Hawaii (HDR-H)</i>			

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	250.123	230.502	239.159	-	239.159	212.191	233.877	242.623	251.226	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing
• 0604873C: <i>Long Range Discrimination Radar (LRDR)</i>	129.552	75.120	103.517	-	103.517	100.114	68.815	69.219	65.521	Continuing	Continuing
• 0604879C: <i>Ballistic Missile Defense Sensor Test</i>	77.428	88.326	111.049	-	111.049	90.697	103.885	154.905	127.807	Continuing	Continuing

Remarks

D. Acquisition Strategy

An acquisition strategy was approved in December 2017 for the procurement of a single Homeland Defense Radar (HDR) for Hawaii. In May of 2018, this acquisition strategy was updated to include the procurement of up to three Homeland Defense Radars. A competitively awarded multiple-award indefinite delivery, indefinite quantity (IDIQ) contract was awarded in July 2018 to three contractors. The first IDIQ delivery order was competitively awarded on December 18, 2018 for the development, construction, integration and testing, and delivery of one HDR to be sited in Hawaii. The HDR-H delivery order contract includes fixed price and cost-reimbursable line items that properly balance acquisition costs and risks. Performance and cost incentives were included to motivate contractor performance. The HDR-H delivery order contract includes the requirement for the radar prime to deliver a full technical data package (TDP) that will enable the Government to effectively and affordably sustain the system. As a result of delays in site selection, MDA issued a Partial Stop-Work Order on January 30, 2020 in accordance with Federal Acquisition Regulations (FAR) Clause 52.242-15, Stop-Work Order, and directed Lockheed Martin to stop work against the HDR-H Radar Prime contract except for efforts associated with the manufacturing of sub-array suites (SAS), antenna panels, two processing cabinets, and software development.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604672C / Homeland Defense Radar-Hawaii				Project (Number/Name) MD41 / Homeland Defense Radar-Hawaii (HDR-H)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Homeland Defense Radar - Hawaii (HDR-H) - Civilians/Travel	Allot	MDA : Various	7.989	0.865	May 2022	0.000		0.000		-		0.000	0.000	8.854	0.000
Homeland Defense Radar - Hawaii (HDR-H) - Communications Integration	SS/CPIF	Lockheed Martin : AL	9.022	0.000		0.000		0.000		-		0.000	0.000	9.022	0.000
Homeland Defense Radar - Hawaii (HDR-H) - Contractor Support Services	C/CPFF	MDA Various : AL	13.612	2.735	Jul 2022	0.000		0.000		-		0.000	0.000	16.347	0.000
Homeland Defense Radar - Hawaii (HDR-H) - FFRDC/UARC	MIPR	GTRI, JHU/APL, MITRE : GA, VA, AL	7.043	0.000		0.000		0.000		-		0.000	0.000	7.043	0.000
Homeland Defense Radar - Hawaii (HDR-H) - Lead Service Cell & Radar Material	Various	MDA Various : AL, CO	0.483	0.000		0.000		0.000		-		0.000	0.000	0.483	0.000
Homeland Defense Radar - Hawaii (HDR-H) - Prime Contractor	C/FPIF	Lockheed Martin : NJ	326.415	70.400	Apr 2022	0.000		0.000		-		0.000	0.000	396.815	0.000
Homeland Defense Radar - Hawaii (HDR-H) - Site Activation & Studies	MIPR	Various : AL, HI	13.927	1.000	Aug 2022	0.000		0.000		-		0.000	0.000	14.927	0.000
Subtotal			378.491	75.000		0.000		0.000		-		0.000	0.000	453.491	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			378.491	75.000		0.000		0.000		-		0.000	0.000	453.491	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency							Date: March 2023		
Appropriation/Budget Activity 0400 / 4			R-1 Program Element (Number/Name) PE 0604672C / Homeland Defense Radar-Hawaii		Project (Number/Name) MD41 / Homeland Defense Radar-Hawaii (HDR-H)				
	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract

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

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency							Date: March 2023										
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0604672C / Homeland Defense Radar-Hawaii				Project (Number/Name) MD41 / Homeland Defense Radar-Hawaii (HDR-H)									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028	
Homeland Defense Radar - Hawaii (HDR-H)				◆◆◆◆													

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604672C / Homeland Defense Radar-Hawaii	Project (Number/Name) MD41 / Homeland Defense Radar-Hawaii (HDR-H)	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Homeland Defense Radar - Hawaii (HDR-H)	1	2022	4	2022

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604873C / <i>Long Range Discrimination Radar (LRDR)</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	1,173.005	129.552	75.120	103.517	-	103.517	100.114	68.815	69.219	65.521	Continuing	Continuing
MD96: <i>Long Range Discrim Radar (LRDR)</i>	1,115.053	124.409	72.392	99.837	-	99.837	96.511	66.034	66.410	62.615	Continuing	Continuing
MD40: <i>Program Wide Support</i>	57.952	5.143	2.728	3.680	-	3.680	3.603	2.781	2.809	2.906	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Increase from Fiscal Year (FY) 2023 to FY 2024 provides for Increment 6C/7 development, continuation of the Transition and Transfer process, and initiation of Increment 10 development requirements for enhanced radar capabilities and includes post-transfer radar sustainment efforts.

A. Mission Description and Budget Item Justification

The LRDR program supports and contributes to the Missile Defense Agency mission of developing and deploying a layered Missile Defense System to defend the homeland from missile attacks of all ranges, in all phases of flight by providing persistent long-range midcourse discrimination, precision tracking and hit assessment as an element of the Missile Defense System Homeland Defense Capability. The LRDR program also supports the Space Domain Awareness (SDA) and Space Object Identification (SOI) mission area.

The LRDR Program Element includes the requirements to design, develop, integrate, deliver, field, and sustain the LRDR. The LRDR operates in the S-band frequency, features scalable and open systems architecture to mitigate evolving threats, and integrates into the Missile Defense System through the Command and Control, Battle Management, and Communications (C2BMC) system. This Program Element includes Missile Defense System threat discrimination improvements to enhance Missile Defense System effectiveness against the evolving threat. The result will be a Missile Defense System architecture more capable of discriminating and interpreting re-entry vehicles with a higher degree of confidence to improve Warfighter shot doctrine, and conserve Ground Based Interceptor inventory. The LRDR is comprised of a LRDR Equipment Shelter, housing two radar array faces, a Mission Control Facility, which supports radar operations, and supporting facilities and infrastructure. The Secretary of the Air Force approved Clear Space Force Station, formerly known as Clear Air Force Station, AK as the LRDR site. The United States Space Force (USSF) Space Operations Command is the designated Lead Major Command. Initial fielding of LRDR was completed on December 6, 2021. In cooperation with the Northern Command (NORTHCOM), the Space Command (SPACECOM), and the USSF, an incremental Fielding approach is being taken. The Early Use Fielding of the LRDR SDA capability is planned for early FY 2024. Fielding of the LRDR Increment 6B.1 capability will occur when LRDR is added to the Missile Defense System Operational Capability Baseline (OCB), currently planned for 4Q FY 2024, delayed by the replanning of formal ground testing of the final LRDR Increment 6B.1 software. Operational Acceptance (OA) by the USSF is planned for 2Q FY 2025 following completion of LRDR Increment 6B.1 Fielding and Flight Test Other (FTX)-26. Completion of the LRDR System Transition and Transfer follows OA and is planned for 4Q FY 2025.

The LRDR Program Element supports the fielding of the LRDR capabilities described below:

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency				Date: March 2023		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)				
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)		PE 0604873C I Long Range Discrimination Radar (LRDR)				
<p>- The LRDR capability that will be fielded when LRDR is added to the Missile Defense System Increment 6B.1 OCB includes increased Missile Defense System raid handling capability, conventional and advanced discrimination capabilities, implementation of mitigation techniques in denied environments, Missile Defense System integration and remote ops via C2BMC, including cyber protection / interoperability, autonomous and cued acquisition capabilities, initial sensor bias reporting, inherent SDA capability, and Electronic Protection (EP) capabilities. Operational fielding of the LRDR capability will be completed when added to the OCB in FY 2024. As stated previously, an incremental fielding approach is being taken to field the SDA capability in advance of the full Missile Defense System capability (i.e., Early Use).</p> <p>- The LRDR capability that will be fielded with the Missile Defense System Increment 6C/7 includes software upgrades to LRDR to improve bias monitoring and reporting, increased discrimination capability that is expanded to a broader spectrum of threats and Resident Space Object scenes, increased support to the SDA/ SOI mission with additional reporting, expanded threat loading and threat type including addition of Hypersonic threat requirements, cybersecurity upgrades, reliability upgrades, cost reduction initiatives to reduce life cycle operating costs, and characterization testing and improvements to EP capability. Operational fielding of the LRDR Increment 6C/7 capability will be completed when added to the OCB in FY 2026.</p> <p>- The LRDR capability that will be fielded with the Missile Defense System Increment 10 includes software upgrades to LRDR to improve capabilities against advanced threats and includes interface modifications to synchronize and verify requirements with the Next Generation Interceptor. Operational fielding of the LRDR Increment 10 capability will be completed when added to the OCB in FY 2028.</p>						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		133.335	75.120	103.451	-	103.451
Current President's Budget		129.552	75.120	103.517	-	103.517
Total Adjustments		-3.783	0.000	0.066	-	0.066
• Congressional General Reductions		0.000	0.000			
• Congressional Directed Reductions		0.000	0.000			
• Congressional Rescissions		0.000	0.000			
• Congressional Adds		0.000	0.000			
• Congressional Directed Transfers		0.000	0.000			
• Reprogrammings		-0.703	0.000			
• SBIR/STTR Transfer		-3.080	0.000			
• Other Adjustment		0.000	0.000	0.066	-	0.066
Change Summary Explanation						
N/A						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604873C / Long Range Discrimination Radar (LRDR)				Project (Number/Name) MD96 / Long Range Discrim Radar (LRDR)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD96: Long Range Discrim Radar (LRDR)	1,115.053	124.409	72.392	99.837	-	99.837	96.511	66.034	66.410	62.615	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from Fiscal Year (FY) 2023 to FY 2024 provides for Increment 6C/7 development, continuation of the Transition and Transfer process, and initiation of Increment 10 development requirements for enhanced radar capabilities and includes post-transfer radar sustainment efforts.

A. Mission Description and Budget Item Justification

The LRDR program supports and contributes to the Missile Defense Agency mission of developing and deploying a layered Missile Defense System to defend the homeland from missile attacks of all ranges, in all phases of flight by providing persistent long-range midcourse discrimination, precision tracking and hit assessment as an element of the Missile Defense System Homeland Defense Capability. The LRDR program also supports the Space Domain Awareness (SDA) and Space Object Identification (SOI) mission area.

The LRDR Program Element includes the requirements to design, develop, integrate, deliver, field, and sustain the LRDR. The LRDR operates in the S-band frequency, features scalable and open systems architecture to mitigate evolving threats, and integrates into the Missile Defense System through the Command and Control, Battle Management, and Communications (C2BMC) system. This Program Element includes Missile Defense System threat discrimination improvements to enhance Missile Defense System effectiveness against the evolving threat. The result will be a Missile Defense System architecture more capable of discriminating and interpreting re-entry vehicles with a higher degree of confidence to improve Warfighter shot doctrine, and conserve Ground Based Interceptor inventory. The LRDR is comprised of a LRDR Equipment Shelter, housing two radar array faces, a Mission Control Facility, which supports radar operations, and supporting facilities and infrastructure. The Secretary of the Air Force approved Clear Space Force Station, formerly known as Clear Air Force Station, AK as the LRDR site. The United States Space Force (USSF) Space Operations Command is the designated Lead Major Command. Initial fielding of LRDR was completed on December 6, 2021. In cooperation with the Northern Command (NORTHCOM), the Space Command (SPACECOM), and the USSF, an incremental Fielding approach is being taken. The Early Use Fielding of the LRDR SDA capability is planned for early FY 2024. Fielding of the LRDR Increment 6B.1 capability will occur when LRDR is added to the Missile Defense System Operational Capability Baseline (OCB), currently planned for 4Q FY 2024, delayed by the replanning of formal ground testing of the final LRDR Increment 6B.1 software. Operational Acceptance (OA) by the USSF is planned for 2Q FY 2025 following completion of LRDR Increment 6B.1 Fielding and Flight Test Other (FTX)-26. Completion of the LRDR System Transition and Transfer follows OA and is planned for 4Q FY 2025.

The LRDR Program Element supports the fielding of the LRDR capabilities described below:

- The LRDR capability that will be fielded when LRDR is added to the Missile Defense System Increment 6B.1 OCB includes increased Missile Defense System raid handling capability, conventional and advanced discrimination capabilities, implementation of mitigation techniques in denied environments, Missile Defense System integration and remote ops via C2BMC, including cyber protection / interoperability, autonomous and cued acquisition capabilities, initial sensor bias reporting, inherent

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604873C / Long Range Discrimination Radar (LRDR)	Project (Number/Name) MD96 / Long Range Discrim Radar (LRDR)		
SDA capability, and Electronic Protection (EP) capabilities. Operational Fielding of the LRDR capability will be completed when added to the OCB in FY 2024. As stated previously, an incremental Fielding approach is being taken to field the SDA capability in advance of the full Missile Defense System capability (i.e., Early Use).				
<p>- The LRDR capability that will be fielded with the Missile Defense System Increment 6C/7 includes software upgrades to LRDR to improve bias monitoring and reporting, increased discrimination capability that is expanded to a broader spectrum of threats and Resident Space Object scenes, increased support to the SDA/ SOI mission with additional reporting, expanded threat loading and threat type including addition of Hypersonic threat requirements, cybersecurity upgrades, reliability upgrades, cost reduction initiatives to reduce life cycle operating costs, and characterization testing and improvements to EP capability. Operational Fielding of the LRDR Increment 6C/7 capability will be completed when added to the OCB in FY 2026.</p> <p>- The LRDR capability that will be fielded with the Missile Defense System Increment 10 includes software upgrades to LRDR to improve capabilities against advanced threats and includes interface modifications to synchronize and verify requirements with the Next Generation Interceptor. Operational Fielding of the LRDR Increment 10 capability will be completed when added to the OCB in FY 2028.</p>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
Title: Long Range Discrimination Radar (LRDR)		124.409	72.392	99.837
Articles:		-	-	-
Description: The LRDR program includes requirement development activities associated with systems engineering, software development, discrimination improvements, design reviews, testing, and modeling and simulation efforts for radar development. Efforts include LRDR site activation and preparation of site infrastructure for construction activities. The program will develop and integrate Command and Control, Battle Management, and Communications (C2BMC) systems for LRDR functionality. The program will develop, maintain, and deliver radar software Increment 6B.1 and establish the installation verification and validation (IV&V) lab for testing of operational software. The program includes purchase, manufacture, integration and test of radar materials. This program will also establish the operational baseline, initiate radar operations and communication, and initiate sustainment operations. The program includes logistics management, reliability, availability, maintainability efforts, data management, and operations support for the LRDR program office. This project also includes Missile Defense System Increment 6C/7 software upgrades to LRDR to further verify and improve discrimination techniques and capability, verify and improve electronic protection techniques and capability, expand capability to a broader spectrum of threats, including hypersonic missile threats, increase support to SDA and SOI, updates to current cybersecurity requirements, and implement cost reduction initiatives to reduce life cycle operating costs. This project also includes Missile Defense System Increment 10 software upgrades to LRDR to improve capabilities against advanced threats, interface modifications to synchronize and verify requirements with the Next Generation Interceptor, and post Transition and Transfer radar sustainment costs.				
Specific and/or unique accomplishments to each FY are as follows:				
FY 2023 Plans:				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0604873C / <i>Long Range Discrimination Radar (LRDR)</i>		Project (Number/Name) MD96 / <i>Long Range Discrim Radar (LRDR)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Achieve final Government acceptance of radar (DD250) - Achieve Authority to Operate - Continue efforts to add LRDR to the Increment 6B.1 OCB by FY 2024 - Complete Live Radiate 08a (LR-08a) test event - Support operational flight testing for LRDR (Flight Test Other (FTX-26)) - Continue efforts to achieve Operational Acceptance (OA) by USSF by FY 2025 - Continue Increment 6C/7 development - Complete Preliminary Design Review and Critical Design Review for Increment 6C/7 - Complete software build for Integrated Ground Test - Initiate fielding preparations to place LRDR improvements onto the Missile Defense System Increment 6C/7 OCB <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Complete demobilization of Temporary Workforce Camp at Clear Space Station (CSFS), AK - Complete Fielding of SDA Early Use capability and Increment 6B.1 capability - Receive final builds of Increment 6C/7 software - Initiate Increment 6C/7 ground testing - Complete Interim Contractor Support phase 2 - Initiate post-transfer development and Operations and Sustainment efforts - Continue efforts to achieve Operational Acceptance (OA) by USSF by FY 2025 - Continue closeout activities for Transition and Transfer of LRDR to the USSF - Initiate LRDR development of Increment 10 capability <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>Increase from Fiscal Year (FY) 2023 to FY 2024 provides for Increment 6C/7 development, continuation of the Transition and Transfer process, and initiation of Increment 10 development requirements for enhanced radar capabilities and includes post-transfer radar sustainment efforts. Completion of transfer of LRDR to the United States Space Force (USSF) is planned to occur in FY 2025.</p>					
Accomplishments/Planned Programs Subtotals			124.409	72.392	99.837

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency								Date: March 2023			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0604873C / Long Range Discrimination Radar (LRDR)				Project (Number/Name) MD96 / Long Range Discrim Radar (LRDR)			

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	250.123	230.502	239.159	-	239.159	212.191	233.877	242.623	251.226	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	44.188	49.367	50.549	-	50.549	56.624	58.020	59.193	60.615	Continuing	Continuing
• 0604672C: <i>Homeland Defense Radar-Hawaii</i>	75.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	75.000
• 0604879C: <i>Ballistic Missile Defense Sensor Test</i>	77.428	88.326	111.049	-	111.049	90.697	103.885	154.905	127.807	Continuing	Continuing
• 31299903: <i>MILCON PLANNING and DESIGN</i>	19.000	47.063	1.035	-	1.035	6.845	0.000	0.000	0.000	0.000	73.943

Remarks

D. Acquisition Strategy

The LRDR acquisition strategy, which was approved on January 7, 2015, incorporates robust acquisition practices to ensure delivery of a best value solution that meets mission performance requirements and reduces lifecycle costs. MDA awarded a fixed-price incentive contract to Lockheed Martin Corporation of Moorestown, NJ, on October 21, 2015, to design, develop, manufacture, integrate & test, and field the LRDR prime mission equipment. The prime contract included other fixed-price and cost-reimbursable line items and options in order to properly balance acquisition costs and risks. Performance and cost incentives were included to motivate contractor performance. The radar prime contractor will deliver a full technical data package, which will enable the government to effectively and affordably sustain the system. MDA synchronized the radar development contract efforts with a simultaneous Military Construction effort, which was executed through the US Army Corps of Engineers. The LRDR completed the initial fielding milestone on December 6, 2021, for Missile Defense System integration and testing of the Increment 6B.1 capability and an expected fielding of LRDR when it is added to the Missile Defense System OCB in FY 2024. The Acquisition Strategy was updated in FY 2021 to add the Increment 6C/7 capability. MDA awarded a cost-plus incentive fee contract to Lockheed Martin on September 20, 2021, to develop and deliver the Increment 6/7 software upgrade. The LRDR acquisition strategy is current being reviewed to consider support options for follow-on development and Operations and Sustainment requirements starting in FY 2024. This new strategy will also include Increment 10 development requirements for enhanced radar capabilities.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604873C / Long Range Discrimination Radar (LRDR)					Project (Number/Name) MD96 / Long Range Discrim Radar (LRDR)				
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Long Range Discrimination Radar (LRDR) - BMEWS Remediation and Removal	MIPR	USACE : AL, AK	25.110	0.000		0.000		0.000		-		0.000	0.000	25.110	0.000
Long Range Discrimination Radar (LRDR) - Civilians/ Travel	Allot	MDA : AL	9.670	4.133	Oct 2021	4.032	Oct 2022	4.261	Oct 2023	-		4.261	Continuing	Continuing	Continuing
Long Range Discrimination Radar (LRDR) - Communications Integration	SS/CPIF	Lockheed Martin : AL, NJ	34.986	0.000		0.000		0.000		-		0.000	0.000	34.986	0.000
Long Range Discrimination Radar (LRDR) - Contract Support Services - No longer funded in this cost category	C/CPFF	Various : Various	14.348	0.000		0.000		0.000		-		0.000	0.000	14.348	0.000
Long Range Discrimination Radar (LRDR) - FFRDC/ UARC - No longer funded in this cost category	MIPR	GTRI, JHU/APL, MITRE, MIT/LL : AL, GA, IL, MA, VA	9.754	0.000		0.000		0.000		-		0.000	0.000	9.754	0.000
Long Range Discrimination Radar (LRDR) - Hybrid Program Office -No longer funded in this cost category	MIPR	US Air Force : Various	0.692	0.000		0.000		0.000		-		0.000	0.000	0.692	0.000
Long Range Discrimination Radar (LRDR) - IV&V	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	19.938	3.996	Nov 2021	3.354	Dec 2022	2.750	Nov 2023	-		2.750	Continuing	Continuing	Continuing
Long Range Discrimination Radar (LRDR) - Prime Contractor - Increment 10	C/TBD	LOCKHEED MARTIN	0.000	0.000		5.429	Jun 2023	19.712	Mar 2024	-		19.712	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604873C / Long Range Discrimination Radar (LRDR)				Project (Number/Name) MD96 / Long Range Discrim Radar (LRDR)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		CORPORATION : TBD													
Long Range Discrimination Radar (LRDR) - Prime Contractor - Increment 6C/7	SS/CPIF	LOCKHEED MARTIN CORPORATION : TBD	13.342	51.033	Oct 2021	23.639	Feb 2023	36.028	Oct 2023	-		36.028	Continuing	Continuing	Continuing
Long Range Discrimination Radar (LRDR) - Prime Contractor -Increment 6B.1	C/FPIF	LOCKHEED MARTIN CORPORATION : NJ	834.392	23.465	Nov 2021	0.000		0.000		-		0.000	0.000	857.857	0.000
Long Range Discrimination Radar (LRDR) - Program Office - No longer funded in this cost category	Various	MDA, JHU/APL, GSA AL, MA, IL : AL, MA, IL	10.616	0.000		0.000		0.000		-		0.000	0.000	10.616	0.000
Long Range Discrimination Radar (LRDR) - Radar Operations, Sustainment, and Fuel - No longer funded in this cost category	MIPR	DOD - USSF - US SPACE FORCE (USSF) : AK	23.238	0.000		0.000		0.000		-		0.000	0.000	23.238	0.000
Long Range Discrimination Radar (LRDR) - Site Activation & Studies	MIPR	USACE : AL, AK	118.967	11.016	Dec 2021	0.000		0.000		-		0.000	0.000	129.983	0.000
Subtotal			1,115.053	93.643		36.454		62.751		-		62.751	Continuing	Continuing	N/A
Remarks N/A															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Long Range Discrimination Radar (LRDR) - Contract Support Services	C/CPFF	Various : Various	0.000	2.250	Oct 2021	1.658	Nov 2022	1.398	Oct 2023	-		1.398	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604873C / Long Range Discrimination Radar (LRDR)						Project (Number/Name) MD96 / Long Range Discrim Radar (LRDR)			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Long Range Discrimination Radar (LRDR) - Contract Support Services - Logistics	C/CPFF	VENTURI, INC. : AL	0.000	1.360	Oct 2021	1.371	Nov 2022	1.271	Nov 2023	-		1.271	Continuing	Continuing	Continuing
Long Range Discrimination Radar (LRDR) - Contract Support Services - Systems Engineering	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : CA	0.000	3.020	Oct 2021	2.411	Nov 2022	2.694	Nov 2023	-		2.694	Continuing	Continuing	Continuing
Long Range Discrimination Radar (LRDR) - FFRDC - MITRE	MIPR	DOD - USA - COMMUNICATIONS ELECTRONICS COMMAND (CECOM) : TBD	0.000	1.002	Nov 2021	1.065	Jan 2023	0.766	Nov 2023	-		0.766	Continuing	Continuing	Continuing
Long Range Discrimination Radar (LRDR) - High Altitude Electromagnetic Pulse (HEMP) Testing	MIPR	DOD - DEFENSE THREAT REDUCTION AGENCY (DTRA) : AK	0.000	0.000		0.000		1.382	Sep 2024	-		1.382	Continuing	Continuing	Continuing
Long Range Discrimination Radar (LRDR) - Prime Radar Integration	MIPR	DOD - USA - US ARMY CORPS OF ENGINEERS (USACE) : Various	0.000	0.000		1.732	Mar 2023	2.890	Nov 2023	-		2.890	Continuing	Continuing	Continuing
Long Range Discrimination Radar (LRDR) - Radar Operations, Sustainment, and Fuel	MIPR	DOD - USSF - US SPACE FORCE (USSF) : TBD	0.000	17.815	Nov 2021	25.131	Jan 2023	25.674	Nov 2023	-		25.674	Continuing	Continuing	Continuing
Long Range Discrimination Radar (LRDR) - UARC - GTRI	SS/CPFF	GEORGIA TECH APPLIED RESEARCH CORPORATION : Various	0.000	2.421	Apr 2022	0.000		0.000		-		0.000	0.000	2.421	0.000
Long Range Discrimination Radar (LRDR) - UARC - JHU/APL	SS/CPFF	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS	0.000	2.898	Nov 2021	2.570	Feb 2023	1.011	Nov 2023	-		1.011	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604873C / Long Range Discrimination Radar (LRDR)						Project (Number/Name) MD96 / Long Range Discrim Radar (LRDR)			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		LABORATORY LLC, THE : TBD													
Subtotal			0.000	30.766		35.938		37.086		-		37.086	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1,115.053	124.409		72.392		99.837		-		99.837	Continuing	Continuing	N/A
Remarks Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604873C / Long Range Discrimination Radar (LRDR)	Project (Number/Name) MD96 / Long Range Discrim Radar (LRDR)
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	Significant Event Complete ▲				Milestone Decision Complete ★				Element Test Complete ◆				System Level Test Complete ●				Complete Activity ◆			
	Significant Event Planned △				Milestone Decision Planned ☆				Element Test Planned ◇				System Level Test Planned ○				Planned Activity ◇			
	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
Initial Fielding	▲																			
Long Range Discrimination Radar Capability	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
GTI-08a (N/I) (Missile Defense System Ground Test)			◆																	
FTX-45				▲																
GTD-08a (N/I) (Missile Defense System Ground Test)				◆																
FTX-26 (OT) (SN, OT Target Only Flight Test)								△												
GTI-08b (N/I)								◇												
LRDR Space Domain Awareness Early Use Fielding								△												
GTD-08b (N/I)								◇												
LRDR Increment 6B.1 Fielding (LRDR added to Increment 6B.1 OCB)									△											
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)										◇										
Operational Acceptance (OA)												△								
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)												◇								
GTD-13 (N/I) (Missile Defense System Ground Test)													◇							
LRDR Increment 6C/7 Fielding (LRDR added to Increment 6C/7 OCB)														△						
GTI-14 Sprint 1 (N/I)																◇				
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)																	◇			
GTD-14 (N/I) (Missile Defense System Ground Test)																		◇		
LRDR Increment 10 Fielding (LRDR added to the Increment 10 OCB)																			△	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604873C / Long Range Discrimination Radar (LRDR)	Project (Number/Name) MD96 / Long Range Discrim Radar (LRDR)	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Initial Fielding	1	2022	1	2022
Long Range Discrimination Radar Capability	1	2022	4	2028
GTI-08a (N/I) (Missile Defense System Ground Test)	3	2022	3	2022
FTX-45	4	2022	4	2022
GTD-08a (N/I) (Missile Defense System Ground Test)	1	2023	1	2023
FTX-26 (OT) (SN, OT Target Only Flight Test)	4	2023	4	2023
GTI-08b (N/I)	4	2023	4	2023
LRDR Space Domain Awareness Early Use Fielding	1	2024	1	2024
GTD-08b (N/I)	2	2024	2	2024
LRDR Increment 6B.1 Fielding (LRDR added to Increment 6B.1 OCB)	4	2024	4	2024
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)	1	2025	1	2025
Operational Acceptance (OA)	2	2025	2	2025
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)	3	2025	3	2025
GTD-13 (N/I) (Missile Defense System Ground Test)	4	2025	4	2025
LRDR Increment 6C/7 Fielding (LRDR added to Increment 6C/7 OCB)	1	2026	1	2026
GTI-14 Sprint 1 (N/I)	4	2026	4	2026
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)	2	2027	2	2027
GTD-14 (N/I) ((Missile Defense System Ground Test)	4	2027	4	2027
LRDR Increment 10 Fielding (LRDR added to the Increment 10 OCB)	1	2028	1	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604873C / Long Range Discrimination Radar (LRDR)				Project (Number/Name) MD40 / Program Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program Wide Support	57.952	5.143	2.728	3.680	-	3.680	3.603	2.781	2.809	2.906	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Wide Support (PWS) is allocated on a pro-rata basis across multiple Agency program elements (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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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)

Title: Program Wide Support		FY 2022	FY 2023	FY 2024
Articles:		5.143	2.728	3.680
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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		-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604873C / <i>Long Range Discrimination Radar (LRDR)</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p><i>FY 2023 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2024 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase from FY 2023 to FY 2024 provides the PWS allocation 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.</p>			
Accomplishments/Planned Programs Subtotals		5.143	2.728
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604873C / Long Range Discrimination Radar (LRDR)						Project (Number/Name) MD40 / Program Wide Support			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Facilities and Maintenance SRM (MIPR)	MIPR	Various : Multi: AL, VA, Aust, Japan	24.395	0.000		0.000		0.000		-		0.000	0.000	24.395	0.000
Program Wide Support - Agency Operations Management	Various	Various : Multi: AL, CA, CO, VA	0.625	0.000		0.000		0.000		-		0.000	0.000	0.625	0.000
Program Wide Support - Agency Operations Sustainment and GPC	C/FFP	Various : Multi: AL, CA, CO, VA etc.	2.327	0.000		0.000		0.000		-		0.000	0.000	2.327	0.000
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various : Various	5.126	0.000		0.000		0.000		-		0.000	0.000	5.126	0.000
Subtotal			32.473	0.000		0.000		0.000		-		0.000	0.000	32.473	N/A
Remarks N/A															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations and Support Services	C/CPFF	CHENEGA : AL	25.479	5.143	Jan 2022	2.728	Jan 2023	3.680	Jan 2024	-		3.680	Continuing	Continuing	Continuing
Subtotal			25.479	5.143		2.728		3.680		-		3.680	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			57.952	5.143		2.728		3.680		-		3.680	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency							Date: March 2023			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0604873C / Long Range Discrimination Radar (LRDR)		Project (Number/Name) MD40 / Program Wide Support				
	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 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.										

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency																Date: March 2023							
Appropriation/Budget Activity 0400 / 4								R-1 Program Element (Number/Name) PE 0604873C / Long Range Discrimination Radar (LRDR)								Project (Number/Name) MD40 / Program Wide Support							
Significant Event Complete ▲				Milestone Decision Complete ★				Element Test Complete ◆				System Level Test Complete ●				Complete Activity ◆							
Significant Event Planned △				Milestone Decision Planned ☆				Element Test Planned ◇				System Level Test Planned ○				Planned Activity ◇							
								FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028			
MD40 Program-Wide Support								◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604873C / Long Range Discrimination Radar (LRDR)	Project (Number/Name) MD40 / Program Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)					PE 0604874C I Improved Homeland Defense Interceptors							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	1,029.647	863.364	1,833.357	2,130.838	-	2,130.838	2,110.409	1,444.842	1,239.966	1,015.682	Continuing	Continuing
MD80: Next Generation Interceptor Development (NGI)	927.520	833.409	1,766.786	2,056.063	-	2,056.063	2,034.457	1,386.460	1,189.654	970.633	Continuing	Continuing
MD40: Program Wide Support	102.127	29.955	66.571	74.775	-	74.775	75.952	58.382	50.312	45.049	Continuing	Continuing
Program MDAP/MAIS Code: 362												

Note

Increase from FY 2023 to FY 2024 provides Next Generation Interceptor development including two contractors' solutions through Critical Design Review (CDR) leveraging competitive pressures to deliver the initial operational capability as soon as possible; no later than FY 2028. The increase provides for engineering design development and component level parts testing necessary to achieve Preliminary Design Review (PDR) for two Next Generation Interceptor contractors, including completion of post-PDR sub-system and component survivability analyses and testing for natural and tactical space environments. The increase also provides for technical risk mitigation leading to CDR using the Integrated Digital Data Environment and Software Factory Framework to support analysis, baseline verification, Modeling and Simulation development, and system designs analyses. Increase in FY 2024 also provides for the escalation/inflation impacts due to ongoing global events, and the increase in adjusted labor skill mix required to maintain accelerated engineering milestones.

A. Mission Description and Budget Item Justification

The Improved Homeland Defense Interceptor Program Element will develop, test, and deliver a Next Generation Interceptor for Homeland Defense, meeting the U.S. Northern Command's (USNORTHCOM) Operational Needs for the Next Generation Interceptor. The Next Generation Interceptor acquisition covers the development, integration, and testing of an All Up Round (AUR) boost vehicle/multiple kill vehicle system capable of surviving both natural and hostile environments while countering the allocated threats. The budget requested continues to support the planned first Next Generation Interceptor delivery no later than FY 2028, which addresses the number one priority in the USNORTHCOM Operational Needs.

The Next Generation Interceptor will provide the Warfighter a cost-effective solution that is lethal across the specified threat space and upgradeable to address future and advancing threats. The Missile Defense Agency (MDA) issued a Request for Proposal in FY 2020 and competitively awarded two best value contracts on March 24, 2021 for a Next Generation Interceptor acquisition, which covers the development, integration, and testing of an AUR boost vehicle/multiple kill vehicle system. MDA plans to maintain the competitive environment through CDR in FY 2025 to reduce technical risk throughout the design development activities, secure competitive production pricing, and support the Department's ability to field a system capable of negating the expanded threat.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)		PE 0604874C I Improved Homeland Defense Interceptors			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	884.125	1,833.357	2,104.382	-	2,104.382
Current President's Budget	863.364	1,833.357	2,130.838	-	2,130.838
Total Adjustments	-20.761	0.000	26.456	-	26.456
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-20.761	0.000			
• Other Adjustment	0.000	0.000	26.456	-	26.456
Change Summary Explanation					
Increase in FY 2024 provides for the escalation/inflation impacts due to ongoing global events, and the increase in adjusted labor skill mix required to maintain accelerated engineering milestones.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors				Project (Number/Name) MD80 / Next Generation Interceptor Development (NGI)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD80: Next Generation Interceptor Development (NGI)	927.520	833.409	1,766.786	2,056.063	-	2,056.063	2,034.457	1,386.460	1,189.654	970.633	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from FY 2023 to FY 2024 provides Next Generation Interceptor development including two contractors' solutions through Critical Design Review (CDR) to deliver the Next Generation Interceptor in accordance with the two awarded contracts to support first operational delivery no later than FY 2028. The increase provides for engineering design development and component level parts testing necessary to achieve Preliminary Design Review (PDR) for two Next Generation Interceptor contractors, including completion of post-PDR sub-system and component Survivability analysis and testing for natural and tactical space environments. The increase also provides for technical risk mitigation leading to CDR, expansion of the Integrated Digital Data Environment and Software Factory Framework to support analysis, functional baseline verification, Modeling and Simulation development, and system designs analysis. Increase in FY 2024 also provides for the escalation/inflation impacts due to ongoing global events, and the increase in adjusted labor skill mix required to maintain accelerated engineering milestones.

A. Mission Description and Budget Item Justification

The Improved Homeland Defense Interceptor Program Element will develop, test, and deliver a Next Generation Interceptor for Homeland Defense, meeting the warfighter's number one priority for Homeland Defense. The U.S. Northern Command (USNORTHCOM) developed and maintains the operational needs for the Next Generation Interceptor. The Next Generation Interceptor acquisition covers the development, integration, and testing of an All Up Round (AUR) boost vehicle/ kill vehicle system capable of surviving both natural and hostile environments while countering the allocated threats. The budget request continues to support the planned first Next Generation Interceptor delivery no later than FY 2028, which addresses the number one priority in the USNORTHCOM Operational Needs.

The Next Generation Interceptor will provide the Warfighter a cost-effective solution that is lethal across the specified threat space and upgradeable to address future and advancing threats. The Missile Defense Agency (MDA) issued a Request for Proposal in FY 2020 and competitively awarded two best value contracts on March 24, 2021 for a Next Generation Interceptor acquisition, which covers the development, integration, and testing of an AUR boost vehicle/ kill vehicle system. MDA plans to maintain the competitive environment through CDR in FY 2025 to reduce technical risk throughout the design development activities, secure competitive production pricing, and support the Department's ability to field a system capable of negating the expanded threat.

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

	FY 2022	FY 2023	FY 2024
Title: Next Generation Interceptor Development (NGI)	813.171	1,745.981	2,033.969
Articles:	-	-	-
Description: The Improved Homeland Defense Interceptor Program Element will deliver a Next Generation Interceptor for Homeland Defense. The Next Generation Interceptor has multiple kill vehicles, improves survivability against natural and hostile			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>	Project (Number/Name) MD80 / <i>Next Generation Interceptor Development (NGI)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>environments and increases performance capability against 2030 threats compared to the currently fielded Ground Based Interceptors.</p> <p>Recurring efforts include:</p> <ul style="list-style-type: none"> - Continue the interceptor design and development to include completion of design trade studies and engineering analyses - Continue analysis of design against required threats - Continue activities to support achieving Knowledge Points and exit criteria - Continue Parts, Materials, and Processes Board Requirements approval for all parts - Continue to purchase and test parts including radiation/suitability testing to gain early confidence in Next Generation Interceptor design and development by building in reliability into design - Continue initiation of battlespace and threat containment requirement analysis - Continue development of the Development, Security, and Operations software factory for continuous deliver and integration of Next Generation Interceptor software updates <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> -Initiate flight-like sub-assembly testing -Increase part and sub-assembly qualification testing -Complete sub-assembly PDRs (Booster and Payload) -Complete Assembly and Check out of sub-systems (seekers, avionics, motors, etc.) for AUR PDR -Validate Software Factory to enable continuous delivery and integration of Next Generation Interceptor software development -Complete and Deliver analysis of Battle Space Requirements and threat containment/Engagement Management -Develop Test and Prototyping plan -Continue Critical Technology Element designs and risk mitigations -Complete Software Demonstrations -Purchase low risk long-lead AUR test articles. These long lead parts include Electrical Electronic and Electromechanical (EEE) parts, Inertial Measurement Unit (IMU) long lead items, propulsion materials, complex sensor and circuit card assembly long lead materials, metallic forgings, and unique avionics parts. These parts are only released after verification as part of PDR design baseline, allowing earliest flight tests in support of delivering the first operational NGI ahead of 2028. -Develop Next Generation Interceptor AUR transportation capability <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Complete AUR PDR and initiate post PDR activities 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>		Project (Number/Name) MD80 / <i>Next Generation Interceptor Development (NGI)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Continue flight-like sub-assembly testing - Continue part and sub-assembly qualification testing - Continue executing test and prototyping - Continue Critical Technology Element designs and risk mitigations in support of CDRs - Continue to purchase long-lead materials for the initial AUR test articles - Continue to develop Next Generation Interceptor AUR transportation and emplacement concept of operations including peculiar support equipment requirements - Mature Next Generation Interceptor to Ground-Based Midcourse Defense (GMD) Weapon System interface specifications and descriptions - Continue design validation and parts survivability testing - Initiate sub-assembly CDRs - Deliver Minimum Software Capability Release - Continue proof of manufacturability for major sub-systems - Update initial reliability and availability/supportability assessment 					
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase from FY 2023 to FY 2024 provides Next Generation Interceptor development including two contractors' solutions through CDR to deliver the Next Generation Interceptor in accordance with the two awarded contracts to support first operational delivery no later than FY 2028. The increase provides for engineering design development and component level parts testing for two Next Generation Interceptor contractors, including completion of sub-system and component Survivability analysis and testing for natural and tactical space environments. The increase also provides for technical risk mitigation leading to CDR using the Integrated Digital Data Environment and Software Factory Framework to support analysis, baseline verification, Modeling and Simulation development, and system designs analyses. Increase in FY 2024 also provides for the escalation/inflation impacts due to ongoing global events, and the increase in adjusted labor skill mix required to maintain accelerated engineering milestones.					
<i>Title:</i> Program Operations			20.238	20.805	22.094
<i>Articles:</i>			-	-	-
<i>Description:</i> Program Operations provides: <ul style="list-style-type: none"> -Technical and business management support, financial management, cost and schedule performance analysis, cost estimation and analysis, configuration management, and integration activities to ensure the program meets cost, schedule, and performance goals -GMD Next Generation Interceptor program compliance with internal and external direction, policies, and regulations to deliver critical capability via a consistent and disciplined process while maintaining a competitive environment to reduce technical risk throughout the design development activities and secure competitive production pricing 					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors				Project (Number/Name) MD80 / Next Generation Interceptor Development (NGI)				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2022	FY 2023	FY 2024
<div>-Mission Assurance and Manufacturing Engineering processes to include quality, configuration management, manufacturing, engineering, and safety in all phases of the system life cycle, throughout the supply chain, and at all levels of assembly emphasizing high yield rates which minimize test and rework costs</div> <div>-Technical and testing oversight, cyber security support, verification of hardware and software development, quality / safety / mission assurance, integrated logistics support, and government manpower and infrastructure to develop, test, and sustain the Next Generation Interceptor</div> <div>Specific and/or unique accomplishments to each FY are as follows:</div> <div>FY 2023 Plans: SEE ABOVE</div> <div>FY 2024 Plans: SEE ABOVE</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</div>												
Accomplishments/Planned Programs Subtotals										833.409	1,766.786	2,056.063
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• 0208866C: MD08: BMD Midcourse Defense O&M	156.623	185.564	174.789	-	174.789	178.467	161.429	132.557	206.311	Continuing	Continuing	
• 0208866C: MD08: GMD Procurement	0.000	11.300	0.000	-	0.000	30.971	36.243	34.833	18.978	Continuing	Continuing	
• 0603882C: Ballistic Missile Defense Midcourse Defense Segment	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing	
• 0604887C: Ballistic Missile Defense Midcourse Defense Segment Test	61.424	84.075	41.824	-	41.824	40.284	58.043	123.579	100.278	Continuing	Continuing	
Remarks												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors	Project (Number/Name) MD80 / Next Generation Interceptor Development (NGI)
<p>D. Acquisition Strategy</p> <p>Ground-Based Midcourse Defense's (GMD) overarching acquisition strategy included a competitive source selection to develop and test an All Up Round (AUR) interceptor to meet warfighter requirements and defeat the 2030 and beyond threat. MDA competitively awarded two best value contracts for the Next Generation Interceptor to Northrop Grumman (known as Next Generation Interceptor Gold Program) and Lockheed Martin (known as Next Generation Interceptor Black Program) in March 2021 and plans to maintain competition to develop the Next Generation Interceptor through Critical Design Review (CDR). The Next Generation Interceptor competitive acquisition strategy is intended to reduce technical risk, drive industry behavior(s) throughout early design development activities, secure competitive production pricing, and support the Department's ability to field a system capable of negating the expanded threat, as well as maximize the likelihood of delivering this critical capability at the earliest possible opportunity. MDA has established multiple knowledge points and flight tests to evaluate Next Generation Interceptor Components and GMD Element performance during development and support future production decisions.</p> <p>The Next Generation Interceptor efforts include, but are not limited to, systems engineering; hardware, software, and firmware development; manufacture, integration and checkout/test; and delivery of Next Generation Interceptors, culminating in four (4) intercept flight tests. Based on successful capability demonstration during flight tests, MDA will seek approval from the Under Secretary of Defense for Acquisition and Sustainment to proceed with procurement of operational AURs.</p> <p>An option is available on each contract to extend efforts through December 2028 for activities and hardware to support Missile Defense System Ground Testing, as well as activities and hardware to deliver up to ten (10) Next Generation Interceptor units in an AUR configuration to support the corresponding Missile Defense System flight test campaigns. Contemporaneous with CDR, the contractors will submit a proposal for an additional test article and 20 production units, broken into two (2) production lots.</p> <p>In addition to the two (2) Next Generation Interceptor Contracts, GMD's overarching Acquisition Strategy includes a GMD Weapon System (GWS) Contract and SITR Contract to execute the full scope of the GMD Element development efforts for Missile Defense System Increment 6C, 10, and 11. Each of the new contracts is structured to break out major efforts into separate Contract Line Item Numbers with individual incentives for management insight, accounting, and property accountability.</p> <p>Other Enabling Ground-Based Midcourse Defense Acquisition Strategies (budgeted for in PE 0603882C)</p> <p>GMD Increment 6C, 10, and 11 will be executed with the SITR and GWS contracts. The GWS Contract was competitively awarded to Northrop Grumman Systems Corporation in July 2022 to provide design, development, production, product level testing, sustainment planning, maintenance of the current Weapon System components including development to incorporate the Next Generation Interceptor into the GMD Weapon System. The GWS contractor is responsible for developing weapon system solutions, including fire control and communication systems improvements, required to update the legacy system to remain effective while Next Generation Interceptor is under development, as well as, preparing for the seamless introduction of Next Generation Interceptor and other future Missile Defense System capabilities. The GWS Contract will update the system interface for the addition of Next Generation Interceptors to the fleet, provide the Warfighter capability to operate the GMD Weapon System with a mixed fleet of Ground Based Interceptors and Next Generation Interceptors, and identify and develop solutions for message exchanges between the GMD Weapon System and in-flight kill vehicles. All of this must be accomplished while maintaining a robust cyber defense network capable of detecting and defending against current and future cybersecurity threats.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors	Project (Number/Name) MD80 / Next Generation Interceptor Development (NGI)

GMD also competitively awarded a single SITR Contract to provide, along with the Technical Direction Agent, a synergistic approach in executing the GMD Element-level engineering, integration, test, and readiness of the GMD Weapon System, which operates with the current Ground-Based Interceptor and is adding infrastructure for the integration and testing of Next Generation Interceptor. The SITR contractor is charged with being the Government's technical partner for day-to-day operation and sustainment of the GMD Weapon System alongside the U.S. Northern Command Warfighters. While the Government maintains overall systems integration responsibilities and authority, the SITR contractor will assume a supporting technical role responsible for ensuring overall GMD integration including physical and logical integration of the GMD Components to include Next Generation Interceptor, GMD Element, and MDA enterprise level integration, planning and execution of all necessary testing to verify and validate requirements compliance.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors				Project (Number/Name) MD80 / Next Generation Interceptor Development (NGI)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Next Generation Interceptor Development (NGI) - Next Generation Interceptor Development - Lockheed-Martin	C/CPIF	LOCKHEED MARTIN CORPORATION : Various	0.000	404.030	Nov 2021	995.876	Nov 2022	863.115	Nov 2023	-		863.115	Continuing	Continuing	Continuing
Next Generation Interceptor Development (NGI) - Next Generation Interceptor Development - Northrop-Grumman	C/CPIF	NORTHROP GRUMMAN : Various	0.000	402.806	Nov 2021	733.255	Nov 2022	1,164.619	Nov 2023	-		1,164.619	Continuing	Continuing	Continuing
Next Generation Interceptor Development (NGI) - Next Generation Interceptor Development - Various	C/CPIF	Lockheed-Martin, Northrop-Grumman : AL	891.075	0.000		0.000		0.000		-		0.000	0.000	891.075	0.000
Next Generation Interceptor Development (NGI) - Next Generation Interceptor Development Lab & System Support	C/CPIF	Lockheed-Martin, Northrop-Grumman : AL	7.731	0.000		0.000		0.000		-		0.000	0.000	7.731	0.000
Subtotal			898.806	806.836		1,729.131		2,027.734		-		2,027.734	Continuing	Continuing	N/A
Remarks															
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Next Generation Interceptor Development (NGI) - Next Generation Interceptor Development Lab & System Support - CCDC	MIPR	USA CCDC AVIATION AND MISSILE CENTE : AL	0.000	4.257	Mar 2022	15.736	Jan 2023	6.107	Jan 2024	-		6.107	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors						Project (Number/Name) MD80 / Next Generation Interceptor Development (NGI)			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Next Generation Interceptor Development (NGI) - Next Generation Interceptor Development Lab & System Support - Classified Performer	C/CPIF	Classified Performer : Various	0.000	0.950	Sep 2022	0.000		0.000		-		0.000	0.950	1.900	0.000
Next Generation Interceptor Development (NGI) - Next Generation Interceptor Development Lab & System Support - JACOBS TECHNOLOGY INC.	C/CPIF	JACOBS TECHNOLOGY INC. : Various	0.000	0.458	Jan 2022	1.114	Nov 2022	0.128	Nov 2023	-		0.128	Continuing	Continuing	Continuing
Next Generation Interceptor Development (NGI) - Next Generation Interceptor Development Lab & System Support - Various	MIPR	Various : Various	0.000	0.670	Apr 2022	0.000		0.000		-		0.000	0.670	1.340	0.000
Program Operations - Contract Support Services - PARSONS GOVERNMENT SERVICES INC.	C/CPIF	PARSONS GOVERNMENT SERVICES INC. : AL	0.000	10.117	Nov 2021	10.321	Nov 2022	11.146	Nov 2023	-		11.146	Continuing	Continuing	Continuing
Program Operations - Contract Support Services - Various	C/CPFF	Various : AL/AK/ CA/ CO/VA	18.172	0.000		0.000		0.000		-		0.000	0.000	18.172	0.000
Program Operations - Government Civilian Salaries	Allot	MDA : AL/VA	10.053	8.067	Oct 2021	8.386	Oct 2022	9.020	Oct 2023	-		9.020	Continuing	Continuing	Continuing
Program Operations - Government Travel	Allot	MDA : AL/VA	0.489	0.489	Oct 2021	0.503	Oct 2022	0.526	Oct 2023	-		0.526	Continuing	Continuing	Continuing
Subtotal			28.714	25.008		36.060		26.927		-		26.927	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors				Project (Number/Name) MD80 / Next Generation Interceptor Development (NGI)					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - Contract Support Services - Various	C/CPFF	Various : AL	0.000	1.565	Nov 2021	1.595	Nov 2022	1.402	Nov 2023	-		1.402	Continuing	Continuing	Continuing
Subtotal			0.000	1.565		1.595		1.402		-		1.402	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			927.520	833.409		1,766.786		2,056.063		-		2,056.063	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency																Date: March 2023							
Appropriation/Budget Activity 0400 / 4								R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors								Project (Number/Name) MD80 / Next Generation Interceptor Development (NGI)							
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028			
Next Generation Interceptor TD Phase								◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	
Next Generation Interceptor PD Phase														◇	◇	◇	◇	◇	◇	◇	◇		
Next Generation Interceptor IP Phase																			◇	◇	◇		
Next Generation Interceptor (Black) SRR								▲															
Next Generation Interceptor (Black) PDR													△										
Next Generation Interceptor (Black) CDR																△							
Next Generation Interceptor (Gold) SRR								▲															
Next Generation Interceptor (Gold) PDR														△									
Next Generation Interceptor (Gold) CDR																△							

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>	Project (Number/Name) MD80 / <i>Next Generation Interceptor Development (NGI)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Next Generation Interceptor TD Phase	1	2022	3	2024
Next Generation Interceptor PD Phase	3	2024	2	2027
Next Generation Interceptor IP Phase	2	2027	4	2028
Next Generation Interceptor (Black) SRR	1	2022	1	2022
Next Generation Interceptor (Black) PDR	4	2023	4	2023
Next Generation Interceptor (Black) CDR	3	2025	3	2025
Next Generation Interceptor (Gold) SRR	1	2022	1	2022
Next Generation Interceptor (Gold) PDR	2	2024	2	2024
Next Generation Interceptor (Gold) CDR	3	2025	3	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors				Project (Number/Name) MD40 / Program Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program Wide Support	102.127	29.955	66.571	74.775	-	74.775	75.952	58.382	50.312	45.049	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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	29.955	66.571	74.775
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / <i>Improved Homeland Defense Interceptors</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p><i>FY 2023 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2024 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase from FY 2023 to FY 2024 provides the PWS allocation 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.</p>			
Accomplishments/Planned Programs Subtotals		29.955	66.571
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors				Project (Number/Name) MD40 / Program Wide Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations and Support Services #2	C/CPFF	DISTRICT FLEET, LLC : Various	0.000	0.000		0.000		1.049	Nov 2023	-		1.049	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services #3	MIPR	Various : Various	0.000	0.000		0.000		0.014	Nov 2023	-		0.014	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services #4	C/CPFF	Cherokee Nation Red Wing : Various	0.000	0.000		0.000		1.337	Nov 2023	-		1.337	Continuing	Continuing	Continuing
Program Wide Support - Agency Facilities and Maintenance	MIPR	Army Garrison Resource : AL, VA	31.305	2.636	Dec 2021	12.295	Nov 2022	13.488	Nov 2023	-		13.488	Continuing	Continuing	Continuing
Program Wide Support - Agency Facilities and Maintenance SRM	MIPR	Army Corps of Engineers : Multi: AK, AL, CA, CO, HI, NY, VA	0.000	3.775	Dec 2021	2.675	Nov 2022	3.811	Nov 2023	-		3.811	Continuing	Continuing	Continuing
Program Wide Support - Agency Operation and Support Services	C/CPFF	Various : Various	48.830	17.004	Nov 2021	28.641	Nov 2022	0.000		-		0.000	0.000	94.475	0.000
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	Various Multi : AL, VA	2.456	0.000		22.960	Oct 2022	24.819	Oct 2023	-		24.819	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services #6	MIPR	Army Corps of Engineers : TBD	0.000	0.000		0.000		1.036	Nov 2023	-		1.036	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations, Sustainment and GPC	C/FFP	Facilities Resource Group : Multi: AK, AL, CA, HI, NY, VA	0.000	3.560	Dec 2021	0.000		2.652	Nov 2023	-		2.652	Continuing	Continuing	Continuing
Subtotal			82.591	26.975		66.571		48.206		-		48.206	Continuing	Continuing	N/A
Remarks N/A															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors				Project (Number/Name) MD40 / Program Wide Support					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations and Support Other Agency Services	C/CPFF	BCF SOLUTIONS, INC. : AL	19.536	2.980	Nov 2021	0.000		5.537	Nov 2023	-		5.537	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : AL	0.000	0.000		0.000		21.032	Nov 2023	-		21.032	Continuing	Continuing	Continuing
Subtotal			19.536	2.980		0.000		26.569		-		26.569	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			102.127	29.955		66.571		74.775		-		74.775	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023															
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors										Project (Number/Name) MD40 / Program Wide Support									
Significant Event Complete ▲					Milestone Decision Complete ★					Element Test Complete ◆					System Level Test Complete ●					Complete Activity ◆									
Significant Event Planned △					Milestone Decision Planned ☆					Element Test Planned ◇					System Level Test Planned ○					Planned Activity ◇									
										FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
MD40 Program-Wide Support										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇					

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604874C / Improved Homeland Defense Interceptors	Project (Number/Name) MD40 / Program Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604876C / <i>Ballistic Missile Defense Terminal Defense Segment Test</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	305.071	32.697	69.762	47.577	-	47.577	65.379	66.735	94.369	34.228	Continuing	Continuing
MT07: <i>THAAD Test</i>	290.565	30.174	67.229	45.886	-	45.886	63.026	64.039	90.540	32.710	Continuing	Continuing
MD40: <i>Program Wide Support</i>	14.506	2.523	2.533	1.691	-	1.691	2.353	2.696	3.829	1.518	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Decrease from FY 2023 to FY 2024 is in accordance with the current Integrated Master Test Plan (IMTP).

A. Mission Description and Budget Item Justification

Ballistic Missile Defense Terminal Defense Segment Test provides the Terminal High Altitude Area Defense (THAAD) program's participation in Missile Defense System Flight Tests and Ground Tests in accordance with the IMTP. THAAD Test coordinates with Operational Test Agencies, conducts pretest planning, coordination and analysis, conducts flight test operations, performs post-flight test reporting, and performs data distribution and storage.

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	32.697	69.762	43.602	-	43.602
Current President's Budget	32.697	69.762	47.577	-	47.577
Total Adjustments	0.000	0.000	3.975	-	3.975
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	3.975	-	3.975

Change Summary Explanation

The increase in FY 2024 is in accordance with the current IMTP.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604876C / Ballistic Missile Defense Terminal Defense Segment Test				Project (Number/Name) MT07 / THAAD Test			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MT07: THAAD Test	290.565	30.174	67.229	45.886	-	45.886	63.026	64.039	90.540	32.710	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note Decrease from FY 2023 to FY 2024 is in accordance with the current Integrated Master Test Plan (IMTP).												
A. Mission Description and Budget Item Justification Terminal High Altitude Area Defense (THAAD) Test conducts Missile Defense System Flight Tests and Ground Tests with other Missile Defense System elements (such as Army Navy / Transportable Radar Surveillance and Control (AN/TPY-2), Missile Defense System Command, Control, Battle Management, and Communication (C2BMC), Phased Array Tracking Intercept of Target (PATRIOT), and Aegis) in accordance with the IMTP. THAAD Test coordinates with Operational Test Agencies, conducts all pre and post flight test, ground test, cyber security enhancements, and wargames and exercises requirements.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024	
Title: Flight Test Execution Articles: Description: Performs all requirements to support flight test execution such as mission planning, pre-flight integration testing, conduct of readiness reviews, test asset transportation, flight test execution and data collection, post flight test reporting and data distribution in accordance with the IMTP. Specific and/or unique planned accomplishments to each FY are as follows: FY 2023 Plans: -SEE ABOVE. FY 2024 Plans: -SEE ABOVE. FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 is in accordance with the current IMTP.									15.821	54.024	26.869	
									-	-	-	
Title: Ground Test Execution Articles: Description: Ground Test Execution includes:									6.910	7.493	8.214	
									-	-	-	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604876C / Ballistic Missile Defense Terminal Defense Segment Test	Project (Number/Name) MT07 / THAAD Test		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
<div>- THAAD participation in Missile Defense System Ground Test operational scenario events to validate THAAD's ability to conduct coordinated engagements with Aegis and PATRIOT operating with C2BMC and AN/TPY-2.</div> <div>- Pre-mission planning, pre- and post-mission analyses, reporting, and execution to support Missile Defense System Ground and Flight Test campaigns.</div> <div>- Ground Test of element hardware and software prior to hardware-in-the-loop testing and enable a continuous capacity based Sprint vs. lengthy individual Ground Test (GT) campaign environment, enabling a more efficient process for ground testing and reducing test cycle time.</div> <div>- Continued performance assessments to evaluate system performance and interoperability within the Missile Defense System.</div> <div>- Participation in Wargames and Exercises that support the Combatant Commands with modeling and simulations and subject matter expertise during exercise events. Continue to assist in developing/refining Tactics, Techniques, and Procedures and Pre-Planned Responses to incorporate in future events. Demonstrate THAAD capability to the warfighter community in the Integrated Air and Missile Defense environment.</div> <div>Specific and/or unique planned accomplishments to each FY are as follows:</div> <div>FY 2023 Plans:</div> <div>- SEE ABOVE.</div> <div>FY 2024 Plans:</div> <div>-SEE ABOVE.</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>Increase from FY 2023 to FY 2024 is in accordance with the current IMTP and provides the alignment of the Wargames and Exercises accomplishment to the Ground Test Execution accomplishment beginning in FY 2024.</div>				
<div>Title: Resources</div> <div>Articles:</div> <div>Description: Resources includes:</div> <div>- On-site range support for THAAD maintenance, repair, and pre-mission analysis to ensure THAAD test asset readiness.</div> <div>- Data management, facilities operations, and post-test reporting in support of Missile Defense System tests to ensure data collection and readiness for mission execution.</div> <div>- Performance Assessments to evaluate system performance and interoperability within the Missile Defense System.</div> <div>Specific and/or unique planned accomplishments to each FY are as follows:</div>		2.822 -	1.619 -	7.749 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604876C / Ballistic Missile Defense Terminal Defense Segment Test	Project (Number/Name) MT07 / THAAD Test		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
FY 2023 Plans: - SEE ABOVE.				
FY 2024 Plans: - SEE ABOVE.				
FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 is in accordance with the current IMTP.				
Title: Wargames and Exercises		0.445	0.453	0.000
Articles:		-	-	-
Description: Wargames and Exercises support the Combatant Commands with model and simulations and subject matter expertise during exercise events. Continue to assist in developing/refining Tactics, Techniques, and Procedures and Pre-Planned Responses to incorporate in future events. Demonstrate THAAD capability to the warfighter community in the Integrated Air and Missile Defense environment.				
Specific and/or unique planned accomplishments to each FY are as follows:				
FY 2023 Plans: - SEE ABOVE.				
FY 2024 Plans: N/A.				
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects the realignment of the Wargames and Exercises activities to the Ground Test Execution accomplishment beginning in FY 2024.				
Title: Test Program Operations		4.176	3.640	3.054
Articles:		-	-	-
Description: Program Operations provides strategic planning, program integration, acquisition, engineering, financial management, internal reviews and audits, and program assessments for THAAD Test Activities.				
Specific and/or unique planned accomplishments to each FY are as follows:				
FY 2023 Plans:				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0604876C / <i>Ballistic Missile Defense Terminal Defense Segment Test</i>				Project (Number/Name) MT07 / <i>THAAD Test</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2022	FY 2023	FY 2024
- SEE ABOVE.												
FY 2024 Plans: - SEE ABOVE.												
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 is in accordance with the current IMTP.												
Accomplishments/Planned Programs Subtotals										30.174	67.229	45.886
C. Other Program Funding Summary (\$ in Millions)												
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>	
• 0208866C:MD07: <i>THAAD O&M</i>	85.557	86.945	89.297	-	89.297	91.789	93.995	96.024	97.945	Continuing	Continuing	
• 0208866C:MD07: <i>THAAD Procurement</i>	380.722	239.994	216.782	-	216.782	447.080	475.739	643.513	656.384	Continuing	Continuing	
• 0603881C: <i>Ballistic Missile</i>	209.004	195.216	220.311	-	220.311	239.705	334.977	384.992	292.629	Continuing	Continuing	
<i>Defense Terminal Defense Segment</i>												
• 0603914C: <i>Ballistic</i>	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing	
<i>Missile Defense Test</i>												
Remarks												
D. Acquisition Strategy												
THAAD awards Task Orders on the Advanced Capability Development Indefinite Delivery Indefinite Quantity (IDIQ) contract for the continuation of THAAD development and test as described and approved in the Missile Defense Agency IMTP. The discrete task orders allow management and tracking of IMTP-related work.												
THAAD also utilizes other contracts with industry as well as agreements with other U.S. Government organizations in order to develop, test and upgrade the THAAD Weapon system.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)						Project (Number/Name)			
0400 / 4						PE 0604876C / Ballistic Missile Defense Terminal Defense Segment Test						MT07 / THAAD Test			
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Flight Test Execution - Execution, Support and Planning	Various	MDA / US Army Combat Capabilities Development Command (CCDC) / KLC / RTS : AL / CO / AK / HI / Wake Island / Kwajalein	121.552	0.000		0.000		0.000		-		0.000	0.000	121.552	121.552
Flight Test Execution - Execution, Support and Planning (32 AAMDC)	MIPR	DOD - USA - 32ND ARMY AIR AND MISSILE DEFENSE COMMAND (32 AAMDC) : TX	0.000	0.000		1.958	Nov 2022	0.437	Nov 2023	-		0.437	Continuing	Continuing	Continuing
Flight Test Execution - Execution, Support and Planning (CCDC)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	0.000	7.525	Nov 2021	0.055	Nov 2022	6.189	Nov 2023	-		6.189	Continuing	Continuing	Continuing
Flight Test Execution - Execution, Support and Planning (PMRF)	MIPR	DOD - USN - PACIFIC MISSILE RANGE FACILITY BARKING SANDS (PMRF) : HI	0.000	0.000		10.028	Nov 2022	0.000		-		0.000	0.000	10.028	10.028
Flight Test Execution - Execution, Support and Planning (RTC)	MIPR	DOD - USA - REDSTONE TEST CENTER (RTC) : AL	0.000	0.877	Nov 2021	2.500	Nov 2022	0.000		-		0.000	0.000	3.377	3.377
Flight Test Execution - Execution, Support and Planning (SMDC)	MIPR	DOD - USA - SPACE AND MISSILE DEFENSE COMMAND (SMDC) : AL	0.000	0.660	Nov 2021	2.678	Nov 2022	0.513	Nov 2023	-		0.513	Continuing	Continuing	Continuing
Flight Test Execution - Execution, Support and Planning (Various)	Various	Various : Various	0.000	1.642	Nov 2021	14.543	Nov 2022	2.542	Nov 2023	-		2.542	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604876C / Ballistic Missile Defense Te rminal Defense Segment Test				Project (Number/Name) MT07 / THAAD Test					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Flight Test Execution - Execution, Support and Planning (WSMR)	MIPR	DOD - USA - WHITE SANDS MISSILE RANGE (WSMR) : NM	0.000	0.000		0.297	Nov 2022	3.856	Nov 2023	-		3.856	Continuing	Continuing	Continuing
Flight Test Execution - Planning, Analysis, and Execution	SS/IDIQ	LOCKHEED MARTIN CORPORATION : AL	79.678	4.996	Nov 2021	8.420	Nov 2022	13.332	Nov 2023	-		13.332	Continuing	Continuing	Continuing
Flight Test Execution - Planning, Analysis, and Execution (DMVA)	SS/IDIQ	ALASKA DEPARTMENT OF MILITARY AND VETERANS AFFAIRS (DMVA) : AK	0.000	0.121	Nov 2021	13.545	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Ground Test Execution - All Prior Years	Various	Various : Various	32.798	0.000		0.000		0.000		-		0.000	0.000	32.798	32.798
Ground Test Execution - Ground Test Support	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	0.000	6.910	Nov 2021	7.493	Nov 2022	7.751	Nov 2023	-		7.751	Continuing	Continuing	Continuing
Ground Test Execution - Wargames and Exercises	MIPR	DOD - USA - SPACE AND MISSILE DEFENSE COMMAND (SMDC) : AL	0.000	0.000		0.000		0.463	Nov 2023	-		0.463	Continuing	Continuing	Continuing
Resources - Test and Range Infrastructure (CCDC)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	0.000	0.000		0.994	Nov 2022	3.252	Nov 2023	-		3.252	Continuing	Continuing	Continuing
Resources - Test and Range Infrastructure (LM)	MIPR	LOCKHEED MARTIN CORPORATION : AL	0.000	2.682	Nov 2021	0.477	Nov 2022	2.467	Nov 2023	-		2.467	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604876C / Ballistic Missile Defense Terminal Defense Segment Test					Project (Number/Name) MT07 / THAAD Test				
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Resources - Test and Range Infrastructure (RTC)	MIPR	DOD - USA - REDSTONE TEST CENTER (RTC) : AL	0.000	0.000		0.000		1.300	Nov 2023	-		1.300	Continuing	Continuing	Continuing
Resources - Test and Range Infrastructure (Various))	Various	Various : Various	36.831	0.140	Nov 2021	0.148	Nov 2022	0.730	Nov 2023	-		0.730	Continuing	Continuing	Continuing
Wargames and Exercises - Wargames and Exercises	MIPR	DOD - USA - SPACE AND MISSILE DEFENSE COMMAND (SMDC) : AL	2.036	0.445	Nov 2021	0.453	Nov 2022	0.000		-		0.000	0.000	2.934	2.934
Test Program Operations - All Prior Years	Various	Various : Various	17.670	0.000		0.000		0.000		-		0.000	0.000	17.670	17.670
Test Program Operations - Contractor Support Services	C/CPFF	MP SOLUTIONS, LLC : VA	0.000	3.440	Nov 2021	3.440	Nov 2022	2.852	Nov 2023	-		2.852	Continuing	Continuing	Continuing
Test Program Operations - Test Program Operations (Various)	Allot	Various : Various	0.000	0.736	Oct 2021	0.200	Nov 2022	0.202	Nov 2023	-		0.202	Continuing	Continuing	Continuing
Subtotal			290.565	30.174		67.229		45.886		-		45.886	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			290.565	30.174		67.229		45.886		-		45.886	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																											
Appropriation/Budget Activity 0400 / 4														R-1 Program Element (Number/Name) PE 0604876C / Ballistic Missile Defense Terminal Defense Segment Test														Project (Number/Name) MT07 / THAAD Test													
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 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
TH CTV-01a (LTPO, DT Interceptor Only Flight Test)														◆																											
FTT-21 (TH, DT Intercept Flight Test)														▲																											
GTI-08a (N/I) (Missile Defense System Ground Test)																		◆																							
GTD-08a (N/I) (Missile Defense System Ground Test)																		◆																							
FTT-25 (TH, DT/OT Intercept Flight Test)																						△																			
GTI-08b (N/I)																						◇																			
GTD-08b (N/I)																						◇																			
GTI-ASI (24) (Missile Defense System Ground Test)																						◇																			
FTX-28 E1 (TH, DT/OT Tracking Exercise Flight Test)																						△																			
FTX-28 E2 (TH, DT/OT Tracking Exercise Flight Test)																						△																			
FTX-28 E3 (TH, DT/OT Tracking Exercise Flight Test)																						△																			
GTI-ISR (23) (Missile Defense System Ground Test)																						◇																			
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)																										◇															
GTI-ISR (25) (Missile Defense System Ground Test)																										◇															
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)																										◇															
FTT-26 (MRBM T1)																										△															
GTD-13 (N/I) (Missile Defense System Ground Test)																										◇															
GTI-12 (E/C)																														◇											
GTD-12 (E/C) (Missile Defense System Ground Test)																														◇											
TH CTV-03 (TH, DT Interceptor Only Flight Test)																																		△							
GTI-ASI (26) (Missile Defense System Ground Test)																																		◇							
GTI-14 Sprint 1 (N/I)																																		◇							
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)																																		◇							
GTI-15 Sprint 1 (E/C)																																						◇			

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023														
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0604876C / Ballistic Missile Defense Terminal Defense Segment Test										Project (Number/Name) MT07 / THAAD Test									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
FTT-22 (TH, DT/OT Intercept Flight Test)																				△									
GTD-14 (N/I) ((Missile Defense System Ground Test)																					◇								
GTI-ISR (27) (Missile Defense System Ground Test)																					◇								
GTI-15 Sprint 2 (E/C)																						◇							
GTD-15 (E/C)																							◇						
GTI-ASI (28)																								◇					
GTI-16 Sprint 1 (N/I)																								◇					

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604876C / <i>Ballistic Missile Defense Terminal Defense Segment Test</i>	Project (Number/Name) MT07 / <i>THAAD Test</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
TH CTV-01a (LTPO, DT Interceptor Only Flight Test)	2	2022	2	2022
FTT-21 (TH, DT Intercept Flight Test)	2	2022	2	2022
GTI-08a (N/I) (Missile Defense System Ground Test)	3	2022	3	2022
GTD-08a (N/I) (Missile Defense System Ground Test)	1	2023	1	2023
FTT-25 (TH, DT/OT Intercept Flight Test)	3	2023	3	2023
GTI-08b (N/I)	4	2023	4	2023
GTD-08b (N/I)	2	2024	2	2024
GTI-ASI (24) (Missile Defense System Ground Test)	2	2024	2	2024
FTX-28 E1 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024
FTX-28 E2 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024
FTX-28 E3 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024
GTI-ISR (23) (Missile Defense System Ground Test)	3	2024	3	2024
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)	1	2025	1	2025
GTI-ISR (25) (Missile Defense System Ground Test)	2	2025	2	2025
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)	3	2025	3	2025
FTT-26 (MRBM T1)	3	2025	3	2025
GTD-13 (N/I) (Missile Defense System Ground Test)	4	2025	4	2025
GTI-12 (E/C)	1	2026	1	2026
GTD-12 (E/C) (Missile Defense System Ground Test)	2	2026	2	2026
TH CTV-03 (TH, DT Interceptor Only Flight Test)	3	2026	3	2026
GTI-ASI (26) (Missile Defense System Ground Test)	3	2026	3	2026
GTI-14 Sprint 1 (N/I)	4	2026	4	2026

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0604876C / Ballistic Missile Defense Terminal Defense Segment Test		Project (Number/Name) MT07 / THAAD Test
		Start		End
Events		Quarter	Year	Quarter Year
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)		2	2027	2 2027
GTI-15 Sprint 1 (E/C)		3	2027	3 2027
FTT-22 (TH, DT/OT Intercept Flight Test)		3	2027	3 2027
GTD-14 (N/I) ((Missile Defense System Ground Test)		4	2027	4 2027
GTI-ISR (27) (Missile Defense System Ground Test)		4	2027	4 2027
GTI-15 Sprint 2 (E/C)		1	2028	1 2028
GTD-15 (E/C)		2	2028	2 2028
GTI-ASI (28)		4	2028	4 2028
GTI-16 Sprint 1 (N/I)		4	2028	4 2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604876C / Ballistic Missile Defense Terminal Defense Segment Test				Project (Number/Name) MD40 / Program Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program Wide Support	14.506	2.523	2.533	1.691	-	1.691	2.353	2.696	3.829	1.518	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Wide Support (PWS) is allocated on a pro-rata basis across multiple Agency Program Elements (PE) 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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	2.523	2.533	1.691
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604876C / <i>Ballistic Missile Defense Terminal Defense Segment Test</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p><i>FY 2023 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2024 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Decrease from FY 2023 to FY 2024 reflects the PWS allocation on a pro-rata basis across multiple Agency PE's each fiscal year based on the total Agency budget, and therefore fluctuates per PE by fiscal year.</p>			
Accomplishments/Planned Programs Subtotals		2.523	2.533
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604876C / Ballistic Missile Defense Terminal Defense Segment Test				Project (Number/Name) MD40 / Program Wide Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations Management Support	Various	Various : Various	0.668	0.026	Jul 2022	0.000		0.000		-		0.000	0.694	1.388	0.000
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	Various : VA	4.174	0.000		0.000		0.000		-		0.000	0.000	4.174	0.000
Program Wide Support - Agency Operations and Support Services	C/CPFF	YORKTOWN SYSTEMS GROUP, INC. : Multi: AL, VA	9.304	2.497	Nov 2021	0.616	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services, includes FFRDC/UARC	MIPR	DOD - DEFENSE FINANCE AND ACCOUNTING SERVICES (DFAS) : IN	0.360	0.000		1.917	Dec 2022	1.691	Dec 2023	-		1.691	Continuing	Continuing	Continuing
Subtotal			14.506	2.523		2.533		1.691		-		1.691	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			14.506	2.523		2.533		1.691		-		1.691	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023																						
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0604876C / Ballistic Missile Defense Terminal Defense Segment Test										Project (Number/Name) MD40 / Program Wide Support																	
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 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
MD40 Program-Wide Support										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604876C / Ballistic Missile Defense Terminal Defense Segment Test	Project (Number/Name) MD40 / Program Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604878C / <i>Aegis BMD Test</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	757.283	111.206	175.619	193.484	-	193.484	135.473	183.024	203.676	135.080	Continuing	Continuing
MT09: <i>AEGIS BMD Test</i>	725.846	106.147	168.982	186.236	-	186.236	130.522	173.947	195.356	129.089	Continuing	Continuing
MD40: <i>Program Wide Support</i>	31.437	5.059	6.637	7.248	-	7.248	4.951	9.077	8.320	5.991	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Increase from FY 2023 to FY 2024 provides Sea-Based Weapon Systems Flight Test events in accordance with the current Integrated Master Test Plan (IMTP) to include \$42 million in FY 2024 for Pacific Deterrence Initiative (PDI) testing activities.

A. Mission Description and Budget Item Justification

The Sea-Based Weapon Systems mission is to deliver an enduring, operationally effective and supportable BMD capability to defend the nation, deployed forces, friends and allies, and to increase this capability by delivering evolutionary improvements as part of Missile Defense System upgrades. The Sea-Based Weapon Systems element of the Missile Defense System capitalizes upon and evolves from the existing U.S. Navy AWS and SM infrastructures. Sea-Based Weapon Systems provides a forward-deployable, mobile capability to detect and track Ballistic Missiles of all ranges, and the ability to destroy Short-Range Ballistic Missiles, Medium-Range Ballistic Missiles, and Intermediate-Range Ballistic Missiles in the midcourse phase of flight, and shorter range missiles in the terminal phase of flight. Sea-Based Weapon Systems also provides a Long Range Surveillance and Track capability to the Missile Defense System. Upgrades to both the Aegis Ballistic Missile Defense (BMD) Weapon System and the SM-3 configuration enable Sea-Based Weapon Systems to provide effective, supportable defensive capability against longer range, threats and an enduring Aegis Ashore defensive capability.

This Program Element works with all U.S. Armed Services that participate in the Missile Defense System level Operational Test Agency Team. With the support of the Director of Operational Test and Evaluation (DOT&E), MDA has developed a test program to improve confidence in missile defense capabilities under development and ensure the capabilities transferred to the warfighter are operationally effective, suitable, and survivable. As part of the MDA's rigorous test program, System Pre-Flight predictions provide confidence in test execution by predicting element performance and exercising element interfaces. System Post-Flight Reconstruction replicates the Missile Defense System configuration, actual environmental conditions, and target dynamics observed in flight to anchor Modeling and Simulation (M&S) results. The IMTP is event-oriented and extends until the collection of all identified data is completed ensuring adequate test investments.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
0400: Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)		PE 0604878C / Aegis BMD Test			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	111.206	182.776	173.492	-	173.492
Current President's Budget	111.206	175.619	193.484	-	193.484
Total Adjustments	0.000	-7.157	19.992	-	19.992
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-7.157			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	19.992	-	19.992
Change Summary Explanation					
FY 2023 Congressional Directed Reductions Total \$7.157 million:					
Project: MT09 AEGIS BMD Test					
- Excess growth (\$7.157 million)					
The increase in FY 2024 reflects Sea-Based Weapon Systems Flight Test events in accordance with the current Integrated Master Test Plan (IMTP).					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604878C / Aegis BMD Test				Project (Number/Name) MT09 / AEGIS BMD Test			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MT09: AEGIS BMD Test	725.846	106.147	168.982	186.236	-	186.236	130.522	173.947	195.356	129.089	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from FY 2023 to FY 2024 is in accordance with the current Integrated Master Test Plan (IMTP).

A. Mission Description and Budget Item Justification

The FY 2022 Sea-Based Weapon Systems Test Program concentrates on critical Integrated Master Test Plan flight tests that support the U.S. Navy and European Phased Adaptive Approach, Weapon System Certification, and Missile Production Decision requirements. Sea-Based Weapon Systems will concentrate on Aegis Baseline (BL) 9.C2 (BMD 5.x) enhancements and Standard Missile (SM)-3 Block IIA operational testing.

The FY 2023 Sea-Based Weapon Systems Test Program concentrates on critical IMTP flight tests that support the U.S. Navy, Weapon System Certification, and Missile Production Decision requirements. Sea-Based Weapon Systems will concentrate on Aegis BL 9.C2 (BMD 5.x) enhancements and SM-3 Block IIA operational testing.

The FY 2024 Sea-Based Weapon Systems Test Program concentrates on critical IMTP flight tests that support the U.S. Navy, Weapon System Certification, and Missile Production Decision requirements. Sea-Based Weapon Systems will concentrate on Aegis BL 9.C2 (BMD 5.x) enhancements, SM-3 Block IIA operational testing, and conduct observations of Aegis BL 10 (BMD 6.x) and Regional Glide Phase Weapon System in order to support development of those programs. Additionally, FY 2024 efforts will support the appropriate flight tests to validate Missile Defense System capabilities on Guam.

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

	FY 2022	FY 2023	FY 2024
Title: Aegis BMD Flight Test Execution	46.610	114.168	140.101
Articles:	-	-	-
<p>Description: Sea-Based Weapon Systems Flight Test Program performs comprehensive testing of Aegis BMD components and their interoperability with the Missile Defense System using accredited modeling and simulation (M&S) that provides the evidence required for the Missile Defense Agency (MDA) and Combatant Commanders to transition the capability to the Operational Capability Baseline. All flight testing is reflected in the R-4 schedule and the IMTP.</p> <p>Recurring Accomplishments include:</p> <ul style="list-style-type: none"> -Prepare for and conduct Missile Defense System Flight Test events as reflected in the IMTP and the R-4 schedule. -Collect Aegis BMD data for M&S anchoring used in comprehensive flight testing. -Conduct Aegis BMD specific analysis during pre- and post-mission analysis phases to confirm pre-mission predictions of mission success and validate post-test results. -Conduct test milestone reviews to ensure readiness for test execution and accomplishment of test objectives. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0604878C / Aegis BMD Test	Project (Number/Name) MT09 / AEGIS BMD Test		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
Specific and/or unique accomplishments to each FY are as follows:					
FY 2023 Plans: -SEE ABOVE.					
FY 2024 Plans: -SEE ABOVE.					
FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 reflects BMD Flight Test events in accordance with the current Integrated Master Test Plan (IMTP).					
Title: Aegis BMD Ground Test Execution			28.213	23.234	18.998
Articles:			-	-	-
Description: Sea-Based Weapon Systems Ground Test (GT) Program performs comprehensive testing of Aegis BMD Components and their interoperability with the Missile Defense System using accredited M&S that provides the evidence required for the MDA and Combatant Commanders to transition the capability to the Operational Capability Baseline. More specifically, ground testing is used to collect data for Aegis BMD characterization and assessment, flight test risk reduction, and exploration of scenarios where flight testing is either impracticable or impossible. Recurring Accomplishments include: -Participate in BMD System GT to include pre-mission analysis, mission execution, and post-mission analysis. -Conduct planning to ensure Aegis Ashore Missile Defense Test Complex, Missile Defense System Test Bed San Diego, and Lockheed Martin Rotary and Mission Systems Computer Program Test Site capabilities support Aegis BMD testing, exercises, flight tests, and demonstration requirements. This includes upgrades to the ground testing labs to ensure compliance with operational and test baselines. -Continue testing of U.S. Navy Command, Control, Communications, Computers Intelligence Systems and Aegis BMD baselines to ensure Missile Defense System interoperability. -Continue participating in System Level Ground Testing as an element of the layered Missile Defense System to collect data for Aegis BMD characterization and assessment. -Continue operation support of Hardware in the loop (HWIL) M&S for Element ground testing. -Continue Aegis BMD HWIL lab participation align to the IMTP GT schedule and implementation of Future Ground Test Concept of Operations pathfinders.					
Specific and/or unique accomplishments to each FY are as follows:					
FY 2023 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604878C / Aegis BMD Test	Project (Number/Name) MT09 / AEGIS BMD Test		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
-SEE ABOVE. FY 2024 Plans: -SEE ABOVE. FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects completion in FY 2023 of ground test hardware upgrades at BMD Test Bed San Diego.				
Title: Aegis BMD Test Resources Articles: Description: This effort provides resources to conduct ground and flight testing to improve confidence in missile defense capabilities under development and ensure the capabilities transferred to the warfighter are operationally effective, suitable, and survivable. Recurring Accomplishments include: - Provide Core Test and Evaluation support for Sea-Based Weapon Systems test and evaluation missions and laboratories, field activities, range support activities, analysis activities, and shipboard and land-based test site test teams. - Provide Test & Evaluation infrastructure support for Sea-Based Weapon Systems Test Missions as reflected in the IMTP to collect truth data for post-event analysis. - Exercise tactical communications during testing to ensure interoperability with the Missile Defense System and Combatant Command systems. - Continue core test planning for Sea-Based Weapon Systems test missions to include assessment of target requirements, and preparation of the range to ensure all missions are executable and apply to the technical program objectives. - Develop and execute risk-reduction activities to minimize or mitigate shipboard and missile test and programs risks. - Develop and execute data collection plans and supporting instrumentation requirements. Specific and/or unique accomplishments to each FY are as follows: FY 2023 Plans: -SEE ABOVE. FY 2024 Plans: -SEE ABOVE. FY 2023 to FY 2024 Increase/Decrease Statement: N/A		18.308 -	19.539 -	20.632 -
Title: Engineering & Analysis Articles:		5.927 -	5.695 -	0.000 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0604878C / <i>Aegis BMD Test</i>		Project (Number/Name) MT09 / <i>AEGIS BMD Test</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
<p>Description: Engineering & Analysis Description: The Engineering and Analysis effort provides essential MDS ground and flight test event planning, execution, and evaluation activities for each test event. Recurring Accomplishments:</p> <ul style="list-style-type: none"> - 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 MDS performance and anchor M&S. - Coordinate with Operational Test Agency (OTA) to address, coordinate, and disposition test issues to achieve closure through recommended action plans. - Deliver HWIL M&S integration test cases. - Conduct HWIL M&S integration benchmarking, and integrate the MDS HWIL M&S framework with MDA and non-MDA Elements into the test event MDS architecture. - Integrate, test, and deliver end-to-end MDS simulations supporting ground test missions. - 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. - Document MDS test observations for system-level test anomalies and coordinate the resulting MDS Discrepancy Reports within the Failure Reporting, Analysis, and Corrective Action System - Provide the Quick Look Brief, Mission Data Review (MDR), and Executive MDR. - Provide long-range MDS IMTP planning and integration strategies related to overarching MDS analysis product integration. - Upgrade test analysis tools to enhance analysis capability and efficiency. - Populate the Modular Analysis and Reporting Suite (MARS) database with data from the most recently completed tests to support as-built analysis and capability assessments. - Provide engineering analysis process software, to include System Coordination and Observation Reporting Environment (SCORE), Software Change Analysis Review Environment (SCARE), File Manager (FileMan), and ManPower Loading (MPL). <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: -SEE ABOVE.</p> <p>FY 2024 Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604878C / <i>Aegis BMD Test</i>	Project (Number/Name) MT09 / <i>AEGIS BMD Test</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
Decrease from FY 2023 to FY 2024 reflects consolidation of Engineering Analysis activities in the Enabling PE (0603890C) Test budget project (MT23).			
Title: Test Program Operations <div style="text-align: right;">Articles:</div> <div> <div>Description: This activity funds the Government and contractor workforce that manage the overall Sea-Based Weapon Systems test program and enables the program to develop, build, and test standard missiles and the associated Aegis Weapon Systems. This project includes all operations support for the Aegis program office related to Engineering and Testing. Specific and/or unique accomplishments to each FY are as follows:</div> <div> FY 2023 Plans: -SEE ABOVE. FY 2024 Plans: -SEE ABOVE. FY 2023 to FY 2024 Increase/Decrease Statement: N/A </div> </div>	7.089 -	6.346 -	6.505 -
Accomplishments/Planned Programs Subtotals	106.147	168.982	186.236

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603892C: <i>AEGIS BMD</i>	628.014	595.572	693.727	-	693.727	639.678	706.974	699.611	733.909	Continuing	Continuing
• 0604181C: <i>Hypersonic Defense</i>	281.886	517.977	208.997	-	208.997	218.939	294.326	366.951	644.996	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Sea-Based Weapon Systems test acquisition strategy allows for the execution of a comprehensive Missile Defense System test program that supports fielding capabilities to the Warfighter. The Sea-Based Weapon Systems Test Program utilizes full and open competition to develop, acquire and deliver test planning artifacts, range safety plans, as well as support for the management and conduct of Sea-Based Weapon Systems test events in accordance with the MDA Flight and Ground Test IMTP. This includes contract actions to industry, agreements with Department of Defense organizations, Federally Funded Research and Development Centers (FFRDCs) and University Affiliated Research Centers to plan and execute Sea-Based Weapon Systems Flight and Ground Test Program.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604878C / Aegis BMD Test				Project (Number/Name) MT09 / AEGIS BMD Test					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - Flight Test Execution - DOT MARAD	MIPR	DOT : MARAD	13.193	0.000		6.100	Jan 2023	7.100	Jan 2024	-		7.100	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09 - CPF	MIPR	COMPACTFLT : HI	6.333	0.000		2.560	Jan 2023	2.960	Jan 2024	-		2.960	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09 -JHU/APL	SS/CPFF	JHU/APL : Columbia MD	29.999	4.967	Feb 2022	10.000	Feb 2023	23.488	Dec 2023	-		23.488	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09- Corona	MIPR	NSWC Corona : CA	21.781	2.154	Dec 2021	8.520	Jan 2023	21.270	Jan 2024	-		21.270	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-DMEA	MIPR	DMEA : McClellan, CA	1.819	0.000		1.040	Dec 2022	1.040	Dec 2023	-		1.040	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-L3 Communications	C/CPFF	L3 Communications : Waco, TX	7.989	0.000		3.860	Dec 2022	2.860	Dec 2023	-		2.860	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-NAWC/AD	MIPR	NAWC/AD-PHX Air : Pax River, MD	10.123	0.000		3.860	Dec 2022	2.360	Dec 2023	-		2.360	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-NAWC/PM	MIPR	NAWC/PM : Pt. Mugu, CA	16.058	2.689	Dec 2021	3.100	Dec 2022	5.100	Dec 2023	-		5.100	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD	MIPR	Naval Information Warfare Center	7.803	0.748	Dec 2021	4.600	Dec 2022	7.018	Dec 2023	-		7.018	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604878C / Aegis BMD Test				Project (Number/Name) MT09 / AEGIS BMD Test					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Flight Test Execution - MT09-NIWC PAC		(NIWC) : San Diego, CA													
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-NSWC DD	MIPR	NSWC Dahlgren : Dahlgren, VA	13.739	0.813	Dec 2021	13.232	Jan 2023	12.882	Jan 2024	-		12.882	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-NSWCCR	MIPR	NSWC Carderock : Potomac, MD	10.142	0.000		1.680	Dec 2022	2.093	Dec 2023	-		2.093	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-PHD	MIPR	NSWC PHD : Pt. Hueneme, CA	23.643	2.852	Dec 2021	17.627	Dec 2022	9.627	Dec 2023	-		9.627	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-PMRF	MIPR	PMRF Barking Sands : Kauai, HI	36.412	5.093	Dec 2021	4.500	Dec 2022	10.271	Dec 2023	-		10.271	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-Various	MIPR	Various : HI, VA, CA, MA, NC, NJ, AZ	129.639	16.267	Dec 2021	18.449	Dec 2022	12.675	Dec 2023	-		12.675	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Flight Test Execution	SS/CPFF	Lockheed Martin : NJ	15.537	1.896	Dec 2021	9.095	Dec 2022	13.412	Dec 2023	-		13.412	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Flight Test Execution - RMS	SS/CPFF	Raytheon : AZ	10.707	9.131	Dec 2021	5.945	Dec 2022	5.945	Dec 2023	-		5.945	Continuing	Continuing	Continuing
Aegis BMD Ground Test Execution - Aegis BMD Ground Test Execution - MT09 - Various	MIPR	Various : Various	3.634	0.761	Dec 2021	0.000		0.000		-		0.000	0.000	4.395	0.000
Aegis BMD Ground Test Execution - Aegis BMD Ground Test Execution - MT09 - CORONA	MIPR	NSWC Corona : CA	6.009	0.965	Dec 2021	1.015	Dec 2022	1.015	Dec 2023	-		1.015	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604878C / Aegis BMD Test				Project (Number/Name) MT09 / AEGIS BMD Test					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Aegis BMD Ground Test Execution - Aegis BMD Ground Test Execution - MT09 - JHU/APL MDA	SS/CPFF	JHU/APL : MDA	10.554	1.424	Dec 2021	3.401	Dec 2022	3.401	Dec 2023	-		3.401	Continuing	Continuing	Continuing
Aegis BMD Ground Test Execution - Aegis BMD Ground Test Execution - MT09 - LM	SS/CPFF	Lockheed Martin : Moorestown, NJ	38.508	3.196	Dec 2021	7.288	Dec 2022	5.225	Dec 2023	-		5.225	Continuing	Continuing	Continuing
Aegis BMD Ground Test Execution - Aegis BMD Ground Test Execution - MT09 - NIWC PAC	MIPR	Naval Information Warfare Center (NIWC) : San Diego, CA	32.315	20.097	Dec 2021	9.630	Dec 2022	7.457	Dec 2023	-		7.457	Continuing	Continuing	Continuing
Aegis BMD Ground Test Execution - Aegis BMD Ground Test Execution - MT09 - PHD	MIPR	NSWC PHD : Pt. Hueneme, CA	8.916	1.770	Dec 2021	1.900	Dec 2022	1.900	Dec 2023	-		1.900	Continuing	Continuing	Continuing
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - APL	SS/CPFF	JHU/APL : Columbia MD	37.481	0.029	Dec 2021	1.100	Dec 2022	2.633	Dec 2023	-		2.633	Continuing	Continuing	Continuing
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - CORONA	MIPR	NSWC Corona : CA	29.793	5.367	Dec 2021	5.500	Dec 2022	5.769	Dec 2023	-		5.769	Continuing	Continuing	Continuing
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - NAWC/PM	MIPR	NAWC/PM : Pt. Mugu, CA	4.279	0.882	Dec 2021	1.000	Dec 2022	2.500	Dec 2023	-		2.500	Continuing	Continuing	Continuing
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - NIWC PAC	MIPR	Naval Information Warfare Center (NIWC) : San Diego, CA	12.036	2.522	Dec 2021	2.200	Dec 2022	2.200	Dec 2023	-		2.200	Continuing	Continuing	Continuing
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - NSWCDD	MIPR	NSWC Dahlgren : Dahlgren, VA	20.068	2.354	Dec 2021	3.128	Dec 2022	3.128	Dec 2023	-		3.128	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604878C / Aegis BMD Test				Project (Number/Name) MT09 / AEGIS BMD Test					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - PHD	MIPR	NSWC PHD : Pt. Hueneme, CA	32.938	4.280	Dec 2021	3.524	Dec 2022	3.524	Dec 2023	-		3.524	Continuing	Continuing	Continuing
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - Various	MIPR	Various : HI, VA, CA, MA, MD	31.986	2.874	Dec 2021	3.087	Dec 2022	0.878	Dec 2023	-		0.878	Continuing	Continuing	Continuing
Engineering & Analysis - Engineering & Analysis	TBD	Teledyne Brown Engineering : Huntsville ,AL	5.160	1.672	Nov 2021	1.700	Nov 2022	0.000		-		0.000	0.000	8.532	0.000
Engineering & Analysis - Engineering & Analysis - Engineering & Analysis - Engineering Support	C/CPAF	Northrop Grumman : AL, CO	8.201	0.000		0.000		0.000		-		0.000	0.000	8.201	0.000
Engineering & Analysis - Engineering & Analysis - Engineering & Analysis - FFRDC/UARC	MIPR	Various : AL, CO, VA	17.029	0.000		0.000		0.000		-		0.000	0.000	17.029	0.000
Engineering & Analysis - Engineering & Analysis - Engineering & Analysis - Industry	C/CPAF	Boeing : AL	4.334	0.000		0.000		0.000		-		0.000	0.000	4.334	0.000
Engineering & Analysis - Engineering & Analysis - Engineering & Analysis - OGA	MIPR	CCDC : AL	30.308	1.442	Nov 2021	0.624	Nov 2022	0.000		-		0.000	0.000	32.374	0.000
Engineering & Analysis - Engineering & Analysis - NME	MIPR	CCDC : CO, AL	10.667	0.250	Nov 2021	1.587	Nov 2022	0.000		-		0.000	0.000	12.504	0.000
Engineering & Analysis - Engineering & Analysis NME Support	MIPR	Naval Information Warfare Center (NIWC) : CA	2.876	0.000		0.000		0.000		-		0.000	0.000	2.876	0.000
Engineering & Analysis - Engineering & Analysis-Variou	MIPR	GTRI : Huntsville, AL	2.482	2.563	Nov 2021	1.784	Nov 2022	0.000		-		0.000	0.000	6.829	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
0400 / 4						PE 0604878C / Aegis BMD Test				MT09 / AEGIS BMD Test					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Program Operations - Program Operations - MT09 - Civ Salary	Allot	MDA : Dahlgren, VA	0.000	2.106	Dec 2021	1.613	Dec 2022	1.667	Dec 2023	-		1.667	Continuing	Continuing	Continuing
Test Program Operations - Program Operations - MT09 - MDA Travel	Allot	MDA : Dahlgren, VA	1.929	0.000		0.667	Dec 2022	0.000		-		0.000	0.000	2.596	0.000
Test Program Operations - Program Operations - MT09 - NAVSEA Civ Sal	MIPR	NAVSEA : Washington DC	1.710	0.000		0.545	Dec 2022	0.000		-		0.000	0.000	2.255	0.000
Test Program Operations - Program Operations - MT09 - Various	MIPR	Various : Various	6.486	4.983	Dec 2021	3.521	Dec 2022	4.838	Dec 2023	-		4.838	Continuing	Continuing	Continuing
Subtotal			714.616	106.147		168.982		186.236		-		186.236	Continuing	Continuing	N/A
Remarks															
N/A															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Program Operations - Program Operations - MT09 - MIDAESS	C/CPFF	Various : Various	11.230	0.000		0.000		0.000		-		0.000	0.000	11.230	0.000
Subtotal			11.230	0.000		0.000		0.000		-		0.000	0.000	11.230	N/A
Remarks															
N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			725.846	106.147		168.982		186.236		-		186.236	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency							Date: March 2023			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0604878C / Aegis BMD Test		Project (Number/Name) MT09 / AEGIS BMD Test				
	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 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.										

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency

Date: March 2023

Appropriation/Budget Activity

0400 / 4

R-1 Program Element (Number/Name)

PE 0604878C / Aegis BMD Test

Project (Number/Name)

MT09 / AEGIS BMD Test

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 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
GTI-ISR (21) (Missile Defense System Ground Test)	◆																											
GTI-09 Sprint 1 (E/C) (Missile Defense System Ground Test)				◆																								
PACIFIC DRAGON-22 E1 (AEGIS 5.0, DT/OT Intercept Flight Test)				▲																								
PACIFIC DRAGON-22 E2 (AEGIS 5.0, DT/OT Tracking Exercise Flight Test)				▲																								
PACIFIC DRAGON-22 E3 (AEGIS 5.0, DT/OT Tracking Exercise Flight Test)				▲																								
GTD-08a (N/I) (Missile Defense System Ground Test)				◆																								
JFTM-07 E4 (JAPAN, DT Intercept Flight Test)				▲																								
GTD-07b (AA)				◆																								
GTI-09 Sprint 2 (E/C) (Missile Defense System Ground Test)					◇																							
FTM-31 E1a (AEGIS SBT, DT/OT Intercept Flight Test)					◇																							
FTX-26 (OT) (SN, OT Target Only Flight Test)								△																				
GTI-08b (N/I)								◇																				
FTG-12 (GM, DT/OT Intercept Flight Test)									△																			
FTM-32 (AEGIS SBT, DT/OT Intercept Flight Test)									△																			
GTI-ASI (24) (Missile Defense System Ground Test)									◇																			
FTX-40 (AEGIS 5.1, DT Tracking Exercise Flight Test)									△																			
FTX-23 (AEGIS 5.1, DT Tracking Exercise Flight Test)									△																			
GTD-08b (N/I)									◇																			
GTI-ISR (23) (Missile Defense System Ground Test)										◇																		
Pacific Dragon-24 E1 (ARAV-B)											△																	
Pacific Dragon-24 E2 (ARAV-T1)											△																	
FEM-02												◇																
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)												◇																
FTM-37 (AEGIS 5.1, DT/OT Intercept Flight Test)												△																

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023												
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)												
0400 / 4					PE 0604878C / Aegis BMD Test					MT09 / AEGIS BMD Test												
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 2022		FY 2023			FY 2024			FY 2025		FY 2026			FY 2027		FY 2028		
GTI-ISR (25) (Missile Defense System Ground Test)													◇									
FTM-43 (AEGIS 5.1, DT/OT Intercept Flight Test)													△									
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)													◇									
FTM-30 (AEGIS 5.1, DT/OT Intercept Flight Test)														△								
GTD-13 (N/I) (Missile Defense System Ground Test)														◇								
GTI-12 (E/C)															◇							
GTD-12 (E/C) (Missile Defense System Ground Test)																◇						
GTI-ASI (26) (Missile Defense System Ground Test)																	◇					
FTM-40 (AEGIS 6, DT/OT Intercept Flight Test)																	△					
GTI-14 Sprint 1 (N/I)																		◇				
Pacific Dragon-26 E2 (ARAV-T)																		△				
Pacific Dragon-26 E1 (ARAV-B)																		△				
FTM-41 (AEGIS 6, DT/OT Intercept Flight Test)																			△			
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)																		◇				
GTI-15 Sprint 1 (E/C)																			◇			
GTD-14 (N/I) ((Missile Defense System Ground Test)																			◇			
GTI-ISR (27) (Missile Defense System Ground Test)																			◇			
FTM-42 (AEGIS 6, DT/OT Intercept Flight Test)																			△			
FTX-47																			△			
GTI-15 Sprint 2 (E/C)																				◇		
FTM-47 (MRBM T4 X3/BQM-177 X4)																					△	
GTD-15 (E/C)																					◇	
FTG-18 (DT/OT)																					△	
Pacific Dragon-28 E1 (ARAV-B)																					△	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023					
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604878C / Aegis BMD Test						Project (Number/Name) MT09 / AEGIS BMD Test							
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028	
Pacific Dragon-28 E2 (ARAV-B)																			◇
GTI-ASI (28)																			◇
GTI-16 Sprint 1 (N/I)																			◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604878C / <i>Aegis BMD Test</i>	Project (Number/Name) MT09 / <i>AEGIS BMD Test</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GTI-ISR (21) (Missile Defense System Ground Test)	1	2022	1	2022
GTI-09 Sprint 1 (E/C) (Missile Defense System Ground Test)	4	2022	4	2022
PACIFIC DRAGON-22 E1 (AEGIS 5.0, DT/OT Intercept Flight Test)	4	2022	4	2022
PACIFIC DRAGON-22 E2 (AEGIS 5.0, DT/OT Tracking Exercise Flight Test)	4	2022	4	2022
PACIFIC DRAGON-22 E3 (AEGIS 5.0, DT/OT Tracking Exercise Flight Test)	4	2022	4	2022
GTD-08a (N/I) (Missile Defense System Ground Test)	1	2023	1	2023
JFTM-07 E4 (JAPAN, DT Intercept Flight Test)	1	2023	1	2023
GTD-07b (AA)	1	2023	1	2023
GTI-09 Sprint 2 (E/C) (Missile Defense System Ground Test)	2	2023	2	2023
FTM-31 E1a (AEGIS SBT, DT/OT Intercept Flight Test)	2	2023	2	2023
FTX-26 (OT) (SN, OT Target Only Flight Test)	4	2023	4	2023
GTI-08b (N/I)	4	2023	4	2023
FTG-12 (GM, DT/OT Intercept Flight Test)	1	2024	1	2024
FTM-32 (AEGIS SBT, DT/OT Intercept Flight Test)	1	2024	1	2024
GTI-ASI (24) (Missile Defense System Ground Test)	2	2024	2	2024
FTX-40 (AEGIS 5.1, DT Tracking Exercise Flight Test)	2	2024	2	2024
FTX-23 (AEGIS 5.1, DT Tracking Exercise Flight Test)	2	2024	2	2024
GTD-08b (N/I)	2	2024	2	2024
GTI-ISR (23) (Missile Defense System Ground Test)	3	2024	3	2024
Pacific Dragon-24 E1 (ARAV-B)	4	2024	4	2024
Pacific Dragon-24 E2 (ARAV-T1)	4	2024	4	2024
FEM-02	1	2025	1	2025
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)	1	2025	1	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0604878C / <i>Aegis BMD Test</i>		Project (Number/Name) MT09 / <i>AEGIS BMD Test</i>	
		Start		End	
Events	Quarter	Year	Quarter	Year	
FTM-37 (AEGIS 5.1, DT/OT Intercept Flight Test)	1	2025	1	2025	
GTI-ISR (25) (Missile Defense System Ground Test)	2	2025	2	2025	
FTM-43 (AEGIS 5.1, DT/OT Intercept Flight Test)	2	2025	2	2025	
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)	3	2025	3	2025	
FTM-30 (AEGIS 5.1, DT/OT Intercept Flight Test)	4	2025	4	2025	
GTD-13 (N/I) (Missile Defense System Ground Test)	4	2025	4	2025	
GTI-12 (E/C)	1	2026	1	2026	
GTD-12 (E/C) (Missile Defense System Ground Test)	2	2026	2	2026	
GTI-ASI (26) (Missile Defense System Ground Test)	3	2026	3	2026	
FTM-40 (AEGIS 6, DT/OT Intercept Flight Test)	3	2026	3	2026	
GTI-14 Sprint 1 (N/I)	4	2026	4	2026	
Pacific Dragon-26 E2 (ARAV-T)	4	2026	4	2026	
Pacific Dragon-26 E1 (ARAV-B)	4	2026	4	2026	
FTM-41 (AEGIS 6, DT/OT Intercept Flight Test)	1	2027	1	2027	
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)	2	2027	2	2027	
GTI-15 Sprint 1 (E/C)	3	2027	3	2027	
GTD-14 (N/I) ((Missile Defense System Ground Test)	4	2027	4	2027	
GTI-ISR (27) (Missile Defense System Ground Test)	4	2027	4	2027	
FTM-42 (AEGIS 6, DT/OT Intercept Flight Test)	4	2027	4	2027	
FTX-47	4	2027	4	2027	
GTI-15 Sprint 2 (E/C)	1	2028	1	2028	
FTM-47 (MRBM T4 X3/BQM-177 X4)	2	2028	2	2028	
GTD-15 (E/C)	2	2028	2	2028	
FTG-18 (DT/OT)	3	2028	3	2028	
Pacific Dragon-28 E1 (ARAV-B)	4	2028	4	2028	
Pacific Dragon-28 E2 (ARAV-B)	4	2028	4	2028	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0604878C / Aegis BMD Test		Project (Number/Name) MT09 / AEGIS BMD Test	
		Start		End	
Events		Quarter	Year	Quarter	Year
GTI-ASI (28)		4	2028	4	2028
GTI-16 Sprint 1 (N/I)		4	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604878C / Aegis BMD Test				Project (Number/Name) MD40 / Program Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program Wide Support	31.437	5.059	6.637	7.248	-	7.248	4.951	9.077	8.320	5.991	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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	5.059	6.637	7.248
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604878C / <i>Aegis BMD Test</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
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.			
<i>FY 2023 Plans:</i> - SEE ABOVE.			
<i>FY 2024 Plans:</i> - SEE ABOVE.			
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase from FY 2023 to FY 2024 provides the PWS allocation 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.			
Accomplishments/Planned Programs Subtotals		5.059	6.637
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services (A&AS) support.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604878C / <i>Aegis BMD Test</i>						Project (Number/Name) MD40 / <i>Program Wide Support</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations Management	MIPR	DOD - DEFENSE COURIER DIVISION (DCD) : VA	0.933	0.175	Jan 2022	0.170	Dec 2022	0.000		-		0.000	0.000	1.278	0.000
Program Wide Support - Agency Operations User Services	C/CPAF	Various : Multi: AL, CA, CO, VA	0.324	0.000		0.000		0.000		-		0.000	0.000	0.324	0.000
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	Various : MDA Multi: AL, CO, CA, VA,	10.761	0.000		0.000		0.000		-		0.000	0.000	10.761	0.000
Program Wide Support - Agency Operations and Support Other Agency Services (MIPR)	MIPR	Various : Various	0.658	0.610	Oct 2021	0.638	Nov 2022	0.396	Nov 2023	-		0.396	Continuing	Continuing	Continuing
Subtotal			12.676	0.785		0.808		0.396		-		0.396	Continuing	Continuing	N/A
Remarks N/A															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations Contract Support	C/CPFF	SYSTEMS ENGINEERING INC : AL	0.000	0.000		0.000		2.268	Nov 2023	-		2.268	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services (FFP)	C/CPFF	Veterans Technology, LLC : AL	18.761	4.274	Feb 2022	5.829	Dec 2022	4.584	Dec 2023	-		4.584	Continuing	Continuing	Continuing
Subtotal			18.761	4.274		5.829		6.852		-		6.852	Continuing	Continuing	N/A
Remarks N/A															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency											Date: March 2023			
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604878C / Aegis BMD Test					Project (Number/Name) MD40 / Program Wide Support				
		Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		31.437	5.059		6.637		7.248		-		7.248	Continuing	Continuing	N/A

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

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604878C / Aegis BMD Test	Project (Number/Name) MD40 / Program Wide Support

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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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 0604879C I <i>Ballistic Missile Defense Sensor Test</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	534.023	77.428	88.326	111.049	-	111.049	90.697	103.885	154.905	127.807	Continuing	Continuing
MT11: <i>BMDs Radars Test</i>	509.840	74.272	85.119	106.820	-	106.820	87.751	99.357	148.438	122.921	Continuing	Continuing
MD40: <i>Program Wide Support</i>	24.183	3.156	3.207	4.229	-	4.229	2.946	4.528	6.467	4.886	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Increase from FY 2023 to FY 2024 is in accordance with the Integrated Master Test Plan (IMTP) requirements.

A. Mission Description and Budget Item Justification

The Missile Defense Agency executes a robust test program that includes flight and ground tests to support both strategic and regional Missile Defense System capabilities against medium- and long-range threats. The Sensors elements of the Missile Defense System IMTP are intended to demonstrate the integrated missile defense capabilities under development to ensure the capabilities delivered to the Warfighter are operationally effective, suitable, and survivable. The Sensors Test Program Element specifically includes the planning, execution, and analysis of flight and ground tests, as well as the associated infrastructure to provide data required for Missile Defense technical Capability Declarations.

The Sensors Test program supports integration of radar improvements into the Missile Defense System, mid- and far-term Discrimination Improvements, and Operational Test and Evaluation of the theater/regional and strategic Missile Defense System architecture.

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	77.428	88.326	91.495	-	91.495
Current President's Budget	77.428	88.326	111.049	-	111.049
Total Adjustments	0.000	0.000	19.554	-	19.554
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	19.554	-	19.554

Change Summary Explanation

Increase in FY 2024 is in accordance with the current IMTP, to include FY 2024 Pacific Deterrence Initiative funding increased by \$17.452 million.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604879C / Ballistic Missile Defense Sensor Test				Project (Number/Name) MT11 / BMDS Radars Test			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MT11: BMDS Radars Test	509.840	74.272	85.119	106.820	-	106.820	87.751	99.357	148.438	122.921	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from FY 2023 to FY 2024 is in accordance with the Integrated Master Test Plan (IMTP) requirements.

A. Mission Description and Budget Item Justification

This project provides activities for planning, analysis, and execution of Missile Defense System flight test events, including pre- and post-test ground testing such as Digital and Hardware-in-the-Loop (HWIL) System Pre-Mission Tests and System Federation Validation Events. Sensors Test provides planning, analysis, and execution in accordance with the Ground Test Concept of Operations (CONOPS) supporting the Ground Test level of effort concept for Missile Defense System system-level ground tests identified in the IMTP. Test infrastructure funding provides for HWIL labs, Mission Operation Center/Mission Support Center (MOC/MSOC), and program management required to operate and maintain a flight and ground test capability.

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

	FY 2022	FY 2023	FY 2024
Title: Test Resources	64.701	72.075	77.089
Articles:	-	-	-
<p>Description: Test Resources efforts include configuration and maintenance of Sensors HWILs for use in ground test execution (Missile Defense System testing and element interoperability developmental testing) and in Missile Defense System flight test execution pre-mission testing, and technical oversight to all Missile Defense System system-level activities with Sensors participation. It also includes conducting the detailed test event planning and design, integration, and execution for all Missile Defense System ground test campaigns. Test Resources provides support for evolving Objective Simulation Framework (OSF) (software upgrades) integration into the Missile Defense System HWIL ground test execution and flight test execution. It also provides a Level of Effort support to Missile Defense System Ground Tests in accordance with the Missile Defense System IMTP and the Ground Test CONOPS.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: - SEE ABOVE</p> <p>FY 2024 Plans: - SEE ABOVE</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0604879C / Ballistic Missile Defense Sensor Test				Project (Number/Name) MT11 / BMDS Radars Test				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2022	FY 2023	FY 2024
Increase from FY 2023 to FY 2024 is in accordance with the current IMTP. FY 2024 Pacific Deterrence Initiative (PDI) funding has increased by \$3.867 million for the Guam FEM-02 requirement.												
Title: Flight Test Execution										9.571	13.044	29.731
Articles:										-	-	-
Description: Flight Test Execution includes test planning, pre-flight analysis, transportation of radars and MOC/MSC, test execution, and post-flight analysis for Sensors' participation in Missile Defense System flight tests in accordance with the Missile Defense System IMTP.												
Specific and/or unique accomplishments to each FY are as follows:												
FY 2023 Plans: - SEE ABOVE												
FY 2024 Plans: - SEE ABOVE												
FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 is in accordance with the current IMTP. FY 2024 PDI funding has increased by \$13.585 million for Guam flight test execution.												
Accomplishments/Planned Programs Subtotals										74.272	85.119	106.820
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• 0603884C: Ballistic Missile Defense Sensors	250.123	230.502	239.159	-	239.159	212.191	233.877	242.623	251.226	Continuing	Continuing	
• 0603896C: Ballistic Missile Defense Command and Control, Battle Management & Communication	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing	
• 0603898C: Ballistic Missile Defense Joint Warfighter Support	50.261	50.269	48.248	-	48.248	49.164	50.445	51.542	52.859	Continuing	Continuing	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023	
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0604879C / Ballistic Missile Defense Sensor Test				Project (Number/Name) MT11 / BMDS Radars Test			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603904C: Missile Defense Integration and Operations Center (MDIOC)	44.188	49.367	50.549	-	50.549	56.624	58.020	59.193	60.615	Continuing	Continuing
• 0603907C: Sea Based X-Band Radar (SBX)	147.241	164.668	177.868	-	177.868	196.952	176.633	162.632	162.578	Continuing	Continuing
• 0603914C: Ballistic Missile Defense Test	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing
• 0604672C: Homeland Defense Radar-Hawaii	75.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	75.000
• 0604873C: Long Range Discrimination Radar (LRDR)	129.552	75.120	103.517	-	103.517	100.114	68.815	69.219	65.521	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
Sensors Test uses multiple development and Test and Evaluation contracts for the continuation of Sensor Radar development and testing as described and approved in the Missile Defense Agency IMTP. Sensors also utilizes other contracts with industry as well as agreements with other U.S. Government organizations in order to develop, test and upgrade the Sensors Radar systems.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604879C / Ballistic Missile Defense Sensor Test				Project (Number/Name) MT11 / BMDS Radars Test					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Resources - AN/TPY-2, SBX, UEWR & CD OSF Integration & Infrastructure, Sys Test Lab	C/CPAF	Raytheon : MA	111.221	39.934	Nov 2021	41.543	Nov 2022	45.430	Nov 2023	-		45.430	Continuing	Continuing	Continuing
Test Resources - Civilians/Travel	Allot	MDA : AL/VA	9.767	5.675	Oct 2021	4.582	Oct 2022	5.094	Oct 2023	-		5.094	Continuing	Continuing	Continuing
Test Resources - Communications Development - OGA	MIPR	Secretary of the Air Force (SAF) : NCR	1.516	0.000		0.000		0.000		-		0.000	0.000	1.516	0.000
Test Resources - Communications and Networks	C/CPAF	JACOBS TECHNOLOGY INC. : CO	3.059	2.637	Apr 2022	0.000		0.000		-		0.000	0.000	5.696	0.000
Test Resources - Contract Support Services	C/CPFF	YORKTOWN SYSTEMS GROUP, INC. : AL	7.076	0.088	Oct 2021	0.000		0.000		-		0.000	0.000	7.164	0.000
Test Resources - Contract Support Services - Test Support	C/CPFF	MP SOLUTIONS, LLC : Various	0.000	3.078	Nov 2021	4.191	Nov 2022	4.450	Nov 2023	-		4.450	Continuing	Continuing	Continuing
Test Resources - Cyber Win10 Implementation - MDDC Lab Analysis Infrastructure	C/IDIQ	Analytical Services, Inc. : AL	0.825	0.000		0.000		0.000		-		0.000	0.000	0.825	0.000
Test Resources - Cybersecurity - BGTC and SBIRS	C/IDIQ	Northrop Grumman Space & Mission System : CO	1.600	0.000		0.000		0.000		-		0.000	0.000	1.600	0.000
Test Resources - Cybersecurity - Tactical Communication Environment Segment (TCES)	MIPR	DOD - USN - NAVAL INFORMATION WARFARE SYSTEMS COMMAND (NAVWAR) : CA	0.190	0.000		0.000		0.000		-		0.000	0.000	0.190	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604879C / Ballistic Missile Defense Sensor Test				Project (Number/Name) MT11 / BMDS Radars Test					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Resources - General Infrastructure and OGA Support	Various	Various : AL, NM	7.228	3.422	Nov 2021	8.095	Apr 2023	2.825	Nov 2023	-		2.825	Continuing	Continuing	Continuing
Test Resources - HDR-G Missile Defense System Level Testing	TBD	TBD : TBD	0.000	0.000		0.000		3.867	Nov 2023	-		3.867	Continuing	Continuing	Continuing
Test Resources - LRDR OSF Integration & Infrastructure, Sys Test Lab	C/CPFF	Lockheed Martin : NJ	7.663	9.867	Nov 2021	13.664	Nov 2022	15.423	Nov 2023	-		15.423	Continuing	Continuing	Continuing
Test Resources - UEWR SSF Integration & Infrastructure, Sys Test Lab	C/FPIF	deciBel : AL	14.655	0.000		0.000		0.000		-		0.000	0.000	14.655	0.000
Flight Test Execution - AN/TPY-2, SBX UEWR & CD Missile Defense System Level Testing	C/CPAF	Raytheon : MA	130.350	2.828	Nov 2021	12.264	Nov 2022	10.280	Nov 2023	-		10.280	Continuing	Continuing	Continuing
Flight Test Execution - Agency Level Testing Support	C/CPAF	L-3 Communications : AL	17.000	0.000		0.000		0.000		-		0.000	0.000	17.000	0.000
Flight Test Execution - FT Security, Site Activation & Deployments Missile Defense System Level Testing	Various	Various : AI, CO, HI, Wake Island	43.124	1.503	Nov 2021	0.387	Nov 2022	4.324	Nov 2023	-		4.324	Continuing	Continuing	Continuing
Flight Test Execution - HDR-G Missile Defense System Level Testing	TBD	TBD : TBD	0.000	0.000		0.000		13.585	Nov 2023	-		13.585	Continuing	Continuing	Continuing
Flight Test Execution - IMTP Flight Test	MIPR	DOD - USN - NAVAL AIR WARFARE CENTER WEAPONS DIVISION (NAWCWD), POINT MUGU : CA	0.000	3.497	May 2022	0.000		0.000		-		0.000	0.000	3.497	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604879C / Ballistic Missile Defense Sensor Test				Project (Number/Name) MT11 / BMDS Radars Test					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Flight Test Execution - LRDR Missile Defense System Level Testing	SS/TBD	Lockheed Martin : NJ	10.368	1.743	Nov 2021	0.000		0.000		-		0.000	0.000	12.111	0.000
Flight Test Execution - OGA Sensor Research & Development	MIPR	Secretary of the Air Force : NCR	4.500	0.000		0.000		0.000		-		0.000	0.000	4.500	0.000
Flight Test Execution - System-Level Post Flight Reconstruction (SPFR)	MIPR	CCDC AVMC : AL	2.736	0.000		0.393	Apr 2023	1.542	Nov 2023	-		1.542	Continuing	Continuing	Continuing
Flight Test Execution - UEWR/CD Missile Defense System Level Testing	C/FPIF	deciBel : AL	1.152	0.000		0.000		0.000		-		0.000	0.000	1.152	0.000
Ground Test Execution - AN/TPY-2, SBX, UEWR/CD Missile Defense System Level Testing	C/CPAF	Raytheon : MA	125.324	0.000		0.000		0.000		-		0.000	0.000	125.324	0.000
Ground Test Execution - Long Range Discrimination Missile Defense System Level Testing	C/CPFF	Lockheed Martin : NJ	10.486	0.000		0.000		0.000		-		0.000	0.000	10.486	0.000
Subtotal			509.840	74.272		85.119		106.820		-		106.820	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			509.840	74.272		85.119		106.820		-		106.820	Continuing	Continuing	N/A
Remarks Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023									
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604879C / Ballistic Missile Defense Sensor Test					Project (Number/Name) MT11 / BMDS Radars Test									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028		
GTI-ISR (21) (Missile Defense System Ground Test)					◆														
FTX-43 (OTHER, DT Tracking Exercise Flight Test)					▲														
FTT-21 (TH, DT Intercept Flight Test)						▲													
GTI-08a (N/I) (Missile Defense System Ground Test)							◆												
SICO-8a-1							◆												
GTI-09 Sprint 1 (E/C) (Missile Defense System Ground Test)								◆											
FTX-45								▲											
GTD-08a (N/I) (Missile Defense System Ground Test)									◆										
SICO -09-1									◆										
SICO-09-2										◇									
GTI-09 Sprint 2 (E/C) (Missile Defense System Ground Test)										◇									
SICO-09-3										◇									
SICO-08a-02											◇								
FTT-25 (TH, DT/OT Intercept Flight Test)											△								
SICO 9-4											◇								
FTX-26 (OT) (SN, OT Target Only Flight Test)												△							
GTI-08b (N/I)												◇							
GTI-101 (E/C)													◇						
FTG-12 (GM, DT/OT Intercept Flight Test)													△						
GTI-ASI (24) (Missile Defense System Ground Test)														◇					
GTD-08b (N/I)														◇					
GTI-ISR (23) (Missile Defense System Ground Test)															◇				
GTI-102 (I)																◇			
FTX-28 E2 (TH, DT/OT Tracking Exercise Flight Test)																	△		

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023																			
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0604879C / Ballistic Missile Defense Sensor Test										Project (Number/Name) MT11 / BMDS Radars Test									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
FTX-28 E1 (TH, DT/OT Tracking Exercise Flight Test)																													
FTX-28 E3 (TH, DT/OT Tracking Exercise Flight Test)																													
FEM-02																													
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)																													
GTI-ISR (25) (Missile Defense System Ground Test)																													
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)																													
FTT-26 (MRBM T1)																													
GTD-13 (N/I) (Missile Defense System Ground Test)																													
GTI-12 (E/C)																													
GTD-12 (E/C) (Missile Defense System Ground Test)																													
GTI-ASI (26) (Missile Defense System Ground Test)																													
TH CTV-03 (TH, DT Interceptor Only Flight Test)																													
GTI-14 Sprint 1 (N/I)																													
GTI-24 (N/I)																													
FTX-47																													
FTG-16 (GM, DT Intercept Flight Test)																													
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)																													
SICO-24 (N/I)																													
GTI-15 Sprint 1 (E/C)																													
FTT-22 (TH, DT/OT Intercept Flight Test)																													
FTG-17 (GM, DT/OT Intercept Flight Test)																													
GTD-14 (N/I) ((Missile Defense System Ground Test)																													
GTI-ISR (27) (Missile Defense System Ground Test)																													
GTI-15 Sprint 2 (E/C)																													

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023					
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604879C / Ballistic Missile Defense Sensor Test						Project (Number/Name) MT11 / BMDS Radars Test							
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028	
GTD-15 (E/C)																		◇	
FTG-18 (DT/OT)																			△
GTI-25 (N/I)																		◇	
GTI-ASI (28)																			◇
GTI-16 Sprint 1 (N/I)																			◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604879C / <i>Ballistic Missile Defense Sensor Test</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GTI-ISR (21) (Missile Defense System Ground Test)	1	2022	1	2022
FTX-43 (OTHER, DT Tracking Exercise Flight Test)	1	2022	1	2022
FTT-21 (TH, DT Intercept Flight Test)	2	2022	2	2022
GTI-08a (N/I) (Missile Defense System Ground Test)	3	2022	3	2022
SICO-8a-1	3	2022	3	2022
GTI-09 Sprint 1 (E/C) (Missile Defense System Ground Test)	4	2022	4	2022
FTX-45	4	2022	4	2022
GTD-08a (N/I) (Missile Defense System Ground Test)	1	2023	1	2023
SICO -09-1	1	2023	1	2023
SICO-09-2	2	2023	2	2023
GTI-09 Sprint 2 (E/C) (Missile Defense System Ground Test)	2	2023	2	2023
SICO-09-3	2	2023	2	2023
SICO-08a-02	3	2023	3	2023
FTT-25 (TH, DT/OT Intercept Flight Test)	3	2023	3	2023
SICO 9-4	3	2023	3	2023
FTX-26 (OT) (SN, OT Target Only Flight Test)	4	2023	4	2023
GTI-08b (N/I)	4	2023	4	2023
GTI-101 (E/C)	1	2024	1	2024
FTG-12 (GM, DT/OT Intercept Flight Test)	1	2024	1	2024
GTI-ASI (24) (Missile Defense System Ground Test)	2	2024	2	2024
GTD-08b (N/I)	2	2024	2	2024
GTI-ISR (23) (Missile Defense System Ground Test)	3	2024	3	2024

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023	
Appropriation/Budget Activity	R-1 Program Element (Number/Name)		Project (Number/Name)	
0400 / 4	PE 0604879C / Ballistic Missile Defense Sensor Test		MT11 / BMDS Radars Test	
Events	Start		End	
	Quarter	Year	Quarter	Year
GTI-102 (I)	3	2024	3	2024
FTX-28 E2 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024
FTX-28 E1 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024
FTX-28 E3 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024
FEM-02	1	2025	1	2025
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)	1	2025	1	2025
GTI-ISR (25) (Missile Defense System Ground Test)	2	2025	2	2025
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)	3	2025	3	2025
FTT-26 (MRBM T1)	3	2025	3	2025
GTD-13 (N/I) (Missile Defense System Ground Test)	4	2025	4	2025
GTI-12 (E/C)	1	2026	1	2026
GTD-12 (E/C) (Missile Defense System Ground Test)	2	2026	2	2026
GTI-ASI (26) (Missile Defense System Ground Test)	3	2026	3	2026
TH CTV-03 (TH, DT Interceptor Only Flight Test)	3	2026	3	2026
GTI-14 Sprint 1 (N/I)	4	2026	4	2026
GTI-24 (N/I)	4	2026	4	2026
FTX-47	4	2027	4	2027
FTG-16 (GM, DT Intercept Flight Test)	2	2027	2	2027
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)	2	2027	2	2027
SICO-24 (N/I)	3	2027	3	2027
GTI-15 Sprint 1 (E/C)	3	2027	3	2027
FTT-22 (TH, DT/OT Intercept Flight Test)	3	2027	3	2027
FTG-17 (GM, DT/OT Intercept Flight Test)	4	2027	4	2027
GTD-14 (N/I) ((Missile Defense System Ground Test)	4	2027	4	2027
GTI-ISR (27) (Missile Defense System Ground Test)	4	2027	4	2027

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency				Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0604879C / Ballistic Missile Defense Sensor Test		Project (Number/Name) MT11 / BMDS Radars Test	
		Start		End	
Events		Quarter	Year	Quarter	Year
GTI-15 Sprint 2 (E/C)		1	2028	1	2028
GTD-15 (E/C)		2	2028	2	2028
FTG-18 (DT/OT)		3	2028	3	2028
GTI-25 (N/I)		3	2028	3	2028
GTI-ASI (28)		4	2028	4	2028
GTI-16 Sprint 1 (N/I)		4	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604879C / Ballistic Missile Defense Se nsor Test				Project (Number/Name) MD40 / Program Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program Wide Support	24.183	3.156	3.207	4.229	-	4.229	2.946	4.528	6.467	4.886	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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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)

Title: Program Wide Support		FY 2022	FY 2023	FY 2024
Articles:		3.156	3.207	4.229
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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		-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604879C / <i>Ballistic Missile Defense Sensor Test</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p><i>FY 2023 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2024 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase from FY 2023 to FY 2024 provides the PWS allocation 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.</p>			
Accomplishments/Planned Programs Subtotals		3.156	3.207
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604879C / <i>Ballistic Missile Defense Sensor Test</i>						Project (Number/Name) MD40 / <i>Program Wide Support</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations Management	C/CPFF	SYSTEMS ENGINEERING INC : AL	2.351	0.112	Apr 2022	0.625	Dec 2022	1.619	Dec 2023	-		1.619	Continuing	Continuing	Continuing
Subtotal			2.351	0.112		0.625		1.619		-		1.619	Continuing	Continuing	N/A
Remarks N/A															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations and Support Services	C/CPFF	YORKTOWN SYSTEMS GROUP, INC. : AL	21.832	3.044	Apr 2022	2.582	Apr 2023	2.610	Apr 2024	-		2.610	Continuing	Continuing	Continuing
Subtotal			21.832	3.044		2.582		2.610		-		2.610	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			24.183	3.156		3.207		4.229		-		4.229	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0604879C / Ballistic Missile Defense Sensor Test										Project (Number/Name) MD40 / Program Wide Support																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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 ◇																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604879C / Ballistic Missile Defense Sensor Test	Project (Number/Name) MD40 / Program Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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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 0604880C / <i>Land Based SM-3 (LBSM3)</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	1,277.773	42.156	27.678	22.163	-	22.163	20.479	21.193	21.620	21.736	Continuing	Continuing
MD68: <i>AEGIS Ashore</i>	1,223.475	38.489	25.448	20.316	-	20.316	18.501	19.072	19.453	19.482	Continuing	Continuing
MC68: <i>Cyber Operations</i>	9.000	1.047	1.225	1.233	-	1.233	1.241	1.265	1.290	1.290	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	45.298	2.620	1.005	0.614	-	0.614	0.737	0.856	0.877	0.964	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Decrease from FY 2023 to FY 2024 reflects adjustments for prior year carryover and continued program maturation of Site Activation activities as Poland construction nears completion and transitions to the U.S. Navy.

A. Mission Description and Budget Item Justification

This program supports development of the Land-Based Standard Missile-3 capability, Aegis Ashore. On 17 September 2009, the President announced an overarching plan to provide regional missile defense to U.S. deployed forces, allies, and partners in Europe called the European Phased Adaptive Approach (EPAA). The EPAA policy specifically defines a timeline to deploy a mix of afloat and land-based Ballistic Missile Defense (BMD) capabilities. Aegis Ashore represents one of these land-based capabilities. The U.S. can also build on current efforts to pursue Phased Adaptive Approaches (PAAs) in the Asia Pacific and the Middle East regions. The PAA tailors U.S. BMD capabilities to specific theater needs enhancing integrated regional missile defenses to protect defended assets against medium, intermediate, and ultimately intercontinental range ballistic missiles.

Aegis Ashore is a key component of EPAA Phases II (Romania) and III (Poland) and provides Aegis BMD capability against short to intermediate-range ballistic missiles in an ashore configuration. Aegis Ashore provides sophisticated engagement strategies and can adapt to threat updates within each sites designated area of responsibility. Aegis Ashore re-hosts the required BMD components of a U.S. Navy Destroyer, including: SPY-1 radar; Vertical Launch System , Computing Infrastructure; Command Control; Communications; Computers and Intelligence Systems; and Operator Consoles.

Modernize, develop, and test Aegis Ashore Missile Defense Test Complex to support deployed Aegis Ashore sites (Romania and Poland) operational needs.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604880C / <i>Land Based SM-3 (LBSM3)</i>
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B. Program Change Summary (\$ in Millions)	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	43.158	27.678	26.896	-	26.896
Current President's Budget	42.156	27.678	22.163	-	22.163
Total Adjustments	-1.002	0.000	-4.733	-	-4.733
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-1.002	0.000			
• Other Adjustment	0.000	0.000	-4.733	-	-4.733

Change Summary Explanation

Decrease from FY 2023 to FY 2024 reflects adjustments for prior year carryover and continued program maturation of Site Activation activities as Poland construction nears completion and transitions to the U.S. Navy.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)				Project (Number/Name) MD68 / AEGIS Ashore			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD68: AEGIS Ashore	1,223.475	38.489	25.448	20.316	-	20.316	18.501	19.072	19.453	19.482	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2023 to FY 2024 reflects adjustments for prior year carryover and continued program maturation of Site Activation activities as Poland construction nears completion and transitions to the U.S. Navy.

A. Mission Description and Budget Item Justification

Missile Defense Agency (MDA) is responsible for maintaining the Aegis Ashore Missile Defense Text Complex (AAMDTC) at the Pacific Missile Range Facility (PMRF). MDA uses AAMDTC in support of Ground testing, Aegis Weapons System computer program development testing, and fielding (with hardware upgrades), and support proof of concept demonstrations. AAMDTC is capable of testing and developing both shore based and sea based Aegis capabilities.

In support of European Phased Adaptive Approach (EPAA) Phase III, Aegis Ashore integrates the Aegis BMD 5.1 and Standard Missile (SM-3) Block IIA capabilities into the Aegis Ashore sites. MDA will provide all upgrades to Ballistic Missile Defense (BMD) capability, BMD specific mission equipment, and integration with existing Missile Defense System nodes for all Aegis Ashore sites.

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

	FY 2022	FY 2023	FY 2024
Title: Aegis Weapon System Development	19.334	20.230	20.316
Articles:	-	-	-
Description: Operations of the AAMDTC at the PMRF in Hawaii. Develop and test Aegis BMD capability improvements and support advanced radar and combat system studies and engineering analysis to achieve compliance with the MDA's High Altitude Electromagnetic Pulse (HEMP) Technical Performance Measure requirement and subsequent Defense Threat Reduction Agency (DTRA)/ United States Strategic Command/ European Command (EUCOM) certification. Recurring Accomplishments: - Determine the minimum hardware refresh of element components and spares that ensure the test capability at AAMDTC remains current to support warfighter needs - Provide system engineering, technical, and logistics support for the AAMDTC facility and tactical elements to ensure appropriate system adaptation, readiness, availability, and effectiveness - Operations of the AAMDTC Weapons System, Computing Infrastructure; Command Control; Communications; Computers and Intelligence, Vertical Launch Systems, and other equipment to ensure the existing system is ready to support Missile Defense System testing Specific and/or unique accomplishments to each FY are as follows:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)	Project (Number/Name) MD68 / AEGIS Ashore		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
FY 2023 Plans: -SEE ABOVE					
FY 2024 Plans: -SEE ABOVE					
FY 2023 to FY 2024 Increase/Decrease Statement: N/A					
Title: Site Activation			19.155	5.218	0.000
Articles:			-	-	-
Description: Provide site design, security; temporary facilities; utilities; administrative communications equipment and services; infrastructure modifications; generator and commercial power; leased vehicles; material handling equipment; generator fuel; supplies, barriers; guard shacks; temporary lighting; transportation of materials and equipment; translators; and emerging requirements as site activation progresses and until sites are transferred to the Navy. Recurring Accomplishments include: - Provide temporary site activation facilities, base operations support, utilities, administrative communications, on-site material handling equipment services, and equipment installation - Fuel for facility commissioning activities, backup generators, and on-site vehicle support - Technical support to facilitate processing facility change proposals and construction modifications - Post-award technical services (structural, mechanical, and electrical) to ensure quality standards and construction schedule is met - Provide HEMP validation and verification testing of the Aegis Ashore facilities					
FY 2023 Plans: -SEE ABOVE					
FY 2024 Plans: -SEE ABOVE					
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects adjustments for prior year carryover and continued program maturation of Site Activation activities as Poland construction nears completion and transitions to the U.S. Navy.					
Accomplishments/Planned Programs Subtotals			38.489	25.448	20.316

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / <i>Land Based SM-3 (LBSM3)</i>	Project (Number/Name) MD68 / <i>AEGIS Ashore</i>
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C. Other Program Funding Summary (\$ in Millions)

			<u>FY 2024</u>	<u>FY 2024</u>	<u>FY 2024</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Complete</u>	<u>Total Cost</u>
• 0208866C MD09: <i>Aegis BMD O&M</i>	77.170	69.071	72.224	-	72.224	85.696	99.209	96.412	93.554	Continuing	Continuing
• 0208866C MD09: <i>Aegis BMD Procurement</i>	334.621	402.235	374.756	-	374.756	372.639	528.486	537.124	550.011	Continuing	Continuing
• 0208866C MD73: <i>Aegis Ashore Phase III Procurement</i>	27.866	30.056	2.390	-	2.390	0.976	0.000	0.000	0.000	0.000	61.288
• 0208866C MD90: <i>Aegis BMD Hardware and Software</i>	79.791	78.181	27.825	-	27.825	44.886	28.442	35.485	31.771	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	628.014	595.572	693.727	-	693.727	639.678	706.974	699.611	733.909	Continuing	Continuing
• 0604878C: <i>Aegis BMD Test</i>	111.206	175.619	193.484	-	193.484	135.473	183.024	203.676	135.080	Continuing	Continuing

Remarks

D. Acquisition Strategy

Operations and maintenance of AAMDTC, to achieve mission success for testing and weapon system support, is accomplished through 3 direct contracts with industry, and 25 Statements of Work (SOW) with 15 Other Government Agencies (OGA). Supporting MDA testing and weapon system development initiatives requires AAMDTC to be well maintained and keep pace with weapon system upgrades.

- Contract #1 - Directed Sole Source to 8(a) Small Business for Mission Critical Support Systems Maintenance
- Contract #2 - Sole Source for Multi-Element Engineering and Integration Team (MEIT), Special Studies, and Design Documentation
- Contract #3 - Competitive for Aegis Combat System Operations and Maintenance

Majority of OGA support comes from:

- NSWCCD - System Engineering and Configuration Management Support
- PMRF - Base Operations Services and Tennant Command Costs
- NAVFAC - Utilities (Power, Water, Sewer)
- NSWC Port Hueneme - In-service Engineering Agent (ISEA)/Logistics Support (replacement parts/hardware upgrades)
- NIWC PAC - C4I and Combat System SMEs

Poland Site Activation goes to Mission Support Program Office and utilizes Naval Facilities Engineering Command (NAVFAC) and U. S. Army Corps of Engineers Europe District (Core of Engineers North Atlantic Union) CENAU to award and administer contracts for base operating support, commercial power, temporary site activation facilities, and integrated electronic security systems.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)	Project (Number/Name) MD68 / AEGIS Ashore
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Aegis Weapon System Development - AWS Development - LM-MD68	SS/CPFF	MDA Lockheed Martin : Moorestown, NJ	58.325	6.082	Nov 2021	5.313	Nov 2022	0.000		-		0.000	0.000	69.720	0.000
Aegis Weapon System Development - AWS Development -MDA Kupono-MD68	SS/CPFF	MDA Kupono : HI	0.000	1.511	Nov 2021	1.728	Nov 2022	0.000		-		0.000	0.000	3.239	0.000
Aegis Weapon System Development - AWS Development – Restoration & Modernization- MD68	Various	Various : Various	0.498	1.243	Nov 2021	0.464	Nov 2022	0.000		-		0.000	0.000	2.205	0.000
Aegis Weapon System Development - AWS Development- MDA-MD68	Allot	MDA : VA	1.076	0.582	Nov 2021	0.000		0.000		-		0.000	0.000	1.658	0.000
Aegis Weapon System Development - AWS Development- NAVFAC- MD68	MIPR	NAVFAC : HI	10.106	2.319	Nov 2021	2.772	Nov 2022	0.000		-		0.000	0.000	15.197	0.000
Aegis Weapon System Development - AWS Development- NAVSEA- MD68	MIPR	NAVSEA-LM/BAE, NAVWAR, NSWCD : San Diego, CA; Baltimore, MD; Minneapolis, MN	20.299	0.431	Nov 2021	0.000		0.000		-		0.000	0.000	20.730	0.000
Aegis Weapon System Development - AWS Development- NAVWAR- MD68	MIPR	NIWC PAC : San Diego, CA	51.367	1.834	Nov 2021	0.598	Nov 2022	0.000		-		0.000	0.000	53.799	0.000
Aegis Weapon System Development - AWS Development- NSWCCrane-MD68	MIPR	NSWC Crane : IN	0.047	0.073	Nov 2021	0.172	Nov 2022	0.000		-		0.000	0.000	0.292	0.000
Aegis Weapon System Development - AWS Development- NSWCDahlgren : MD68	MIPR	NSWC Dahlgren : Dahlgren, VA	52.094	1.518	Nov 2021	2.274	Nov 2022	0.000		-		0.000	0.000	55.886	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)				Project (Number/Name) MD68 / AEGIS Ashore					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Aegis Weapon System Development - AWS Development- NSWG PHD-MD68	MIPR	NSWC PHD, NSWG, DOI, Aegis Techrep : CA, NJ, ID, MD, IN	47.236	1.500	Nov 2021	1.808	Nov 2022	0.000		-		0.000	0.000	50.544	0.000
Aegis Weapon System Development - AWS Development- NSWG-Philadelphia-MD68	MIPR	NSWC Philadelphia : PA	0.249	0.085	Nov 2021	0.163	Nov 2022	0.000		-		0.000	0.000	0.497	0.000
Aegis Weapon System Development - AWS Development- PMRF-MD68	MIPR	PMRF : Hawaii	19.514	1.026	Nov 2021	1.185	Nov 2022	0.000		-		0.000	0.000	21.725	0.000
Aegis Weapon System Development - AWS Development- SSC PAC Pearl Harbor-MD68	MIPR	Naval Warfare Systems Center (NSWC)/(SSC-PAC) : HI	4.362	0.000		1.616	Nov 2022	0.000		-		0.000	0.000	5.978	0.000
Aegis Weapon System Development - AWS Development- Various-MD68	Various	Various : CECOM/ MITRE, JHU/APL, MIT/LL, DOI	838.731	1.130	Nov 2021	2.137	Nov 2022	0.000		-		0.000	0.000	841.998	0.000
Site Activation - DTRA support to construction Romania and Poland-MD68	MIPR	DTRA : Ft. Belvoir, VA	5.566	0.903	Nov 2021	0.000		0.000		-		0.000	0.000	6.469	0.000
Site Activation - IESS Support-MD68	MIPR	USAF LCMC Wright Patterson AFB : OH	0.460	1.323	May 2022	0.000		0.000		-		0.000	0.000	1.783	0.000
Site Activation - Poland Admin Communications-MD68	MIPR	DISA : Scott AFB, IL	3.208	1.703	Nov 2021	0.000		0.000		-		0.000	0.000	4.911	0.000
Site Activation - Poland Base Operating Support-MD68	MIPR	NAVFAC : Poland	18.658	6.158	Nov 2021	5.218	Nov 2022	0.000		-		0.000	0.000	30.034	0.000
Site Activation - Poland Commercial and Temporary Utilities-MD68	MIPR	NAVFAC : Poland	3.201	2.614	Oct 2021	0.000		0.000		-		0.000	0.000	5.815	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)				Project (Number/Name) MD68 / AEGIS Ashore					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Site Activation - Poland Fuel- MD68	MIPR	DLA : Fort Belvoir, Virginia	1.223	1.071	Oct 2021	0.000		0.000		-		0.000	0.000	2.294	0.000
Site Activation - Poland Navy Leases/ Material Handling Services- MD68	MIPR	NAVFAC : Naples Italy	3.158	0.000		0.000		0.000		-		0.000	0.000	3.158	0.000
Site Activation - Romania/ Poland Security Guards / Escorts-MD68	C/FFP	Chenega Infinity : Chantilly, VA	2.778	0.000		0.000		0.000		-		0.000	0.000	2.778	0.000
Site Activation - Transportation of Aegis Weapon System-MD68	MIPR	SDDC : Scotts AFB, IL	5.905	0.837	Nov 2021	0.000		0.000		-		0.000	0.000	6.742	0.000
Site Activation - USACE in-house support in Poland- MD68	MIPR	CEHNC : Huntsville, AL	4.288	0.501	Nov 2021	0.000		0.000		-		0.000	0.000	4.789	0.000
Site Activation - USACE support in Poland- MD68	MIPR	CENAU : Poland	6.241	0.000		0.000		0.000		-		0.000	0.000	6.241	0.000
Site Activation - USACE-Guam	MIPR	DOD - USA - ENGINEERING AND SUPPORT CENTER, HUNTSVILLE (HNC) : AL	0.030	0.000		0.000		0.000		-		0.000	0.000	0.030	0.000
Site Activation - USACE-Guam- MD68	MIPR	DOD - USA - ENGINEERING AND SUPPORT CENTER, HUNTSVILLE (HNC) : AL	0.482	0.000		0.000		0.000		-		0.000	0.000	0.482	0.000
Site Activation - Various-MD68	Various	Various : Various	64.373	4.045	Dec 2021	0.000		0.000		-		0.000	0.000	68.418	0.000
Subtotal			1,223.475	38.489		25.448		0.000		-		0.000	0.000	1,287.412	N/A
Remarks N/A															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)				Project (Number/Name) MD68 / AEGIS Ashore					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Aegis Weapon System Development - AWS Development- MDA/ LM Combat System Engineering, Test Event, and Site Support- MD68	SS/CPFF	LOCKHEED MARTIN CORPORATION : NJ	0.000	0.000		0.000		1.413	Nov 2023	-		1.413	Continuing	Continuing	Continuing
Aegis Weapon System Development - AWS Development- Modernization- MD68	Various	Various : Various	0.000	0.000		0.000		1.730	Nov 2023	-		1.730	Continuing	Continuing	Continuing
Aegis Weapon System Development - AWS Development- PMRF Non-BMDS Range Services- MD68	MIPR	DOD - USN - PACIFIC MISSILE RANGE FACILITY BARKING SANDS (PMRF) : HI	0.000	0.000		0.000		1.002	Nov 2023	-		1.002	Continuing	Continuing	Continuing
Aegis Weapon System Development - AWS Development- Romania HEMP Hardening- MD68	MIPR	TBD : Various	0.000	0.000		0.000		1.679	Nov 2023	-		1.679	Continuing	Continuing	Continuing
Aegis Weapon System Development - AWS Development-MDA/LM AAMDTC Technical and Logistics Support labor- MD68	SS/CPFF	LOCKHEED MARTIN CORPORATION : NJ	0.000	0.000		0.000		2.439	Nov 2023	-		2.439	Continuing	Continuing	Continuing
Aegis Weapon System Development - AWS Development-NAVFAC PMRF- MD68	MIPR	DOD - USN - NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC) HAWAII : HI	0.000	0.000		0.000		1.832	Nov 2023	-		1.832	Continuing	Continuing	Continuing
Aegis Weapon System Development - AWS Development-NSWC DD PMRF- MD68	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) DAHLGREN	0.000	0.000		0.000		1.173	Nov 2023	-		1.173	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)				Project (Number/Name) MD68 / AEGIS Ashore					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		DIVISION (NSWCDD) : VA													
Aegis Weapon System Development - AWS Development-SSC PAC PMRF- MD68	MIPR	DOD - USN - NAVAL INFORMATION WARFARE CENTER (NIWC) PACIFIC : CA	0.000	0.000		0.000		1.117	Nov 2023	-		1.117	Continuing	Continuing	Continuing
Aegis Weapon System Development - Aegis Weapon System Development-Various Restoration & Modernization	Various	Various : Various	0.000	0.000		0.000		1.358	Nov 2023	-		1.358	Continuing	Continuing	Continuing
Aegis Weapon System Development - Aegis Weapon System Development-Various	Various	Various : Various	0.000	0.000		0.000		6.573	Nov 2023	-		6.573	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		20.316		-		20.316	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1,223.475	38.489		25.448		20.316		-		20.316	Continuing	Continuing	N/A
Remarks Funding in the All Prior Years column represents a summary of Prior Years Total Costs for inactive contracts and MIPRs on the R-3. Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023									
Appropriation/Budget Activity								R-1 Program Element (Number/Name)								Project (Number/Name)							
0400 / 4								PE 0604880C / Land Based SM-3 (LBSM3)								MD68 / AEGIS Ashore							
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028			
EPAA Phase III Technical Capability Declaration (TCD)												◇											
Poland Construction Complete												◇											
Poland Beneficial Occupancy Date (BOD)												◇											
AAMDTC Maintenance and Upgrades								◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	
Integrated Master Test Plan (IMTP)								◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
AAMDTC Operations and Test												◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)	Project (Number/Name) MD68 / AEGIS Ashore	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
EPAA Phase III Technical Capability Declaration (TCD)	2	2023	2	2023
Poland Construction Complete	3	2023	3	2023
Poland Beneficial Occupancy Date (BOD)	3	2023	3	2023
AAMDTC Maintenance and Upgrades	1	2022	4	2028
Integrated Master Test Plan (IMTP)	1	2022	4	2028
AAMDTC Operations and Test	1	2023	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)				Project (Number/Name) MC68 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC68: Cyber Operations	9.000	1.047	1.225	1.233	-	1.233	1.241	1.265	1.290	1.290	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note N/A												
A. Mission Description and Budget Item Justification Sustain Missile Defense Agency (MDA) DoD Information Assurance Certification and Accreditation Program (DIACAP) and Controls Validation Testing (CVT) activities, analysis of validation results, risk assessments and reviews of proposed Program Manager/Information Assurance Manager Plans of Action and Milestones for MDA Aegis BMD mission systems. It maintains the Certification and Accreditation (C&A) data repository, capturing the DIACAP documentation (artifacts, validation results, and Information Assurance Risk Assessment results, and Designated Approving Authority (DAA) accreditation decisions) on all MDA Information Systems.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024	
Title: Network / System Certification and Accreditation (C&A) Articles: Description: Monitor and track cybersecurity mitigation detailed in Information Technology Security Guidance. Activities include preparation of C&A documentation and accreditation recommendations to the MDA Senior Information Assurance Officer /Certification Authority 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 Systems Management Act. Recurring Accomplishments: - Provide Cybersecurity engineering and architecture requirements planning for Aegis BMD systems - Coordinate the development and implementation of Aegis BMD Risk Management Framework (RMF) accreditation packages - Conduct regular CVT of Aegis BMD systems and provide a Risk Assessment Report to mitigate cybersecurity deficiencies - Conduct annual cybersecurity reviews on the Aegis BMD systems to assess compliance in implementing and maintaining RMF controls - Implement hardware/software to conduct continuous daily monitoring - Conduct monthly reviews of systems in eMass - Provide daily management of eMass Specific and/or unique accomplishments to each FY are as follows: FY 2023 Plans:									1.047	1.225	1.233	
									-	-	-	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / <i>Land Based SM-3 (LBSM3)</i>	Project (Number/Name) MC68 / <i>Cyber Operations</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
- SEE ABOVE FY 2024 Plans: - SEE ABOVE FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals		1.047	1.225
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
Aegis Ashore primarily achieves the cybersecurity mission through OGA SOWs with NIWC PAC and NSWC Philadelphia, to implement cybersecurity best practices, assist with authorizations to connect and operate connected systems, install system patches and upgrade software, support cyber testing and analysis, and ensuring mandatory cyber clauses are included and enforced on contracts.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
0400 / 4						PE 0604880C / Land Based SM-3 (LBSM3)				MC68 / Cyber Operations					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - Cyber Operations-PMRF- MC68	MIPR	PMRF : HI	0.252	0.229	Nov 2021	0.150	Nov 2022	0.000		-		0.000	0.000	0.631	0.000
Network / System Certification and Accreditation (C&A) - Lockheed Martin- MC68	C/CPFF	Lockheed Martin : Moorestown, NJ	0.048	0.000		0.000		0.000		-		0.000	0.000	0.048	0.000
Network / System Certification and Accreditation (C&A) - NAVSEA- MC68	MIPR	NAVSEA : Washington, DC	1.843	0.000		0.000		0.000		-		0.000	0.000	1.843	0.000
Network / System Certification and Accreditation (C&A) - NAVWAR- MC68	MIPR	DOD - USN - NAVAL INFORMATION WARFARE SYSTEMS COMMAND (NAVWAR) : CA	4.349	0.695	Nov 2021	0.939	Nov 2022	0.000		-		0.000	0.000	5.983	0.000
Network / System Certification and Accreditation (C&A) - NSWC Corona- MC68	MIPR	NSWC Corona : CA	0.250	0.000		0.000		0.000		-		0.000	0.000	0.250	0.000
Network / System Certification and Accreditation (C&A) - NSWC Philadelphia- MC68	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) PHILADELPHIA DIVISION (NSWCPD) : PA	2.258	0.123	Nov 2021	0.136	Nov 2022	0.000		-		0.000	0.000	2.517	0.000
Subtotal			9.000	1.047		1.225		0.000		-		0.000	0.000	11.272	N/A
Remarks															
N/A															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)				Project (Number/Name) MC68 / Cyber Operations					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - Various-Network/ System Certification and Accreditation	Various	Various : TBD	0.000	0.000		0.000		1.233	Nov 2023	-		1.233	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		1.233		-		1.233	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			9.000	1.047		1.225		1.233		-		1.233	Continuing	Continuing	N/A
Remarks Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																							
Appropriation/Budget Activity										R-1 Program Element (Number/Name)										Project (Number/Name)																	
0400 / 4										PE 0604880C / Land Based SM-3 (LBSM3)										MC68 / Cyber Operations																	
Significant Event Complete ▲					Milestone Decision Complete ★					Element Test Complete ◆					System Level Test Complete ●					Complete Activity ◆																	
Significant Event Planned △					Milestone Decision Planned ☆					Element Test Planned ◇					System Level Test Planned ○					Planned Activity ◇																	
										FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
Cyber Operations										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)	
0400 / 4	PE 0604880C / Land Based SM-3 (LBSM3)	MC68 / Cyber Operations	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Cyber Operations	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program-Wide Support	45.298	2.620	1.005	0.614	-	0.614	0.737	0.856	0.877	0.964	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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	2.620	1.005	0.614
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / <i>Land Based SM-3 (LBSM3)</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
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.			
FY 2023 Plans: - SEE ABOVE.			
FY 2024 Plans: - SEE ABOVE.			
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects the PWS allocation on a pro-rata basis across multiple Agency PE's each fiscal year based on the total Agency budget, and therefore fluctuates per PE by fiscal year.			
Accomplishments/Planned Programs Subtotals		2.620	1.005
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services (A&AS) support.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
0400 / 4						PE 0604880C / Land Based SM-3 (LBSM3)				MD40 / Program-Wide Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations Management	Various	Various: Multi : AL, CA, CO, VA	2.286	0.055	Apr 2022	0.000		0.000		-		0.000	0.000	2.341	0.000
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various : Various	15.928	0.000		0.000		0.000		-		0.000	0.000	15.928	0.000
Subtotal			18.214	0.055		0.000		0.000		-		0.000	0.000	18.269	N/A
Remarks															
N/A															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations and Support Services	C/CPFF	CHENEGA : AL	27.084	2.565	Nov 2021	1.005	Nov 2022	0.614	Nov 2023	-		0.614	Continuing	Continuing	Continuing
Subtotal			27.084	2.565		1.005		0.614		-		0.614	Continuing	Continuing	N/A
Remarks															
N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			45.298	2.620		1.005		0.614		-		0.614	Continuing	Continuing	N/A
Remarks															
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)	Project (Number/Name) MD40 / Program-Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604887C / <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	515.869	61.424	84.075	41.824	-	41.824	40.284	58.043	123.579	100.278	Continuing	Continuing
MT08: <i>Midcourse Test</i>	497.584	59.503	80.114	40.160	-	40.160	38.834	55.698	118.565	95.831	Continuing	Continuing
MD40: <i>Program Wide Support</i>	18.285	1.921	3.961	1.664	-	1.664	1.450	2.345	5.014	4.447	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

The decrease from FY 2023 to FY 2024 is in accordance with the current Missile Defense System Integrated Master Test Plan (IMTP). The decrease also reflects the transfer of development labs and development support for Prime Contractor Integration Lab and Objective Stimulation Framework from this Program Element (PE) to the GMD Midcourse PE 0603882C. In addition, the decrease reflects efficiencies from the competitive award of the GMD Weapon System (GWS) and the System Integration, Test, and Readiness (SITR) contracts.

A. Mission Description and Budget Item Justification

Ballistic Missile Defense (BMD) Midcourse Defense Segment Test provides flight, ground, and cyber testing of GMD functionality to demonstrate Homeland Defense capabilities against allocated threats. The GMD Element is tested in an integrated environment with Missile Defense System sensors; Command and Control, Battle Management, and Communications; Warfighters; and national collection assets to assess the ability to defend the United States and its territories against ballistic missiles.

Primary activities include GMD Flight Test Execution, Ground Test Execution, Cyber Test Execution, Resources, and Program Operations. BMD Midcourse Test provides day-to-day operations of the GMD Test program to include engineering support for test planning, execution, and post-event reconstruction. GMD flight tests provide the opportunity to test actual hardware and to demonstrate Missile Defense System Element interoperability under operationally realistic conditions. GMD ground tests are executed both in the Hardware-in-the-Loop (HWIL) lab environment and in the field, and provide performance assessments for GMD fielding decisions. GMD cyber tests are executed both in the HWIL lab environment and in the field, and provide GMD cyber, operational resilience, and system survivability assessments. GMD Test Resources provides the infrastructure and laboratories to support the GMD Test program. Program Operations provides for government management and support of the GMD Test program.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test
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B. Program Change Summary (\$ in Millions)	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	61.424	84.075	73.920	-	73.920
Current President's Budget	61.424	84.075	41.824	-	41.824
Total Adjustments	0.000	0.000	-32.096	-	-32.096
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	-32.096	-	-32.096

Change Summary Explanation

The decrease in FY 2024 is in accordance with the current Missile Defense System IMTP, reflects the transfer of development labs and development support for Prime Contractor Integration Lab and Objective Stimulation Framework from this Program Element (PE) to the GMD Midcourse PE 0603882, and reflects adjustments for the award of the GWS and Sitr contracts.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test				Project (Number/Name) MT08 / Midcourse Test			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MT08: Midcourse Test	497.584	59.503	80.114	40.160	-	40.160	38.834	55.698	118.565	95.831	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note												
The decrease from FY 2023 to FY 2024 is in accordance with the current Missile Defense System Integrated Master Test Plan (IMTP). The decrease also reflects transfer of development labs and development support for Prime Contractor Integration Lab (PCIL) and Objective Stimulation Framework (OSF) from this Program Element (PE) to the GMD Midcourse PE 0603882C. In addition, the decrease reflects efficiencies from the competitive award of the GMD Weapon System (GWS) and the System Integration, Test, and Readiness (SITR) contracts.												
A. Mission Description and Budget Item Justification												
Ballistic Missile Defense (BMD) Midcourse Defense Segment Test provides flight, ground, and cyber testing of Ground Based Midcourse Defense (GMD) functionality to demonstrate Homeland Defense capabilities against allocated threats. The GMD Element is tested in an integrated environment with MDS sensors; Command and Control, Battle Management, and Communications; Warfighters; and national collection assets to assess the ability to defend the United States and its territories against ballistic missiles.												
Primary activities include GMD Flight Test Execution, Ground Test Execution, Cyber Test Execution, Resources, and Program Operations. BMD Midcourse Test provides day-to-day operations of the GMD Test program to include engineering support for test planning, execution, and post-event reconstruction. GMD flight tests provide the opportunity to test actual hardware and to demonstrate MDS Element interoperability under operationally realistic conditions. GMD ground tests are executed both in the Hardware-in-the-Loop (HWIL) lab environment and in the field, and provide performance assessments for GMD fielding decisions. GMD cyber tests are executed both in the HWIL lab environment and in the field, and provide GMD cyber, operational resilience, and system survivability assessments. GMD Test Resources provides the infrastructure and laboratories to support the GMD Test program. Program Operations provides for government management and support of the GMD Test program.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024	
Title: Resources									26.232	19.272	15.294	
									Articles: -	-	-	
Description: Provides day-to-day operations of the GMD Test program to include engineering support for test planning, execution, and post-event reconstruction.												
Recurring efforts include: -Provide GMD System Test Laboratory environments to support hardware and software testing prior to entry into Missile Defense System level tests												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604887C / <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>	Project (Number/Name) MT08 / <i>Midcourse Test</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>-Provide infrastructure and support for execution of tests requested by the Warfighter to enhance doctrine and Tactics, Techniques and Procedures (TTP), and tests of opportunity presented by real world events and Missile Defense System/external test activities</p> <p>-Provides test infrastructure and coordination of flight test range support from Vandenberg Space Force Base (VSFB), California, for all range activities, engineering, operators, and Ground Based Interceptor transportation</p> <p>-Provides command and control and situational awareness for the GMD test events at the Missile Defense Agency (MDA) Integration and Operations Center (MDIOC) in Colorado Springs, Colorado and the Readiness and Control Facility in Ft. Greely, Alaska</p> <p>-Provides test communication plans, test communication control, satellite communication bandwidth, test network certification, and accreditation for GMD tests to integrate the range in VSFB, California, MDIOC in Colorado Springs, Colorado, Ft. Greely, Alaska, and Pacific Missile Range Facility (PMRF) in Hawaii</p> <p>-Provides engineering, operations, and maintenance of the integrated System Test Labs in Huntsville, Alabama, to conduct Missile Defense System flight test pre-mission risk reduction and Missile Defense System level ground testing for fielding Warfighter capabilities that defend the Homeland</p> <p>-Provides equipment upgrades at VSFB and the MDIOC for test support systems</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <p>-Provide the infrastructure and support for FTG-12, MDS ground tests, and cyber test execution and data collection to support performance evaluation of GMD Increment 6 Homeland Defense capabilities</p> <p>-Provide prime contract program management of the System Integration, Test, and Readiness (SITR) contract test activities and enable smooth transition for flight, ground, and cyber testing from the Development and Sustainment Contract (DSC) to the SITR contract.</p> <p>FY 2024 Plans:</p> <p>-Continues the infrastructure and support for post-mission analysis for FTG-12, Missile Defense System ground tests, and cyber test execution and data collection to support performance evaluation of GMD Increment 6B Homeland Defense capabilities</p> <p>-Continues transition for flight, ground, and cyber testing from the DSC to the SITR contract</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>The decrease from FY 2023 to FY 2024 reflects the transfer of development labs and development support for PCIL and OSF from this PE to the GMD Midcourse PE 0603882C.</p>			
Title: Flight Test Execution		7.361	48.110
Articles:		-	-
			1.313
			-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604887C / <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>	Project (Number/Name) MT08 / <i>Midcourse Test</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>Description: Flight tests demonstrate the capabilities and/or phenomenology that cannot be adequately tested or obtained during ground testing. Flight tests also provide opportunities to test actual hardware and to demonstrate Missile Defense System Element interoperability under operationally realistic conditions. This accomplishment area provides the Industry and Government personnel for planning, integration, execution, and analysis for Missile Defense System Homeland Defense flight tests.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> -Continue planning FTG-12. This flight test mission demonstrates MDS Increment 6B Homeland Defense functionality upgrades in a GMD intercept flight test using a Ground Based Interceptor with a 2-/3-Stage Selectable Configuration 2 (C2) Booster and a CE-II Block 1 Exo-atmospheric Kill Vehicle (EKV) in an engagement of an Intermediate-Range Ballistic Missile (IRBM) with countermeasures (CMs) launched from VSFB, California. -Complete GTI-08a (N/I), GTI-08a (N/I) Part 2, and GTD-08a (N/I) for Increment 6B.1 Capabilities -Begin planning of GT-08b (N/I) Campaign, and detailed planning, integration, and start of test execution of GTI-08b (N/I) -Transition for flight, ground, and cyber testing from DSC to Future Contracts <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> -Complete post-test analysis of Flight Test Other (FTX)-26. This is a non-intercept Operational Test demonstrating the Long Range Discrimination Radar (LRDR) Increment 6B capabilities. GMD will test fire control capabilities by receiving and processing LRDR track and discrimination results passed from C2BMC to GMD Fire Control in order to conduct a simulated engagement against an ICBM-representative target with countermeasures. -Conduct post-test analysis of FTG-12. This flight test mission demonstrates Missile Defense System Increment 6B Homeland Defense functionality upgrades in a GMD intercept flight test using a Ground Based Interceptor with a 2-/3-Stage Selectable Configuration 2 Booster and a Capability Enhancement (CE)-II Block 1 EKV in an engagement of an IRBM with CMs launched from VSFB, California. -Completes flight testing on the DSC and continues transition to the GWS and SITR contracts. <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>The decrease from FY 2023 to FY 2024 is in accordance with the current Missile Defense System IMTP.</p>			
<p>Title: Ground Test Execution</p> <p align="right">Articles:</p> <p>Description: Ground tests demonstrate and validate Warfighter TTPs and provide performance assessments for fielding decisions. Ground tests are executed both in the HWIL lab and in the field. HWIL lab tests integrate and assess Missile Defense System level performance based on new Element capabilities. Ground tests in the field use existing fielded Element assets</p>		16.990 -	3.899 -
		14.131 -	

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604887C / <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>	Project (Number/Name) MT08 / <i>Midcourse Test</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>and tactical communication networks, to integrate, assess and demonstrate the Element capabilities. Cyber tests provide cyber resiliency capabilities and vulnerabilities assessments. This accomplishment area provides the Industry and Government personnel for planning, integration, execution, and analysis for Missile Defense System Homeland Defense ground and cyber tests.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> -Conduct pre-mission analysis, integration, execution and post-mission analysis for Cyber Test events to support Missile Defense System weapon system fielding and operational acceptance -Conduct pre-mission analysis, integration and execution and post-mission analysis of GTI-08b (N/I) for Operational Assessment (OA) of performance for Increment 6B.2 Operational Capability. This event provides data to support fielding for the Missile Defense System Increment 6B.2 capability which includes EKV 11 with improved discrimination capability and Space-based Kill Assessment (SKA) -Conduct pre-mission analysis of GTD-08b (N/I) for OA of performance for Increment 6B.2 Operational Capability. This event provides data to support fielding for the Missile Defense System Increment 6B.2 capability which includes EKV 11 with improved discrimination capability and SKA -Support and participate in the continued MDA transition to the new IMTP future ground test CONOPs approach. This approach supports more agile fielding, as components of the Missile Defense System are ready to integrate and test, than conducting a single major test event when all Missile Defense System components are ready <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> -Continue execution and post-mission analysis of Ground Test Integrated (GTI)-08b (N/I) and conduct planning, integration, execution, and post-mission analysis of GTD-08b (N/I) for OA of performance for Increment 6B.2 Operational Capability. This event provides data to support fielding for the Missile Defense System Increment 6B.2 capability which includes EKV 11 with improved discrimination capability and SKA. -Conduct planning, integration, and execution of GTI-13 Sprint 1 Northern Command /Indo-Pacific Command (N/I) for OA of performance for Increment 6C/7 Operational Capability. These events provide data to support fielding for the Missile Defense System Increment 6C/7 capability which includes C2BMC provided BMD System Track for GMD Homeland Defense Engagements and Expanded Active Sensor Bias and Full Reporting. Note: GTI-13 Sprint 1 will be the first GMD ground test to participate in the MDA transition to the new ground test Concept of Operations (CONOPs) approach. This approach supports more agile fielding as components of the Missile Defense System are ready to integrate and test rather than conducting a single major test event when all Missile Defense System components are ready. 			

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604887C / <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>	Project (Number/Name) MT08 / <i>Midcourse Test</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>-Continue pre-mission analysis, integration, execution and post-mission analysis for Cyber Test events to support Missile Defense System weapon system fielding and operational acceptance.</p> <p>-Support and participate in the continued MDA transition to full implementation of the CONOPS supporting the Ground Test Sprint events. The Ground Test Sprint events support more agile fielding as individual components of the Missile Defense System are ready to integrate and test, compared to conducting a single major test event when all Missile Defense System components are ready.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: The increase from FY 2023 to FY 2024 is in accordance with the current IMTP and Ground Test Re-plan. The increase from FY 2023 to FY 2024 provides for ground and cyber test Contract Line Item Number extensions and for the full implementation of the CONOPS supporting the Ground Test Sprint events starting with the GT-13 Campaign.</p>			
<p>Title: Program Operations</p> <p align="right">Articles:</p> <p>Description: Program Operations provides for Government management of the GMD Test program. This effort includes program and business management support activities, financial management, cost and schedule performance analyses, cost estimation and analyses, configuration management, and integration. It also includes activities to provide critical program status and decision quality data and GMD test program compliance with internal and external direction, policies, and regulations to deliver critical capability within a consistent and disciplined process and technical and testing oversight, quality/safety/mission assurance, integrated logistics support, and government manpower and infrastructure to test the GMD system and components.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: - SEE ABOVE</p> <p>FY 2024 Plans: - SEE ABOVE</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>		8.920 -	8.833 -
Accomplishments/Planned Programs Subtotals		59.503	40.160

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test					Project (Number/Name) MT08 / Midcourse Test			
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• 0208866C: MD08: GMD Procurement	0.000	11.300	0.000	-	0.000	30.971	36.243	34.833	18.978	Continuing	Continuing	
• 0208866C: MD08: Midcourse Defense O&M	156.623	185.564	174.789	-	174.789	178.467	161.429	132.557	206.311	Continuing	Continuing	
• 0603882C: Ballistic Missile Defense Midcourse Defense Segment	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing	
• 0604874C: Improved Homeland Defense Interceptors	863.364	1,833.357	2,105.957	-	2,105.957	2,113.814	1,443.962	1,244.376	1,026.370	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
<p>The GMD program will continue to execute testing, development, and evolutionary acquisition through incremental development. The Agency acquisition strategy ensures Ground-Based Midcourse Defense components are upgraded to improve both Ground-Based Midcourse Defense Component performance and GMD Element performance in order to retain the proven GMD contribution to the Missile Defense System. This acquisition approach reduces obsolescence risk, provides incremental capability improvements, and allows decision makers to make informed trades between cost, schedule, and performance while rapidly delivering improved operational and technological capabilities.</p>												
<p>MDA competitively awarded the Development and Sustainment Contract (DSC) to The Boeing Company in December 2011. This contract included development, fielding, test, systems engineering, integration, and configuration management; equipment manufacturing and upgrade; training, operations, and sustainment of the GMD Element and associated support facilities. In January 2018, the DSC was extended with a new period of performance through 1Q FY 2024. The DSC Extension includes supporting test, engineering, software, and performance-based logistics scope. In 2022, the MDA Ground Test (GT) Re-plan resulted in the extension of minimal contract line items to support testing, engineering, hardware and software until December 2024; while performance-based logistics will transition to a new contract after December 2023. The DSC structure breaks out major efforts into separate Contract Line Item Numbers with individual incentives for management insight, accounting, and property accountability.</p>												
<p>The DSC prime contractor is responsible for a majority of the GMD scope through delivery of Missile Defense System Increment 6B.2. GMD's current DSC period of performance ends in December 2023 for general scope with select contract line items remaining open until December 2024 to allow the prime contractor to complete the delivery of Missile Defense System Increment 6B.2.</p>												
<p>GMD implemented a robust Program Board structure allowing more Government insight and decisions into the technical baseline and has changed business processes for greater Government involvement in program decisions consistent with the Government's ownership of the technical baseline. In addition, GMD utilizes Government</p>												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604887C / <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>	Project (Number/Name) MT08 / <i>Midcourse Test</i>
<p>laboratory modeling and simulation and analysis capabilities to augment the current DSC efforts. These efforts utilize existing, competitively awarded contracts by MDA and Other Government Agencies including VSFB, CA; MDIOC; U.S. Army Combat Capabilities Development Command Aviation & Missile Center (formerly known as U.S. Army Aviation and Missile Research, Development and Engineering Center); and Pacific Missile Range Facility, HI.</p> <p>New GMD Contracts will satisfy future GMD Element requirements beyond DSC's support and Missile Defense System Increment 6B.2. The new contracts initiate and execute concurrently with the DSC and provide for transition periods while the DSC scope is completing to provide continuity of effort. Each of the new contracts is structured to break out major efforts into separate Contract Line Item Numbers with individual incentives for management insight, accounting and property accountability.</p> <p>MDA competitively awarded two best value contracts on March 24, 2021 to Lockheed Martin and Northrop Grumman for technology and product development of Next Generation Interceptor and plans to maintain competition through the Critical Design Review in FY 2025 to reduce technical risk, drive industry behavior(s) through retention of a competitive environment throughout early design development activities, secure competitive production pricing, and support the Department's ability to field a system capable of negating the expanded threat, as well as, maximize the likelihood of delivering this critical capability at the earliest possible opportunity.</p> <p>MDA awarded/plans to award sole source contracts to the GMD's Ground Based Interceptor In-Service Fleet (ISF) original equipment manufacturers to perform service life extensions and maintain the existing fleet, execute repairs, and develop software. These contracts are intended primarily to ensure fleet viability until replacement interceptors (Next Generation Interceptor) are fielded. ISF is constrained to the legacy interceptor fleet and its component boosters and kill vehicles. The Boost Vehicle Sustainment Contract was awarded to Northrop Grumman in September 2021. The EKV Sustainment Contract is planned for award to Raytheon Missile Systems in FY 2023. The Ground Based Interceptor Integration and Test Contract is planned for award to Boeing in FY 2024.</p> <p>The GMD Weapon System Contract was competitively awarded to Northrop Grumman Systems Corporation in July 2022 to provide design, development, production, product level testing, sustainment planning, and deployment of new capabilities for the Weapon System. The GWS contractor is responsible for developing weapon system solutions, including fire control and communication systems improvements, required updates to the legacy system to remain effective while Next Generation Interceptors is under development, as well as, preparing for the seamless introduction of Next Generation Interceptor and other future Missile Defense System capabilities. The GWS contract will update the system interface for the addition of Next Generation Interceptors to the fleet, provide the Warfighter capability to operate the GMD Weapon System with a mixed fleet of Ground Based Interceptors and Next Generation Interceptors, and identify and develop solutions for message exchanges between the GMD Weapon System and in-flight kill vehicles. All of this must be accomplished while maintaining a robust cyber defense network capable of detecting and defending against current and future cybersecurity threats.</p> <p>GMD competitively awarded a single SITR Contract to provide, along with the Technical Direction Agent, a synergistic approach in executing the GMD Element-level engineering, integration, test, and readiness of the GMD Weapon System. The SITR contractor is charged with being the Government's technical partner for day-to-day operation and sustainment of the GMD Weapon System alongside the United States Northern Command Warfighters. While the Government maintains overall system integration responsibilities and authority, the SITR contractor will assume a supporting technical role responsible for ensuring overall GMD integration including physical and logical integration of the GMD Components, GMD Element, and MDA enterprise level integration, planning and execution of all necessary testing to verify and validate overall requirements compliance.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test	Project (Number/Name) MT08 / Midcourse Test
<p>GMD Increment 6C, 10, and 11 will be executed with the SITR and GWS contracts. The SITR Contract was awarded 4Q FY 2022.</p> <p>GMD also uses MDA Consolidated Support contracts for Engineering and technical support; studies, analyses, and evaluations; and management and professional services to GMD functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing MDA Consolidated Support contracts and will utilize MDA competitively awarded new contracts to acquire Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Mi dcourse Defense Segment Test				Project (Number/Name) MT08 / Midcourse Test					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - Civilian Travel (MDA)	Allot	MDA : AL	0.261	0.263	Oct 2021	0.268	Oct 2022	0.281	Oct 2023	-		0.281	Continuing	Continuing	Continuing
Program Operations - Contract Support Services	C/CPFF	Various AL/AK/ : CA/ CO/VA	28.564	0.000		0.000		0.000		-		0.000	0.000	28.564	0.000
Program Operations - Government Civilian Salaries	Allot	MDA AL/ : VA	23.950	4.158	Oct 2021	4.032	Oct 2022	4.360	Oct 2023	-		4.360	Continuing	Continuing	Continuing
Subtotal			52.775	4.421		4.300		4.641		-		4.641	Continuing	Continuing	N/A
Remarks															
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Resources - Cyber Security - Advanced Research Center Cyber Support	C/IDIQ	COLSA Corp : AL	4.162	0.000		0.000		0.000		-		0.000	0.000	4.162	0.000
Resources - Cyber Security - NSITE/GT Communications	MIPR	Army CCDC Aviation & Missile Center : AL	0.138	0.000		0.000		0.000		-		0.000	0.000	0.138	0.000
Resources - Cyber Win10 Implementation - MDDC Lab Analysis Infrastructure	C/IDIQ	Analytical Services, In. : AI	1.449	0.000		0.000		0.000		-		0.000	0.000	1.449	0.000
Resources - DT Government Infrastructure Support, Labs, and Communications	MIPR	DOD - USSF - VANDENBERG AIR FORCE BASE (VANDENBERG AFB) : CA	12.080	0.000		0.000		0.000		-		0.000	0.000	12.080	12.080
Resources - Engineering & Analysis - Industry Support	C/CPAF	Boeing : AL	4.221	0.000		0.000		0.000		-		0.000	0.000	4.221	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Mi dcourse Defense Segment Test					Project (Number/Name) MT08 / Midcourse Test				
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Resources - Engineering & Analysis - OGA Support	MIPR	Army CCDC Aviation & Missile Center : AL	4.098	0.000		0.000		0.000		-		0.000	0.000	4.098	0.000
Resources - GMD Government Infrastructure Support, Labs, and Communications - CCDC	MIPR	USA CCDC AVIATION AND MISSILE CENTE : AL	0.000	0.000		6.429	Jan 2023	1.463	Jan 2024	-		1.463	Continuing	Continuing	Continuing
Resources - GMD Government Infrastructure Support, Labs, and Communications - Defense Information System Agency (DISA)	MIPR	DOD - DEFENSE INFORMATION SYSTEMS AGENCY (DISA) : TBD	0.000	0.000		0.000		0.295	Jan 2024	-		0.295	Continuing	Continuing	Continuing
Resources - GMD Government Infrastructure Support, Labs, and Communications - VSFB	MIPR	Vandenberg AFB : TBD	0.000	0.000		2.043	Jan 2023	2.690	Jan 2024	-		2.690	Continuing	Continuing	Continuing
Resources - GMD Government Infrastructure Support, Labs, and Communications - Various	MIPR	Various : CA/AL/CO/ AK/HI	54.129	9.818	Nov 2021	0.000		0.000		-		0.000	0.000	63.947	0.000
Resources - Prime Infrastructure Support, Labs, and Communications - DSC	C/CPAF	Boeing : AL/AK/AZ/ CA/CO/OR/TX/VA	65.137	16.386	Nov 2021	0.000		2.674	Nov 2023	-		2.674	Continuing	Continuing	Continuing
Resources - Prime Infrastructure Support, Labs, and Communications - SITR	C/CPAF	BOEING : AL	0.000	0.028	Aug 2022	10.800	Nov 2022	8.172	Nov 2023	-		8.172	Continuing	Continuing	Continuing
Flight Test Execution - Range, Resources, and Engineering - ANALYTICAL SERVICES, INC.	C/CPAF	ANALYTICAL SERVICES, INC. : AL	0.000	0.000		1.033	Nov 2022	0.000		-		0.000	0.000	1.033	0.000
Flight Test Execution - Range, Resources, and	MIPR	Army Space and Missile	0.000	0.000		2.273	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604887C / <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>						Project (Number/Name) MT08 / <i>Midcourse Test</i>			
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Engineering - Army Space and Missile Defense Command (USASMDC)		Defense Command (USASMDC) : AL													
Flight Test Execution - Range, Resources, and Engineering - Department of Transportation (DOT)	MIPR	DOT - DEPARTMENT OF TRANSPORTATION (DOT) : Various	0.000	0.000		7.966	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing
Flight Test Execution - Range, Resources, and Engineering - L-3 COMMUNICATIONS CORPORATION	C/CPAF	L-3 COMMUNICATIONS CORPORATION : Various	0.000	0.000		1.556	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Flight Test Execution - Range, Resources, and Engineering - Naval Air Warfare Center (NAWC)/ Pax River	MIPR	DOD - USN - NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION (NAWCAD), PAX RIVER : MD	0.000	0.000		1.489	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing
Flight Test Execution - Range, Resources, and Engineering - Range, Resources, and Engineering - Various	Various	Various : Various	0.000	0.000		1.217	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Flight Test Execution - Range, Resources, and Engineering - VSFB	MIPR	Vandenberg AFB : CA	0.000	0.000		5.576	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing
Flight Test Execution - Range, Resources, and Engineering - Various	MIPR	VAFB/PMRF, LLL, MIT, Sandia, Northrop Grumman, L3, Analytical Serv, NAWC, NRL, NSWC, CCDC, USASMDC, Dept of Transp Maritime Admin : AL, AK, CA, CO, HI, NM, MD	77.252	0.000		0.000		0.000		-		0.000	0.000	77.252	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Mi dcourse Defense Segment Test				Project (Number/Name) MT08 / Midcourse Test					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Flight Test Execution - Range, Resources, and Engineering- White Sands Missile Range (WSMR)	MIPR	DOD - USA - WHITE SANDS MISSILE RANGE (WSMR) : NM	0.000	0.000		1.223	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing
Flight Test Execution - Test Planning, Test Execution, and Post-Test Silo Repair - DSC	C/CPAF	BOEING : AL/AK/AZ/ CA/CO/OR/TX/VA/ TBD	143.785	7.361	Nov 2021	25.777	Nov 2022	1.313	Nov 2023	-		1.313	Continuing	Continuing	Continuing
Ground Test Execution - Cybersecurity Testing - GWS	C/IDIQ	NORTHROP GRUMMAN : AL	0.000	0.000		0.000		1.241	Nov 2023	-		1.241	Continuing	Continuing	Continuing
Ground Test Execution - Cybersecurity Testing - SITR	C/CPAF	BOEING : AL	0.000	0.000		0.000		1.523	Nov 2023	-		1.523	Continuing	Continuing	Continuing
Ground Test Execution - Cybersecurity Testing - DSC	C/CPFF	Boeing : AL, AK, AZ, CA, CO, OR, TX, VA	26.329	7.769	Nov 2021	3.268	Nov 2022	0.683	Nov 2023	-		0.683	Continuing	Continuing	Continuing
Ground Test Execution - Ground Test Sprints - DSC	C/CPFF	Boeing : AL, AK, AZ, CA, CO, OR, TX, VA	7.559	9.221	Nov 2021	0.631	Nov 2022	0.792	Nov 2023	-		0.792	Continuing	Continuing	Continuing
Ground Test Execution - Ground Test Sprints - GWS	C/IDIQ	NORTHROP GRUMMAN : AL	0.000	0.000		0.000		6.035	Nov 2023	-		6.035	Continuing	Continuing	Continuing
Ground Test Execution - Ground Test Sprints - SITR	C/CPAF	BOEING : AL	0.000	0.000		0.000		3.857	Nov 2023	-		3.857	Continuing	Continuing	Continuing
Ground Test Execution - Ground Test-04 Campaign	C/CPAF	Boeing : AL/AK/AZ/ CA/CO/TX/VA	3.355	0.000		0.000		0.000		-		0.000	0.000	3.355	0.000
Ground Test Execution - Ground Test-06 Campaign	C/CPAF	Boeing : AL/AK/AZ/ CA/CO/TX/VA	8.163	0.000		0.000		0.000		-		0.000	0.000	8.163	0.000
Ground Test Execution - Ground Test-07 Campaign	C/CPAF	Boeing : AL/AK/AZ/ CA/CO/TX/VA	25.648	0.000		0.000		0.000		-		0.000	0.000	25.648	0.000
Ground Test Execution - Ground Test-08 Campaign	C/CPAF	Boeing : AL/AK/AZ/ CA/CO/TX/VA	7.304	0.000		0.000		0.000		-		0.000	0.000	7.304	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test				Project (Number/Name) MT08 / Midcourse Test					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			444.809	50.583		71.281		30.738		-		30.738	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year. FY 2024 request has been adjusted to reflect FY 2023 carryover.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - Contract Support Services - MILLENNIUM	C/CPIF	MILLENNIUM CORPORATION : AL	0.000	4.499	Oct 2021	4.533	Nov 2022	4.781	Nov 2023	-		4.781	Continuing	Continuing	Continuing
Subtotal			0.000	4.499		4.533		4.781		-		4.781	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			497.584	59.503		80.114		40.160		-		40.160	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency																Date: March 2023											
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test										Project (Number/Name) MT08 / Midcourse Test							
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028					
Element Cyber Testing										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
GTI-08a (N/I) (Missile Defense System Ground Test)												◆															
GTD-08a (N/I) (Missile Defense System Ground Test)													◆														
AA-08a (N/I) (Missile Defense System Cybersecurity Test)													●														
CVPA-08a (N/I) (Missile Defense System Cybersecurity Test)													●														
CVPA-08b Part 1 (N/I) (Missile Defense System Cybersecurity Test)														◇													
FTX-26 (OT) (SN, OT Target Only Flight Test)														△													
GTI-08b (N/I)														◇													
FTG-12 (GM, DT/OT Intercept Flight Test)															△												
CVPA-08b Part 2 (N/I) (Missile Defense System Cybersecurity Test)															◇												
AA-08b (N/I) (Missile Defense System Cybersecurity Test)															◇												
GTD-08b (N/I)															◇												
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)																◇											
CVPA-13 Part 1 (N/I) (Missile Defense System Cybersecurity Test)																◇											
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)																	◇										
GTD-13 (N/I) (Missile Defense System Ground Test)																	◇										
AA-13 (N/I) (Missile Defense System Cybersecurity Test)																	◇										
CVPA-13 Part 2 (N/I) (Missile Defense System Cybersecurity Test)																	◇										
GTI-14 Sprint 1 (N/I)																		◇									
CVPA-14 Part 1 (N/I) (Missile Defense System Cybersecurity Test)																			◇								
FTG-16 (GM, DT Intercept Flight Test)																			△								
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)																			◇								
AA-14 (N/I) (Missile Defense System Ground Test)																				◇							
FTG-17 (GM, DT/OT Intercept Flight Test)																				△							

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023											
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test						Project (Number/Name) MT08 / Midcourse Test													
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
GTD-14 (N/I) ((Missile Defense System Ground Test)																							◇		
CVPA-14 Part 2 (N/I) (Missile Defense System Cybersecurity Test)																							◇		
FTG-18 (DT/OT)																							△		
GTI-16 Sprint 1 (N/I)																							◇		

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604887C / <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>	Project (Number/Name) MT08 / <i>Midcourse Test</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Element Cyber Testing	1	2022	4	2028
GTI-08a (N/I) (Missile Defense System Ground Test)	3	2022	3	2022
GTD-08a (N/I) (Missile Defense System Ground Test)	1	2023	1	2023
AA-08a (N/I) (Missile Defense System Cybersecurity Test)	2	2023	2	2023
CVPA-08a (N/I) (Missile Defense System Cybersecurity Test)	2	2023	2	2023
CVPA-08b Part 1 (N/I) (Missile Defense System Cybersecurity Test)	4	2023	4	2023
FTX-26 (OT) (SN, OT Target Only Flight Test)	4	2023	4	2023
GTI-08b (N/I)	4	2023	4	2023
FTG-12 (GM, DT/OT Intercept Flight Test)	1	2024	1	2024
CVPA-08b Part 2 (N/I) (Missile Defense System Cybersecurity Test)	2	2024	2	2024
AA-08b (N/I) (Missile Defense System Cybersecurity Test)	2	2024	2	2024
GTD-08b (N/I)	2	2024	2	2024
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)	1	2025	1	2025
CVPA-13 Part 1 (N/I) (Missile Defense System Cybersecurity Test)	1	2025	1	2025
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)	3	2025	3	2025
GTD-13 (N/I) (Missile Defense System Ground Test)	4	2025	4	2025
AA-13 (N/I) (Missile Defense System Cybersecurity Test)	4	2025	4	2025
CVPA-13 Part 2 (N/I) (Missile Defense System Cybersecurity Test)	4	2025	4	2025
GTI-14 Sprint 1 (N/I)	4	2026	4	2026
CVPA-14 Part 1 (N/I) (Missile Defense System Cybersecurity Test)	2	2027	2	2027
FTG-16 (GM, DT Intercept Flight Test)	2	2027	2	2027
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)	2	2027	2	2027

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test	Project (Number/Name) MT08 / Midcourse Test	
		Start		End
Events		Quarter	Year	Quarter Year
AA-14 (N/I) (Missile Defense System Ground Test)		4	2027	4 2027
FTG-17 (GM, DT/OT Intercept Flight Test)		4	2027	4 2027
GTD-14 (N/I) ((Missile Defense System Ground Test)		4	2027	4 2027
CVPA-14 Part 2 (N/I) (Missile Defense System Cybersecurity Test)		4	2027	4 2027
FTG-18 (DT/OT)		3	2028	3 2028
GTI-16 Sprint 1 (N/I)		4	2028	4 2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test				Project (Number/Name) MD40 / Program Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program Wide Support	18.285	1.921	3.961	1.664	-	1.664	1.450	2.345	5.014	4.447	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Wide Support (PWS) is allocated on a pro-rata basis across multiple Agency Program Elements (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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	1.921	3.961	1.664
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604887C / <i>Ballistic Missile Defense Midcourse Defense Segment Test</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2024 Plans: - SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects the PWS allocation on a pro-rata basis across multiple Agency PE's each fiscal year based on the total Agency budget, and therefore fluctuates per PE by fiscal year.</p>			
Accomplishments/Planned Programs Subtotals		1.921	3.961
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test				Project (Number/Name) MD40 / Program Wide Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations and Support	Various	Various : Various	3.161	0.065	Nov 2021	0.000		0.000		-		0.000	3.226	6.452	0.000
Program Wide Support - Agency Operations MITRE	FFRDC	THE MITRE CORPORATION : MD	2.036	0.700	Dec 2021	2.705	Nov 2022	0.539	Nov 2023	-		0.539	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Allot	Various : AL	0.416	0.028	Apr 2022	0.000		0.749	Oct 2023	-		0.749	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations User Services	Reqn	Various : AL	6.577	1.078	Nov 2021	0.928	Nov 2022	0.000		-		0.000	8.583	17.166	0.000
Program Wide Support - Agency Operations and Support Services	C/CPFF	SYSTEMS ENGINEERING INC : AL	6.095	0.050	Nov 2021	0.328	Nov 2022	0.376	Nov 2023	-		0.376	Continuing	Continuing	Continuing
Subtotal			18.285	1.921		3.961		1.664		-		1.664	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			18.285	1.921		3.961		1.664		-		1.664	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604887C / Ballistic Missile Defense Midcourse Defense Segment Test	Project (Number/Name) MD40 / Program Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 Program Element (Number/Name) PE 0202057C I Safety Program Management							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	2.316	2.417	2.484	-	2.484	2.542	2.591	2.642	2.689	Continuing	Continuing
MDSH: Safety Program Management	-	2.316	2.417	2.484	-	2.484	2.542	2.591	2.642	2.689	Continuing	Continuing
Program MDAP/MAIS Code: 362												
Note N/A												
A. Mission Description and Budget Item Justification The Missile Defense Agency (MDA) Occupational Safety and Health (OSH) establishes the program plans, policy, responsibilities, and guidelines for compliance with statutory, regulatory, and Department of Defense (DoD) policy/program directives. It also establishes MDA OSH programs designed for the protection of human resources through accident prevention; protection of MDA systems, property, and equipment; and the compliance with appropriate statutes, regulations, Executive Orders, and DoD policies. OSH develops and ensures implementation of safety requirements, mitigates safety risks to the lowest practical level, and ensures a safe workplace for all MDA employees and contractors by implementing a Safety and Occupational Health program.												
B. Program Change Summary (\$ in Millions)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total				
Previous President's Budget				2.323	2.417	2.477	-	2.477				
Current President's Budget				2.316	2.417	2.484	-	2.484				
Total Adjustments				-0.007	0.000	0.007	-	0.007				
• Congressional General Reductions				0.000	0.000							
• Congressional Directed Reductions				0.000	0.000							
• Congressional Rescissions				0.000	0.000							
• Congressional Adds				0.000	0.000							
• Congressional Directed Transfers				0.000	0.000							
• Reprogrammings				0.000	0.000							
• SBIR/STTR Transfer				-0.007	0.000							
• Other Adjustment				0.000	0.000	0.007	-	0.007				
Change Summary Explanation N/A												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0202057C / Safety Program Management				Project (Number/Name) MDSH / Safety Program Management			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MDSH: Safety Program Management	-	2.316	2.417	2.484	-	2.484	2.542	2.591	2.642	2.689	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

The Missile Defense Agency (MDA) Occupational Safety and Health (OSH) establishes the program plans, policy, responsibilities, and guidelines for compliance with statutory, regulatory, and Department of Defense (DoD) policy/program directives. It also establishes MDA OSH programs designed for the protection of human resources through accident prevention; protection of MDA systems, property, and equipment; and the compliance with appropriate statutes, regulations, Executive Orders, and DoD policies.

OSH develops and ensures implementation of safety requirements, mitigates safety risks to the lowest practical level, and ensures a safe workplace for all MDA employees and contractors by implementing a Safety and Occupational Health program.

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

	FY 2022	FY 2023	FY 2024
Title: Safety Program Management	2.316	2.417	2.484
Articles:	-	-	-
Description: The OSH program ensures that all employees are provided a safe and healthful workplace through an aggressive initiative of workplace inspections, audits, and accident investigation processes.			
The unique accomplishments to each FY are as follows:			
FY 2023 Plans: SEE ABOVE			
FY 2024 Plans: SEE ABOVE			
FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals	2.316	2.417	2.484

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0202057C / Safety Program Management	Project (Number/Name) MDSH / Safety Program Management
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy The OSH program utilizes a collaboration between subject matter expertise in the Government and Contract Support Services to ensure implementation of safety requirements, mitigate safety risks to the lowest practical level, and ensure a safe workplace for all MDA employees and contractors.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
0400 / 4						PE 0202057C / Safety Program Management				MDSH / Safety Program Management					
Support (\$ in Millions)						FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Safety Program Management - Safety & Occupational Health	C/CPFF	ARES CORPORATION : VA	0.000	1.130	Nov 2021	0.832	Nov 2022	1.081	Nov 2023	-		1.081	Continuing	Continuing	Continuing
Subtotal			0.000	1.130		0.832		1.081		-		1.081	Continuing	Continuing	N/A
Remarks															
N/A															
Management Services (\$ in Millions)						FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Safety Program Management - Safety Management (MDA Civ)	Allot	MDA : AL, AK, CA	0.000	1.129	Oct 2021	1.119	Oct 2022	1.156	Oct 2023	-		1.156	Continuing	Continuing	Continuing
Safety Program Management - Safety Operations SLA	C/CPIF	JACOBS TECHNOLOGY INC. : Various	0.000	0.000		0.388	Mar 2023	0.167	Mar 2024	-		0.167	Continuing	Continuing	Continuing
Safety Program Management - Safety Operations travel	Allot	MDA : AL, AK, CA	0.000	0.057	Nov 2021	0.078	Nov 2022	0.080	Nov 2023	-		0.080	Continuing	Continuing	Continuing
Subtotal			0.000	1.186		1.585		1.403		-		1.403	Continuing	Continuing	N/A
Remarks															
N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	2.316		2.417		2.484		-		2.484	Continuing	Continuing	N/A
Remarks															
Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0202057C / Safety Program Management	Project (Number/Name) MDSH / Safety Program Management

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Safety & Occupational Health	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0305103C / Cyber Security Initiative
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	17.898	1.118	1.165	2.760	-	2.760	2.826	2.893	2.963	3.025	Continuing	Continuing
MDCS: Cyber Security Initiative	17.898	1.118	1.165	2.760	-	2.760	2.826	2.893	2.963	3.025	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Increase from FY 2023 to FY 2024 provides for the consolidation of Cyber Forensics Laboratory activities from the Enabling PE (0603890C).

A. Mission Description and Budget Item Justification

The Missile Defense Agency (MDA) Counterintelligence (CI) Division conducts CI in Cyberspace activities pursuant to Department of Defense (DoD) Directive DoDD 5240.02 (Counterintelligence) and DoD Instruction S-5240.23 (CI Activities in Cyberspace) to identify, disrupt, neutralize and mitigate foreign intelligence services and international terrorist organizations, hereafter referred to as foreign entities, to act in observable or exploitable ways. To this end, the MDA CI Division conducts activities to detect, neutralize and mitigate foreign entity-directed malicious and insider threat activities targeting MDA administrative and Missile Defense fire control networks and mobile devices.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	1.142	1.165	1.207	-	1.207
Current President's Budget	1.118	1.165	2.760	-	2.760
Total Adjustments	-0.024	0.000	1.553	-	1.553
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.024	0.000			
• Other Adjustment	0.000	0.000	1.553	-	1.553

Change Summary Explanation

The increase in FY 2024 provides for the consolidation of Cyber Forensics Laboratory activities from the Enabling PE (0603890C).

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0305103C / <i>Cyber Security Initiative</i>				Project (Number/Name) MDCS / <i>Cyber Security Initiative</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MDCS: <i>Cyber Security Initiative</i>	17.898	1.118	1.165	2.760	-	2.760	2.826	2.893	2.963	3.025	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from FY 2023 to FY 2024 provides for the consolidation of Cyber Forensics Laboratory activities from the Enabling PE (0603890C).

A. Mission Description and Budget Item Justification

The Department of Defense (DoD) Counterintelligence in Cyberspace (CIC) mission initiative falls under the functional and fiscal management of the Director, Defense Intelligence Agency (DIA). The Missile Defense Agency (MDA) Counterintelligence (CI) Division conducts defensive CIC activities pursuant to DoD Directive DoDD 5240.02 (Counterintelligence), DoD Instruction S-5240.23 (CI Activities in Cyberspace) and DoD Instruction 5240.26 (Countering Espionage, International Terrorism, and the CI Insider Threat), and an MDA Annex within an annual DIA-approved Implementation Plan.

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

	FY 2022	FY 2023	FY 2024
Title: DoD CI in Cyberspace Initiative	1.118	1.165	2.760
Articles:	-	-	-
<p>Description: This activity detects, identifies, neutralizes and mitigates malicious activities directed by foreign entities that target MDA cyber assets. The following actions are required on a continuing basis to accomplish the DoD CI in Cyberspace Initiative:</p> <ul style="list-style-type: none"> -- Collaborate with the MDA Computer Emergency Response Team to detect, neutralize and mitigate potential foreign entity directed malicious and insider threat activities targeting MDA administrative and fire control networks, and mobility devices -- Conduct CI Incident Assessment of potential foreign entity directed malicious or insider threat activities and refers suspected incidents or events to the Federal Bureau of Investigation or military department CI organizations for further investigation -- Conduct CI forensics analysis of MDA computer network activity logs to identify potential indicators of foreign entity directed malicious, insider threat or computer network attack/exploitation activities targeting MDA information -- Coordinate with national and DoD level intelligence, CI and law enforcement agencies to identify foreign entity cyber actor intrusion sets and the tactics, techniques and procedures used to target MDA and its Cleared Defense Contractor computer networks -- Coordinate with MDA cleared defense contractors that have been compromised by foreign intelligence entities to capture and triage exfiltrated MDA related data, allowing MDA engineering teams to perform proper damage assessments -- Provide required initial and periodic training to ensure the MDA workforce is kept apprised of foreign entity threats to DoD personnel, facilities, information, activities, and information technology systems -- Protect MDA Sensitive Compartmented Information Facility and Special Access Program areas from cellular/wireless device monitoring -- Provide support to the MDA Counter Insider Threat program 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0305103C / <i>Cyber Security Initiative</i>	Project (Number/Name) MDCS / <i>Cyber Security Initiative</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
Specific and/or unique accomplishments to each FY are as follows: <i>FY 2023 Plans:</i> - SEE ABOVE. <i>FY 2024 Plans:</i> - Provide CI support for Supply Chain and Cyber Risk Management (SC2RM) activities <i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase from FY 2023 to FY 2024 provides for the consolidation of Cyber Forensics Laboratory activities from the Enabling PE (0603890C).			
Accomplishments/Planned Programs Subtotals	1.118	1.165	2.760

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603890C: <i>BMD</i> <i>Enabling Programs</i>	616.800	588.847	597.720	-	597.720	620.823	639.398	648.954	650.432	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, and industry.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency											Date: March 2023				
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0305103C / Cyber Security Initiative				Project (Number/Name) MDCS / Cyber Security Initiative					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
DoD CI in Cyberspace Initiative - CI in Cyberspace	Various	Various : Various	0.000	1.118	Oct 2021	1.165	Oct 2022	2.760	Oct 2023	-		2.760	Continuing	Continuing	Continuing
DoD CI in Cyberspace Initiative - CI in Cyberspace - Civ Salaries	Allot	MDA : VA	1.319	0.000		0.000		0.000		-		0.000	0.000	1.319	0.000
DoD CI in Cyberspace Initiative - Counterintelligence	C/CPFF	TEAMS : VA, AL	5.164	0.000		0.000		0.000		-		0.000	0.000	5.164	0.000
DoD CI in Cyberspace Initiative - Cybersecurity Upgrades at Cheyenne Mountain	C/CPIF	Lockheed Martin : CO	10.000	0.000		0.000		0.000		-		0.000	0.000	10.000	0.000
DoD CI in Cyberspace Initiative - Technical Surveillance & Countermeasures	MIPR	USA-TAO : Ft. Detrick, MD	1.415	0.000		0.000		0.000		-		0.000	0.000	1.415	0.000
Subtotal			17.898	1.118		1.165		2.760		-		2.760	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			17.898	1.118		1.165		2.760		-		2.760	Continuing	Continuing	N/A
Remarks Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023														
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0305103C / Cyber Security Initiative										Project (Number/Name) MDCS / Cyber Security Initiative									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
MDCS Cyber Security Initiative										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇					

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0305103C / <i>Cyber Security Initiative</i>	Project (Number/Name) MDCS / <i>Cyber Security Initiative</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MDCS Cyber Security Initiative	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
0400: Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)					PE 1206893C / Space Tracking and Surveillance System							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	139.947	14.907	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	154.854
MD12: Space Tracking and Surveillance System (STSS)	126.566	14.168	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	140.734
MC12: Cyber Operations	7.225	0.156	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.381
MD40: Program-Wide Support	6.156	0.583	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.739
Program MDAP/MAIS Code: 362												
Note												
No funding is requested for this program; the STSS satellites were passivated in FY 2022.												
A. Mission Description and Budget Item Justification												
The two Space Tracking and Surveillance System (STSS) satellites launched in 2009 provided an on-orbit capability to validate remote sensor fire control integration to inform design and operation of the Missile Defense Agency (MDA) space-layer capabilities. MDA used STSS data to characterize contribution of space data into the Missile Defense System and to provide sensor measurements and background data supporting trade studies and analyses for MDA space-layer options for both Homeland and Regional Defense.												
STSS provided risk reduction for MDA space capabilities, models, algorithms, interface definitions, communications architectures, and performance across threat object acquisition, tracking, complex target signatures, discrimination, and multi-mission support. STSS also informs the Missile Defense System Concept of Operations, timelines, and performance requirements for remote space sensor cuing for ballistic missile engagements, expanding battle space for weapon systems such as Aegis Ballistic Missile Defense (BMD).												
The STSS program demonstrated the functions and interfaces required for space data delivery to the Missile Defense System, validating the data quality necessary for interceptors to launch and/or engage on STSS sensor data. The two STSS satellites were operated from the ground station processing center at the Missile Defense Space Center (MDSC). The STSS satellites demonstrated MDA space-layer capabilities and reduced risk for future systems (e.g., Hypersonic and Ballistic Tracking Space Sensor) by viewing high-value Targets of Opportunity and participating in Missile Defense System flight tests. Though the STSS satellites operated beyond their life expectancy, MDA continued STSS operations due to the continued contributions to the Missile Defense System mission. Based on annual health and status assessment of the STSS satellites, the STSS satellites were passivated in FY 2022. This decision enabled a safe conclusion and continued stewardship of space for the extremely successful STSS program which demonstrated the necessity of on-orbit detection and tracking capability for the Missile Defense System.												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency					Date: March 2023
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 1206893C <i>I Space Tracking and Surveillance System</i>		
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	15.176	0.000	0.000	-	0.000
Current President's Budget	14.907	0.000	0.000	-	0.000
Total Adjustments	-0.269	0.000	0.000	-	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.269	0.000			
• Other Adjustment	0.000	0.000	0.000	-	0.000
<u>Change Summary Explanation</u>					
N/A					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 1206893C / <i>Space Tracking and Surveillance System</i>				Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD12: <i>Space Tracking and Surveillance System (STSS)</i>	126.566	14.168	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	140.734
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

No funding is requested for this program; the STSS satellites were passivated in FY 2022.

A. Mission Description and Budget Item Justification

Two Space Tracking and Surveillance System (STSS) satellites provided a low earth orbit sensor capability with visible and infrared sensors for integrated testing with other Missile Defense System elements. STSS demonstrated space-based capabilities including persistent tracking and integrated Missile Defense System discrimination improvements. These two satellites provided valuable risk reduction for acquisition, tracking, complex scenes, and discrimination functionality to include stereo data fusion, cuing radars over-the-horizon, and over-the-horizon fire control.

The on-orbit sensors collected invaluable background, scene, and target signature data to support the Missile Defense Agency (MDA) space-layer and other weapon sensor development trade studies. STSS activities provided information for integration of space-based missile tracking (midcourse phase); remote sensor and weapons cuing via Command and Control, Battle Management and Communications (C2BMC); features and discrimination; and hit/impact point assessments. STSS enabled early capability assessment to address Warfighter need for highly available early missile tracking from space, providing an operationally suitable means of global persistent surveillance and engagement.

Lessons learned and data gathered from the STSS demonstration satellites program provide valuable information for MDA space-layer modeling and simulation activities in assessing the capability provided by Overhead Persistent Infrared sensors.

Based on annual health and status assessment of the STSS satellites, the STSS satellites were passivated in FY 2022. This decision enabled a safe conclusion and continued stewardship of space for the extremely successful STSS program which demonstrated the necessity of on-orbit detection and tracking capability for the Missile Defense System.

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

	FY 2022	FY 2023	FY 2024
Title: Demonstration Satellites	14.168	0.000	0.000
Articles:	-	-	-
Description: The Space Tracking and Surveillance System (STSS) demonstration satellites collected and delivered critical space and missile characterization data used to design and inform the Missile Defense System and space-layer capabilities. The Missile Defense Space Center (MDSC) facilities and activities were required for safe STSS satellite operations and sustainment.			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency			Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 1206893C / <i>Space Tracking and Surveillance System</i>		Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024
<p>STSS activities included:</p> <ul style="list-style-type: none"> - Perform risk reduction for MDA tracking and surveillance initiatives and Overhead Persistent Infrared (OPIR) Enterprise integration and demonstrations across OPIR cuing, Joint Tasking Operations, and data utility - Collect data to support joint OPIR mission utility assessments across Space Situational Awareness and Battle Space Awareness missions to include integration, analyses, and studies to confirm data sharing capabilities - Participate in Integrated Master Test Plan events - Conduct satellite testing to demonstrate critical space capabilities, including: <ul style="list-style-type: none"> -- Ability to support Missile Defense System integrated discrimination efforts -- Ability to support Hit/Kill assessment from space -- Ability to cue Missile Defense System sensors from space -- Ability to provide precision cue to Missile Defense System sensors - Perform satellite functionality testing and calibration as part of the satellite operations - Conduct missile tracking experiments as identified in the test specific sections - Provide Space Operations Command Space Situational Awareness support <p>MDSC efforts related to STSS included:</p> <ul style="list-style-type: none"> - Analyze space radiation environment and its influence on MDA space system performance - Analyze space-based sensor data from STSS and OPIR observations, both individually and combined, to identify phenomenology and techniques to aid tracking and discrimination architectures - Provide data for concept studies and analyses for alternative sensor payload configurations - Sustain MDSC resources for all participant activities, including data, voice, and/or video communications, and support MDA cybersecurity directives - Document requirements and perform tracking, design, implementation, and verification necessary for the MDSC facility - Implement ongoing and emerging cybersecurity requirements <p>Specific and/or unique accomplishments to each Fiscal Year (FY) are as follows:</p> <p>FY 2023 Plans: No funding is requested in this Program Element beginning in FY 2023.</p> <p>FY 2024 Plans: No funding is requested in this Program Element beginning in FY 2023.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency								Date: March 2023			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 1206893C / <i>Space Tracking and Surveillance System</i>				Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>			

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024
N/A										
Accomplishments/Planned Programs Subtotals								14.168	0.000	0.000

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	250.123	230.502	239.159	-	239.159	212.191	233.877	242.623	251.226	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	616.800	588.847	597.720	-	597.720	620.823	639.398	648.954	650.432	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	628.014	595.572	693.727	-	693.727	639.678	706.974	699.611	733.909	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	44.188	49.367	50.549	-	50.549	56.624	58.020	59.193	60.615	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	560.445	579.075	570.258	-	570.258	583.747	642.329	664.683	510.063	Continuing	Continuing
• 1206895C: <i>Ballistic Missile Defense System Space Programs</i>	285.706	129.957	109.483	-	109.483	119.860	43.032	43.900	44.957	Continuing	Continuing

Remarks

D. Acquisition Strategy

The STSS demonstration satellites program follows MDA's capability-based acquisition strategy that emphasizes testing, incremental development, and evolutionary acquisition. The STSS effort utilizes a single prime contractor, Northrop Grumman Aerospace Systems (NGAS) with the subcontractor Raytheon providing the sensor

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
0400 / 4	PE 1206893C / <i>Space Tracking and Surveillance System</i>	MD12 / <i>Space Tracking and Surveillance System (STSS)</i>
<p>payload. This contract implements MDA's capability-based acquisition strategy by using existing satellite hardware as a low risk opportunity, building upon the lessons learned from previous development efforts, and establishing a series of planned enhancements to bring added capability to the Missile Defense System.</p> <p>MDSC efforts will be acquired on the Specialized Warfighter Development Contract and Integrated Research and Development for Enterprise Solutions vehicles. These contracts are responsible for integrating Research, Development, Test and Evaluation, operations support, and resource and infrastructure management for the MDSC.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Demonstration Satellites - Capability Based R&D	SS/CPAF	NGAS : Redondo Beach, CA, Schriever AFB, CO	81.176	5.082	Nov 2021	0.000		0.000		-		0.000	0.000	86.258	86.258
Demonstration Satellites - STSS Support to Missile Defense Space Center (MDSC)	C/CPFF	Northrop Grumman/ Jacobs Engineering : Schriever AFB, CO	13.557	0.000		0.000		0.000		-		0.000	0.000	13.557	13.557
Demonstration Satellites - Systems Engineering	FFRDC	Aerospace : Los Angeles, CA	1.568	0.000		0.000		0.000		-		0.000	0.000	1.568	1.568
Subtotal			96.301	5.082		0.000		0.000		-		0.000	0.000	101.383	N/A

Remarks

All efforts listed above are a continuation of Program Element (PE) 0603893C, MD12

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Demonstration Satellites - CSS Engineering Support	C/CPFF	MODERN TECHNOLOGY SOLUTIONS, INC. : Various	0.000	2.581	Nov 2021	0.000		0.000		-		0.000	0.000	2.581	2.581
Demonstration Satellites - Contract Support Services (CSS)	C/Various	Various : AL, CO	10.949	0.767	Dec 2021	0.000		0.000		-		0.000	0.000	11.716	11.716
Demonstration Satellites - IT User Services	C/CPAF	Northrop Grumman/ Jacobs Engineering : AL, AK, CA, CO, HI, NM, VA	2.475	0.636	Dec 2021	0.000		0.000		-		0.000	0.000	3.111	3.111
Demonstration Satellites - MDA Civilian	Allot	MDA : AL, CO	11.437	3.567	Oct 2021	0.000		0.000		-		0.000	0.000	15.004	15.004

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 1206893C / <i>Space Tracking and Surveillance System</i>						Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Demonstration Satellites - Other Government Agency (OGA) Civilian	MIPR	SMC : Schriever AFB, CO	0.492	0.000		0.000		0.000		-		0.000	0.000	0.492	0.492
Demonstration Satellites - Program Mission Support	Various	Various : Various	3.361	1.059	Nov 2021	0.000		0.000		-		0.000	0.000	4.420	4.420
Demonstration Satellites - UARC	C/CPFF	Utah University, Space Dynamics Laboratory : CO, VA	1.551	0.476	Nov 2021	0.000		0.000		-		0.000	0.000	2.027	2.027
Subtotal			30.265	9.086		0.000		0.000		-		0.000	0.000	39.351	N/A
Remarks All efforts listed above are a continuation of PE 0603893C, MD12															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			126.566	14.168		0.000		0.000		-		0.000	0.000	140.734	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023																			
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 1206893C / Space Tracking and Surveillance System										Project (Number/Name) MD12 / Space Tracking and Surveillance System (STSS)									
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
Satellite Passivation/Contract Completion										◆	◆	◆	◆																

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206893C / Space Tracking and Surveillance System	Project (Number/Name) MD12 / Space Tracking and Surveillance System (STSS)	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Satellite Passivation/Contract Completion	1	2022	4	2022

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 1206893C / Space Tracking and Surveillance System				Project (Number/Name) MC12 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC12: Cyber Operations	7.225	0.156	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.381
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note No funding is requested for this program; the STSS satellites were passivated in FY 2022.												
A. Mission Description and Budget Item Justification Space Tracking and Surveillance System (STSS) Cyber Operations sustained the Missile Defense Agency (MDA) Risk Management Framework (RMF) and Security Controls Assessments (SCA)/Controls Validation Testing (CVT) activities, analysis of validation results, risk assessments and reviews of proposed Program Manager/Information System Security Manager (PM/ISSM) Plans of Action and Milestones (POA&Ms) for MDA STSS mission systems. Activities in this Project were necessary to comply with the Federal Information Security Management Act (FISMA).												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024	
Title: Network / System Certification and Accreditation (C&A) Articles: Description: This activity maintained the Assessment and Authorization (A&A) and C&A data repository, capturing the RMF documentation (artifacts, validation results, and Information Assurance Risk Assessment results, and Designated Approving Authority (DAA) accreditation decisions) and POA&Ms on all MDA information systems. This activity prepared and submitted C&A documentation and accreditation recommendations to the MDA Chief Information Officer (CIO) /Certification Authority and the DAA. Independent Verification and Validation team actions ensured the availability, integrity, authentication, confidentiality, and non-repudiation of MDA mission, test, and administrative systems. Specific and/or unique accomplishments to each Fiscal Year (FY) are as follows: FY 2023 Plans: No funding is requested in this Program Element beginning in FY 2023. FY 2024 Plans: No funding is requested in this Program Element beginning in FY 2023. FY 2023 to FY 2024 Increase/Decrease Statement: N/A									0.156	0.000	0.000	
									-	-	-	
Accomplishments/Planned Programs Subtotals									0.156	0.000	0.000	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) MC12 / <i>Cyber Operations</i>
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 1206893C / Space Tracking and Surveillance System				Project (Number/Name) MC12 / Cyber Operations					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - Civ Cyber Labor	Allot	MDA : Schriever AFB	0.727	0.156	Oct 2021	0.000		0.000		-		0.000	0.000	0.883	0.860
Network / System Certification and Accreditation (C&A) - Contractor Support	C/Various	Various : AL, CO	2.031	0.000		0.000		0.000		-		0.000	0.000	2.031	2.069
Network / System Certification and Accreditation (C&A) - Cross Domain Upgrade	C/CPFF	Jacobs : Schriever AFB, CO	0.019	0.000		0.000		0.000		-		0.000	0.000	0.019	0.019
Network / System Certification and Accreditation (C&A) - Information Assurance	C/CPAF	NGAS : Schriever AFB, CO/Redondo Beach, CA	4.448	0.000		0.000		0.000		-		0.000	0.000	4.448	4.448
Subtotal			7.225	0.156		0.000		0.000		-		0.000	0.000	7.381	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			7.225	0.156		0.000		0.000		-		0.000	0.000	7.381	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023																			
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 1206893C / Space Tracking and Surveillance System										Project (Number/Name) MC12 / Cyber Operations									
Significant Event Complete ▲		Significant Event Planned △		Milestone Decision Complete ★		Milestone Decision Planned ☆		Element Test Complete ◆		Element Test Planned ◇		System Level Test Complete ●		System Level Test Planned ○		Complete Activity ◆		Planned Activity ◇											
										FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028							
MC12 Cyber Operations Planned										◆	◆	◆	◆																

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206893C / Space Tracking and Surveillance System	Project (Number/Name) MC12 / Cyber Operations	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC12 Cyber Operations Planned	1	2022	4	2022

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023			
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 1206893C / Space Tracking and Surveillance System				Project (Number/Name) MD40 / Program-Wide Support				
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
MD40: Program-Wide Support	6.156	0.583	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.739	
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-			
Note N/A													
A. Mission Description and Budget Item Justification PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024		
Title: Program Wide Support Articles:									0.583	0.000	0.000		
									-	-	-		
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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													

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
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.			
FY 2023 Plans: No funding is requested in this Program Element beginning in FY 2023.			
FY 2024 Plans: No funding is requested in this Program Element beginning in FY 2023.			
FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals		0.583	0.000
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy N/A			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023					
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 1206893C / Space Tracking and Surveillance System						Project (Number/Name) MD40 / Program-Wide Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Program Wide Support - Agency Operations and Support Services	C/CPAF	Northrop Grumman : CO	5.410	0.557	Nov 2021	0.000		0.000		-		0.000	0.000	5.967	0.000		
Program Wide Support - Agency Operations Management	C/CPAF	Various Multi: AL, CA, CO, : VA	0.527	0.026	Apr 2022	0.000		0.000		-		0.000	0.000	0.553	0.000		
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various : Various	0.219	0.000		0.000		0.000		-		0.000	0.000	0.219	0.000		
Subtotal			6.156	0.583		0.000		0.000		-		0.000	0.000	6.739	N/A		
Remarks N/A																	
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			6.156	0.583		0.000		0.000		-		0.000	0.000	6.739	N/A		
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency							Date: March 2023										
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 1206893C / Space Tracking and Surveillance System				Project (Number/Name) MD40 / Program-Wide Support									
Significant Event Complete ▲		Milestone Decision Complete ★		Element Test Complete ◆		System Level Test Complete ●		Complete Activity ◆									
Significant Event Planned △		Milestone Decision Planned ☆		Element Test Planned ◇		System Level Test Planned ○		Planned Activity ◇									
				FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028	
MD40 Program-Wide Support				◆◆◆◆													

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206893C / Space Tracking and Surveillance System	Project (Number/Name) MD40 / Program-Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2022

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)					PE 1206895C I Ballistic Missile Defense System Space Programs							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	369.442	285.706	129.957	109.483	-	109.483	119.860	43.032	43.900	44.957	Continuing	Continuing
MD33: MD Space Exp Center (MDSEC)	116.153	29.327	34.512	35.367	-	35.367	37.962	35.755	36.829	37.567	Continuing	Continuing
MD42: Hypersonic & Ballistic Tracking Space Sensor (HBTSS) Prototyping	238.139	249.890	89.220	68.538	-	68.538	75.840	3.755	3.470	3.539	Continuing	Continuing
MC33: MD Space Exp Center (MDSEC)	11.215	1.324	1.506	1.690	-	1.690	1.744	1.783	1.820	1.857	Continuing	Continuing
MD40: Program-Wide Support	3.935	5.165	4.719	3.888	-	3.888	4.314	1.739	1.781	1.994	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Decrease from Fiscal Year (FY) 2023 to FY 2024 reflects completion of satellite integration and launch of HBTSS.

A. Mission Description and Budget Item Justification

Spacebased Kill Assessment (SKA): The SKA project will deliver dedicated space sensors contributing to hit and kill assessment for Homeland Defense. Missile Defense Agency (MDA) Missile Defense System intercept testing experience provided a solid understanding of kill assessment physics to enable exploration of this critical capability. SKA incorporates Government Accountability Office (GAO) recommendations to examine the operational feasibility of disaggregating large satellites and to provide data for the business case for shared versus dedicated satellite control, including the ground antenna networks. The favorable cost and schedule performance on SKA is also consistent with the GAO's assessment of hosted payload programs. The SKA experiment utilizes a network of small Infrared sensors integrated onto host satellites that while on orbit observe missile defense intercepts and deliver situational awareness hit and kill assessment declarations.

HBTSS: HBTSS will demonstrate a schedule-focused, cost-constrained capability to detect and track hypersonic threats and boosting conventional ballistic missiles. The key characteristic of HBTSS that sets it apart from other Overhead Persistent Infrared (OPIR) sensors is the requirement to provide fire-control quality tracking data. This information will be handed off to the Missile Defense System hypersonic weapons systems to allow long range engagement of the threat. The enhanced tracking accuracy through missile burn out will provide the warfighter increased missile defense weapons systems engagement capability and higher accuracy impact predictions. The requirement for fire-control data necessitates that HBTSS be a highly sensitive, low-latency, high quality of service system. Following the successful demonstration of HBTSS capabilities, the responsibility for HBTSS operational fielding will be transferred to the US Space Force and the MDA will continue the development of the next-generation of space-based fire control sensors for missile defense. MDA is collaborating with the U.S. Space Force, under the leadership of the Chief of Space Operations, and the Space Development Agency to demonstrate HBTSS as a potential element within the larger Unified OPIR Enterprise Architecture.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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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 1206895C / <i>Ballistic Missile Defense System Space Programs</i>
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Space Applications for Missile Defense (SAMD): SAMD consolidates MDA resources (including those efforts previously planned in PE 1206893C) to provide strategic planning, program integration, contracting, acquisition, engineering, financial management, and program assessments for development and acquisition of space applications.

This PE also funds Cybersecurity efforts necessary to support Missile Defense System Space Programs.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	292.811	129.957	120.392	-	120.392
Current President's Budget	285.706	129.957	109.483	-	109.483
Total Adjustments	-7.105	0.000	-10.909	-	-10.909
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-7.105	0.000			
• Other Adjustment	0.000	0.000	-10.909	-	-10.909

Change Summary Explanation

Decrease reflects reduction of effort toward SKA operationalization and alignments for higher agency prioritizes.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense Sy stem Space Programs				Project (Number/Name) MD33 / MD Space Exp Center (MDSEC)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD33: MD Space Exp Center (MDSEC)	116.153	29.327	34.512	35.367	-	35.367	37.962	35.755	36.829	37.567	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

The Spacebased Kill Assessment (SKA) system is composed of two segments: a space segment and a ground segment.

The space segment is composed of a network of small infrared sensors (sensors, processor cards and cabling), each mated to a different satellite. The total number of sensors and their network placement are specifically tailored for the hit and kill assessment missions. The space segment includes key design features to improve its resiliency.

The ground segment monitors the health and status of the on-orbit sensors, commands the sensors to perform the hit and kill assessment mission, and analyzes the data to make a hit/kill assessment determination. The ground segment also includes the equipment necessary for communications security and information assurance. The Missile Defense Space Center provides the critical infrastructure for SKA data, routing SKA data between the commercial payload integrator and the multi-mission Missile Defense Space Enterprise Architecture.

Beginning in FY 2023, Budget Project MD33 will also fund Space Applications for Missile Defense (SAMD). SAMD is a consolidation of functional elements of Missile Defense Agency (MDA) Contractor Support Services (CSS), Federally Funded Research and Development Center (FFRDC)/University Affiliated Research Center (UARC), and Civilian manpower into a single entity that provides acquisition, financial, and technical support across the MDA Space Sensors enterprise. This represents a continuation of efforts previously funded in PE 1206893C.

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

	FY 2022	FY 2023	FY 2024
Title: Spacebased Kill Assessment	29.327	26.502	27.176
Articles:	-	-	-
Description: The SKA project is designed to deliver hit and kill assessment for Homeland Defense.			
It includes:			
- SKA sensor-host satellite integration and testing			
- On-orbit operations by experimenting and participating in Missile Defense System ground and flight tests			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Development of hit and kill assessment algorithms required to provide SKA situational awareness hit assessment - Missile Defense Space Enterprise Architecture (MDSEA) operations in support of SKA experimentation and testing - Supporting engineering trade studies and concept evaluations for current and future space-based sensors - Provide situational awareness hit assessment to Combatant Command (CCMD) United States Northern Command (USNORTHCOM) during declared Periods of Heightened Activity (POHA) <p>Specific and/or unique accomplishments to each Fiscal Year (FY) are as follows:</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Continues integration of SKA into the Missile Defense System Operational Capability Baseline through the Increment 6B.2 campaign <p>FY 2024 Plans:</p> <p>SEE ABOVE</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p> <p>N/A</p>				
<p>Title: Space Applications for Missile Defense</p> <p align="right">Articles:</p> <p>Description: SAMD provides strategic planning, program integration, contracting, acquisition, engineering, financial management, and program assessments for development and acquisition of space applications</p> <p>Recurring activities include:</p> <ul style="list-style-type: none"> - Build, develop and acquire Space Applications to support the 10 Steps to Ballistic Missile Intercept - Integration of space data with the Missile Defense System to enhance system capabilities - Coordination with U.S. Space Force on development of Missile Defense space-based capabilities - Provide technical and business management support activities to provide critical program status and decision quality data - Participate in the Space Engineering Review Board - Integration of Space capabilities with the Missile Defense System - Integration of space assets within MDA's Integrated Master Test Plan - Develop and evaluate future Space Application concepts <p>FY 2023 Plans:</p>		0.000 -	8.010 -	8.191 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 1206895C / <i>Ballistic Missile Defense System Space Programs</i>				Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2022	FY 2023	FY 2024
SEE ABOVE												
FY 2024 Plans: SEE ABOVE												
FY 2023 to FY 2024 Increase/Decrease Statement: N/A												
Accomplishments/Planned Programs Subtotals										29.327	34.512	35.367
C. Other Program Funding Summary (\$ in Millions)												
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>	
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	707.632	689.018	903.633	-	903.633	852.567	906.634	930.538	875.198	Continuing	Continuing	
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	250.123	230.502	239.159	-	239.159	212.191	233.877	242.623	251.226	Continuing	Continuing	
• 0603892C: <i>AEGIS BMD</i>	628.014	595.572	693.727	-	693.727	639.678	706.974	699.611	733.909	Continuing	Continuing	
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing	
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	44.188	49.367	50.549	-	50.549	56.624	58.020	59.193	60.615	Continuing	Continuing	
• 0603914C: <i>Ballistic Missile Defense Test</i>	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing	
• 0603915C: <i>Ballistic Missile Defense Targets</i>	560.445	579.075	570.258	-	570.258	583.747	642.329	664.683	510.063	Continuing	Continuing	
• 1206893C: <i>Space Tracking and Surveillance System</i>	14.907	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.907	
Remarks												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense System Space Programs	Project (Number/Name) MD33 / MD Space Exp Center (MDSEC)

D. Acquisition Strategy

The SKA priority is to provide situational awareness hit assessment to the warfighter. The SKA efforts would closely align with the MDA Technology Development acquisition life cycle phase. The acquisition strategy includes use of all available acquisition tools to include Military Interdepartmental Purchase Request (MIPRs)/ Support Agreements, existing contracts, and will competitively award new contracts as appropriate to meet requirements and deliver capabilities. To meet this priority, SKA has developed a body of evidence during Incremental Engineering Technical Review (IETR) preparations to improve systems engineering and facilitate program and risk management. SKA leverages experience that the Johns Hopkins University Applied Physics Laboratory (JHU/APL) has with its extensive history of performing kill assessment activities and conducting experiments associated with the Aegis Ballistic Missile Defense program. JHU/APL is the developer of the SKA experiment and its primary subcontractor was responsible for payload integration and hosting accommodations using a firm fixed price contract to contain costs. A direct contract has been awarded by MDA to the host integrator to improve communications and oversight. The SKA experiment uses a commercial satellite program as the platform host for a DOD payload, taking full advantage of a multi-billion dollar space and ground system that already exists.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 1206895C / <i>Ballistic Missile Defense System Space Programs</i>						Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Spacebased Kill Assessment - Development and Experimentation	C/CPFF	JHU/APL : MD	50.573	8.789	Nov 2021	14.093	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Spacebased Kill Assessment - Incremental Capability Operations	C/CPFF	JACOBS TECHNOLOGY INC. : CO	0.000	9.259	Nov 2021	7.894	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Spacebased Kill Assessment - Incremental Capability Operations - Various	C/CPFF	Various : Various	0.000	2.453	Jun 2022	0.000		0.000		-		0.000	2.453	4.906	2.453
Spacebased Kill Assessment - Integrate SKA into Missile Defense System Comms Network & MDSC	Various	Various : Various	1.116	0.000		0.000		0.000		-		0.000	1.116	2.232	0.000
Spacebased Kill Assessment - Software Assurance	MIPR	DEVCOM : AL	0.000	0.910	Dec 2021	0.811	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Spacebased Kill Assessment - Transition To Ops (Mission Systems)	C/Various	Various : MDA CO, AL	16.421	0.000		0.000		0.000		-		0.000	16.421	32.842	16.421
Spacebased Kill Assessment - Transition to Ops (Developer)	C/CPFF	JHU/APL : Laurel, MD	12.591	4.735	Nov 2021	0.000		0.000		-		0.000	17.326	34.652	17.326
Space Sensor Layer (SSL) - Space Sensor Layer (SSL) - Ground Segment	C/CPIF	Jacobs : Schriever AFB	3.798	0.000		0.000		0.000		-		0.000	0.000	3.798	3.798
Space Sensor Layer (SSL) - Space Sensor Layer (SSL) - Space Prototype Concept Activity	MIPR	SMC SpEC OTA : Various	7.207	0.000		0.000		0.000		-		0.000	0.000	7.207	7.207
Subtotal			91.706	26.146		22.798		0.000		-		0.000	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense System Space Programs				Project (Number/Name) MD33 / MD Space Exp Center (MDSEC)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Remarks															
In accordance with the Financial Management Regulation cost category definitions, some items have transferred to appropriate cost categories.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Spacebased Kill Assessment - Contractor Support Services (CSS) Various	C/TBD	TBD : TBD	2.822	1.282	Nov 2021	1.455	Nov 2022	2.031	Nov 2023	-		2.031	Continuing	Continuing	Continuing
Spacebased Kill Assessment - Development and Experimentation	C/CPIF	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : TBD	0.000	0.000		0.000		12.550	Oct 2023	-		12.550	Continuing	Continuing	Continuing
Spacebased Kill Assessment - FFRDC/ UARC	Various	Various : Various	3.442	0.900	Nov 2021	0.988	Nov 2022	0.953	Nov 2023	-		0.953	Continuing	Continuing	Continuing
Spacebased Kill Assessment - IT User Services	C/CPIF	JACOBS TECHNOLOGY INC. : VARIOUS	0.153	0.054	Dec 2021	0.697	Nov 2022	0.721	Nov 2023	-		0.721	Continuing	Continuing	Continuing
Spacebased Kill Assessment - Incremental Capability Operations	C/CPIF	JACOBS TECHNOLOGY INC. : CO	0.000	0.000		0.000		6.892	Nov 2023	-		6.892	Continuing	Continuing	Continuing
Spacebased Kill Assessment - Incremental Capability Operations Various	Various	Various : VARIOUS	0.000	0.000		0.000		2.857	Nov 2023	-		2.857	Continuing	Continuing	Continuing
Spacebased Kill Assessment - MDA Civilian	Allot	MDA : VA	0.891	0.156	Oct 2021	0.161	Oct 2022	0.166	Oct 2023	-		0.166	Continuing	Continuing	Continuing
Spacebased Kill Assessment - Program Mission Support	Various	Various : Various	0.644	0.789	Nov 2021	0.403	Nov 2022	1.006	Nov 2023	-		1.006	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>
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Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Space Applications for Missile Defense - CSS - Engineering Support	C/TBD	TBD : Various	0.000	0.000		2.991	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Space Sensor Layer (SSL) - Contract Support Services (CSS)	C/CPFF	Various : CO, AL	4.805	0.000		0.000		0.000		-		0.000	0.000	4.805	4.805
Space Applications for Missile Defense - Contractor Support Services (CSS) Various and UARC Support	C/Various	Various : Various	0.000	0.000		1.309	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Space Sensor Layer (SSL) - FFRDC	MIPR	Various : CA, CO, NM, VA	6.766	0.000		0.000		0.000		-		0.000	0.000	6.766	6.766
Space Applications for Missile Defense - MDA Civilian	Allot	MDA : Various	0.000	0.000		3.710	Oct 2022	3.834	Oct 2023	-		3.834	Continuing	Continuing	Continuing
Space Sensor Layer (SSL) - MDA Civilian	Allot	MDA : CO, AL	0.744	0.000		0.000		0.000		-		0.000	0.000	0.744	0.744
Space Sensor Layer (SSL) - Program Mission Support	C/Various	Various : CO, AL, VA	0.978	0.000		0.000		0.000		-		0.000	0.000	0.978	0.978
Space Sensor Layer (SSL) - UARC	C/CPFF	Various : UT, MD	3.202	0.000		0.000		0.000		-		0.000	0.000	3.202	3.202
Subtotal			24.447	3.181		11.714		31.010		-		31.010	Continuing	Continuing	N/A

Remarks
In accordance with the Financial Management Regulation cost category definitions, some items have transferred to appropriate cost categories.

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Space Applications for Missile Defense	C/TBD	TBD : VARIOUS	0.000	0.000		0.000		2.902	Nov 2023	-		2.902	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 1206895C / <i>Ballistic Missile Defense System Space Programs</i>						Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
- Contractor Support Services (CSS) Engineering Support															
Space Applications for Missile Defense - Contractor Support Services (CSS) Various and UARC Support	C/TBD	TBD : VARIOUS	0.000	0.000		0.000		1.455	Nov 2023	-		1.455	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		4.357		-		4.357	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			116.153	29.327		34.512		35.367		-		35.367	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense System Space Programs										Project (Number/Name) MD33 / MD Space Exp Center (MDSEC)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTT-26 (MRBM T1)	3	2025	3	2025
SKA Experimentation - 1Q2022-4Q2022	1	2022	4	2022
Missile Defense System Integration Planned	1	2022	4	2023
FTT-21 (TH, DT Intercept Flight Test)	2	2022	2	2022
SKA Operations/Experimentation - 1Q FY 2023 - 4Q FY 2023	1	2023	4	2023
FTX-26 (OT) (SN, OT Target Only Flight Test)	4	2023	4	2023
FTG-12 (GM, DT/OT Intercept Flight Test)	1	2024	1	2024
SKA Operations/Experimentation - 1Q FY 2024 - 4Q FY 2024	1	2024	4	2024
FTM-37 (AEGIS 5.1, DT/OT Intercept Flight Test)	1	2025	1	2025
SKA Operations/Experimentation - 1Q FY 2025 - 4Q FY 2025	1	2025	4	2025
FTM-43 (AEGIS 5.1, DT/OT Intercept Flight Test)	2	2025	2	2025
FTM-30 (AEGIS 5.1, DT/OT Intercept Flight Test)	4	2025	4	2025
SKA Operations/Experimentation - 1Q FY 2026 - 4Q FY 2026	1	2026	4	2026
SKA Operations/Experimentation - 1Q FY 2027 - 4Q FY 2027	1	2027	4	2027
SKA Operations/Experimentation - 1Q FY 2028 - 4Q FY 2028	1	2028	4	2028
FTM-47 (MRBM T4 X3/BQM-177 X4)	2	2028	2	2028
FTG-18 (DT/OT)	3	2028	3	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense System Space Programs				Project (Number/Name) MD42 / Hypersonic & Ballistic Tracking Space Sensor (HBTSS) Prototyping			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD42: Hypersonic & Ballistic Tracking Space Sensor (HBTSS) Prototyping	238.139	249.890	89.220	68.538	-	68.538	75.840	3.755	3.470	3.539	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2023 to FY 2024 reflects completion of satellite integration and launch of HBTSS.

A. Mission Description and Budget Item Justification

HBTSS will demonstrate a resilient, flexible, and global capability to detect and track hypersonic threats and boosting conventional ballistic missiles. The fire-control quality tracking data will be handed off to the hypersonic weapons systems to allow long range engagement of the threat while enhanced tracking accuracy through missile burn out will provide the warfighting community increased capability in missile defense weapons systems engagement and higher accuracy impact predictions.

The HBTSS priority is to maintain the pace of the development schedule to develop an operational capability to meet the urgent warfighter need to address rapidly developing threats. To meet this priority, HBTSS must use high technology readiness level components, take advantage of existing government capabilities to minimize development, use a management culture that does not slow down the pace of development, and use Other Transaction Authority (OTA) to minimize contracting cycle times. OTAs allow the Government to work with traditional, non-traditional, and new space businesses to identify innovative solutions.

The HBTSS seeks to demonstrate the ability to meet requirements derived from United States Strategic Command Prioritized Capabilities List, the National Defense Authorization Act for Fiscal Year 2019, and the Joint Requirements Oversight Council Capability Development Document for Missile Warning (MW)/Missile Defense (MD) Overhead Persistent Infrared (OPIR).

HBTSS developed target detection algorithms and evaluated them in a Signal-chain Processing Demonstration, providing insight into the constellation architecture, communications approach, and preliminary command and control design aspects. These results informed the development of the HBTSS prototype demonstration space vehicles and demonstrated the ability to detect and track dim targets in a cluttered background along with the sensitivity necessary to support the hypersonic kill chain.

Like other Missile Defense Agency space sensors, HBTSS is planned to integrate with the existing Joint OPIR Ground architecture for mission tasking and data distribution. This OPIR enterprise architecture will be integrated with the terrestrial Missile Defense System sensors to improve missile defense architecture capabilities.

Following the successful demonstration of HBTSS capabilities, the responsibility for HBTSS operational fielding will be transferred to the US Space Force and the MDA will continue the development of the next-generation of space-based fire control sensors for missile defense.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense System Space Programs	Project (Number/Name) MD42 / Hypersonic & Ballistic Tracking Space Sensor (HBTSS) Prototyping		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
Title: Hypersonic and Ballistic Tracking Space Sensor (HBTSS)		249.890	89.220	68.538
Articles:		-	-	-
Description: HBTSS is a space-based missile tracking sensor/system program to address warfighter requirements. The goal of this effort is to develop prototype space sensors to: -Detect and track hypersonic threats as well as boosting conventional ballistic missiles in their boost phase of flight -Support MW/MD mission -Support other missions, as capable -Leverage inherent multi-domain capabilities to provide as-capable support to the OPIR Enterprise Recurring activities include: - Constellation analysis and mission management design - Ground Segment Sustainment - HBTSS program management, oversight, and mission support Specific and/or unique accomplishments to each FY are as follows: FY 2023 Plans: - Complete Space Vehicle assembly, integration, and test activities - Conduct Ground Readiness Reviews and complete ground system integration and testing - Conduct Payload Calibration and Test Reviews - Conduct Pre-ship Reviews and Launch Readiness Reviews in preparation for launch - Launch on-orbit prototype demonstration Space Vehicles - Conduct early orbit test activities and initiate on-orbit testing FY 2024 Plans: - Complete early orbit test activities and continue on-orbit testing - Conduct daily on-orbit satellite operations - Support the Missile Defense Agency (MDA) test events - Support test events associated with other organizations - Develop and implement Ground and Space Vehicle software updates FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects completion of satellite integration and launch of HBTSS.				
Accomplishments/Planned Programs Subtotals		249.890	89.220	68.538

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency								Date: March 2023			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 1206895C / <i>Ballistic Missile Defense System Space Programs</i>				Project (Number/Name) MD42 / <i>Hypersonic & Ballistic Tracking Space Sensor (HBTSS) Prototyping</i>			

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603890C: <i>BMD Enabling Programs</i>	616.800	588.847	597.720	-	597.720	620.823	639.398	648.954	650.432	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	556.914	589.374	554.201	-	554.201	574.275	585.966	598.896	582.156	Continuing	Continuing
• 0604181C: <i>Hypersonic Defense</i>	281.886	517.977	208.997	-	208.997	218.939	294.326	366.951	644.996	Continuing	Continuing
• 1206893C: <i>Space Tracking and Surveillance System</i>	14.907	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.907

Remarks

D. Acquisition Strategy

The HBTSS acquisition approach uses a phased approach to deliver warfighting capability. Each phase has a limited duration, is capability focused, and allows HBTSS to maintain schedule, reduce risk, and add new technology and capabilities when ready. The current acquisition phase consists of competitive prototyping with multiple performers utilizing Other Transaction authorities. The current phase will culminate with the launch and two-year on-orbit demonstration period where the HBTSS space vehicles will undergo a rigorous test campaign. Following the successful demonstration of HBTSS capabilities, the responsibility for HBTSS operational fielding will be transferred to the US Space Force and the MDA will continue the development of the next-generation of space-based fire control sensors for missile defense.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense System Space Programs				Project (Number/Name) MD42 / Hypersonic & Ballistic Tracking Space Sensor (HBTSS) Prototyping					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Component Testing	MIPR	Lawrence Berkley National Lab : Berkley, CA	0.139	0.000		0.000		0.000		-		0.000	0.000	0.139	0.139
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Ground Segment	Various	Various : Various	0.000	7.609	Nov 2021	2.320	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Ground Segment - Add Sites	C/CPFF	JACOBS TECHNOLOGY INC. : Various	0.000	1.175	Dec 2021	0.000		0.000		-		0.000	0.000	1.175	1.175
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Ground Segment - ESL Integration	C/CPAF	NORTHROP GRUMMAN : AL	0.000	2.000	Nov 2021	2.000	Nov 2022	0.000		-		0.000	0.000	4.000	4.000
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Ground Segment - Network Comms	C/Various	DOD - DEFENSE INFORMATION SYSTEMS AGENCY (DISA) : Various	0.000	0.166	Nov 2021	1.000	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Ground Segment - Sustainment	C/CPIF	JACOBS TECHNOLOGY INC. : CO	38.701	11.563	Nov 2021	6.348	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Launch Services	MIPR	Space Systems Command : CA	0.000	105.317	Dec 2021	0.000		0.000		-		0.000	0.000	105.317	110.000
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Launch Services Payload Integration Facility	C/FFP	ASTROTECH SPACE OPERATIONS : FL	0.000	1.649	Nov 2021	0.000		0.000		-		0.000	0.000	1.649	1.649

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 1206895C / <i>Ballistic Missile Defense System Space Programs</i>						Project (Number/Name) MD42 / <i>Hypersonic & Ballistic Tracking Space Sensor (HBTSS) Prototyping</i>			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Payload Risk Reduction	MIPR	Northrop Grumman : Huntsville, AL	6.269	0.000		0.000		0.000		-		0.000	0.000	6.269	6.269
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Phase IIa Team 1	C/FFP	Harris Corporation : Various	3.995	0.000		0.000		0.000		-		0.000	0.000	3.995	3.995
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Phase IIa Team 2	C/FFP	Leidos : San Diego, CA	3.995	0.000		0.000		0.000		-		0.000	0.000	3.995	3.995
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Phase IIa Team 3	C/FFP	Northrop Grumman : Los Angeles, CA	4.000	0.000		0.000		0.000		-		0.000	0.000	4.000	4.000
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Phase IIa Team 4	C/FFP	Raytheon : Los Angeles, CA	3.959	0.000		0.000		0.000		-		0.000	0.000	3.959	3.959
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Phase IIb Team 1	C/FFP	L-3 COMMUNICATIONS CORPORATION : IN	71.246	45.051	Nov 2021	31.414	Nov 2022	20.214	Nov 2023	-		20.214	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Phase IIb Team 2	C/FFP	NORTHROP GRUMMAN : CA	89.490	57.688	Nov 2021	29.914	Nov 2022	20.214	Nov 2023	-		20.214	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Test Campaign Support	C/Various	Various : Various	0.000	0.000		0.500	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor	MIPR	MASSACHUSETTS INSTITUTE OF TECHNOLOGY : MA	0.000	0.875	Nov 2021	1.500	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 1206895C / <i>Ballistic Missile Defense System Space Programs</i>						Project (Number/Name) MD42 / <i>Hypersonic & Ballistic Tracking Space Sensor (HBTSS) Prototyping</i>			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
(HBTSS) - Test Campaign Support - Science Team															
Subtotal			221.794	233.093		74.996		40.428		-		40.428	Continuing	Continuing	N/A
Remarks N/A															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Contractor Support Services (CSS) Acquisition Support	C/TBD	TBD : VARIOUS	0.000	0.240	Nov 2021	1.095	Nov 2022	1.117	Nov 2023	-		1.117	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Contractor Support Services (CSS) Engineering Services	C/TBD	TBD : VARIOUS	0.000	2.753	Nov 2021	2.831	Nov 2022	3.569	Nov 2023	-		3.569	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Contractor Support Services (CSS) Various and FFRDC/UARC	Various	Various : Various	5.129	1.408	Nov 2021	1.134	Nov 2022	1.218	Nov 2023	-		1.218	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - FFRDC/UARC (Legacy Data)	Various	Various : Various	9.372	0.902	Nov 2021	1.469	Nov 2022	0.000		-		0.000	0.000	11.743	11.743
Hypersonic and Ballistic Tracking Space Sensor	MIPR	DOD - USSF - SPACE SYSTEMS	0.000	3.012	Nov 2021	3.335	Nov 2022	3.163	Nov 2023	-		3.163	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 1206895C / <i>Ballistic Missile Defense System Space Programs</i>						Project (Number/Name) MD42 / <i>Hypersonic & Ballistic Tracking Space Sensor (HBTSS) Prototyping</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
(HBTSS) - FFRDC/UARC Aerospace		COMMAND (SSC) : CA													
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - FFRDC/UARC SDL	C/CPFF	UTAH STATE UNIVERSITY RESEARCH FOUNDATION : VARIOUS	0.000	3.742	Nov 2021	2.512	Nov 2022	3.562	Nov 2023	-		3.562	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Ground Segment Network Comms	MIPR	DOD - DEFENSE INFORMATION SYSTEMS AGENCY (DISA) : VARIOUS	0.000	0.000		0.000		1.000	Nov 2023	-		1.000	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Ground Segment Sustainment	C/CPFF	JACOBS TECHNOLOGY INC. : CO	0.000	0.000		0.000		6.250	Nov 2023	-		6.250	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Ground Segment Various	Various	Various : VARIOUS	0.000	0.000		0.000		1.200	Nov 2023	-		1.200	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - MDA Civilian	Allot	MDA : Various	0.536	1.316	Nov 2021	1.370	Oct 2022	1.399	Oct 2023	-		1.399	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Program Mission Support	Various	Various : VARIOUS	1.308	2.299	Nov 2021	0.478	Nov 2022	0.632	Nov 2023	-		0.632	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Test Campaign Support	TBD	Various : VARIOUS	0.000	0.000		0.000		5.000	Nov 2023	-		5.000	Continuing	Continuing	Continuing
Hypersonic and Ballistic Tracking Space Sensor (HBTSS) - Threat Tracking Advancements	C/CPFF	NORTHROP GRUMMAN : CO	0.000	1.125	Dec 2021	0.000		0.000		-		0.000	0.000	1.125	1.125
Subtotal			16.345	16.797		14.224		28.110		-		28.110	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023					
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense System Space Programs						Project (Number/Name) MD42 / Hypersonic & Ballistic Tracking Space Sensor (HBTSS) Prototyping					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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	
Remarks N/A																	
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			238.139	249.890		89.220		68.538		-		68.538	Continuing	Continuing	N/A		
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency										Date: March 2023																	
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense System Space Programs										Project (Number/Name) MD42 / Hypersonic & Ballistic Tracking Space Sensor (HBTSS) Prototyping												
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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028										
Long Lead Procurement					◆																						
Critical Design Reviews					▲																						
Spacecraft Bus Procurement					◆	◆																					
Payload Assembly/Integration/Test					◇	◇	◇	◇	◇	◇																	
Ground System Development Q1 FY 2022 - Q4 FY 2022					◆	◆	◆	◆																			
Payload Calibration Test Review (PCTR)											△																
Space Vehicle Assembly/Integration/Test								◇	◇	◇	◇																
Ground Readiness Review (GRR)											△																
Pre-Ship Review (PSR)											△																
Launch Readiness Review (LRR)											△																
HBTSS Phase IIb Launch											◇																
Launch and Early Orbit Test (LEOT)											◇	◇															
On-Orbit Testing											◇	◇	◇	◇	◇	◇	◇	◇									
FTX-40 (AEGIS 5.1, DT Tracking Exercise Flight Test)												△															
FTX-23 (AEGIS 5.1, DT Tracking Exercise Flight Test)												△															
FTX-28 E2 (TH, DT/OT Tracking Exercise Flight Test)													△														
FTX-28 E1 (TH, DT/OT Tracking Exercise Flight Test)													△														
FTX-28 E3 (TH, DT/OT Tracking Exercise Flight Test)													△														
FTM-37 (AEGIS 5.1, DT/OT Intercept Flight Test)															△												
FTM-43 (AEGIS 5.1, DT/OT Intercept Flight Test)																△											
JFTX-01 E1 (JAPAN, DT Tracking Exercise Flight Test)																	△										
JFTX-01 E2 (JAPAN, DT Tracking Exercise Flight Test)																	△										
FTT-26 (MRBM T1)																	△										
FTM-30 (AEGIS 5.1, DT/OT Intercept Flight Test)																		△									

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD42 / <i>Hypersonic & Ballistic Tracking Space Sensor (HBTSS) Prototyping</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Long Lead Procurement	1	2022	1	2022
Critical Design Reviews	1	2022	1	2022
Spacecraft Bus Procurement	1	2022	2	2022
Payload Assembly/Integration/Test	1	2022	2	2023
Ground System Development Q1 FY 2022 - Q4 FY 2022	1	2022	4	2022
Payload Calibration Test Review (PCTR)	3	2023	3	2023
Space Vehicle Assembly/Integration/Test	4	2022	3	2023
Ground Readiness Review (GRR)	3	2023	3	2023
Pre-Ship Review (PSR)	3	2023	3	2023
Launch Readiness Review (LRR)	4	2023	4	2023
HBTSS Phase IIb Launch	4	2023	4	2023
Launch and Early Orbit Test (LEOT)	4	2023	1	2024
On-Orbit Testing	1	2024	1	2026
FTX-40 (AEGIS 5.1, DT Tracking Exercise Flight Test)	2	2024	2	2024
FTX-23 (AEGIS 5.1, DT Tracking Exercise Flight Test)	2	2024	2	2024
FTX-28 E2 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024
FTX-28 E1 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024
FTX-28 E3 (TH, DT/OT Tracking Exercise Flight Test)	3	2024	3	2024
FTM-37 (AEGIS 5.1, DT/OT Intercept Flight Test)	1	2025	1	2025
FTM-43 (AEGIS 5.1, DT/OT Intercept Flight Test)	2	2025	2	2025
JFTX-01 E1 (JAPAN, DT Tracking Exercise Flight Test)	3	2025	3	2025
JFTX-01 E2 (JAPAN, DT Tracking Exercise Flight Test)	3	2025	3	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense System Space Programs		Project (Number/Name) MD42 / Hypersonic & Ballistic Tracking Space Sensor (HBTSS) Prototyping	
	Start		End	
Events	Quarter	Year	Quarter	Year
FTT-26 (MRBM T1)	3	2025	3	2025
FTM-30 (AEGIS 5.1, DT/OT Intercept Flight Test)	4	2025	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense System Space Programs				Project (Number/Name) MC33 / MD Space Exp Center (MDSEC)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC33: MD Space Exp Center (MDSEC)	11.215	1.324	1.506	1.690	-	1.690	1.744	1.783	1.820	1.857	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from Fiscal Year (FY) 2023 to FY 2024 provides for additional civilian oversight of cyber activities.

A. Mission Description and Budget Item Justification

Ballistic Missile Defense System Space Programs Cyber Operations sustain the Missile Defense Agency (MDA) Risk Management Framework (RMF) and Security Controls Assessments (SCA)/Controls Validation Testing activities, analysis of validation results, risk assessments, and reviews of proposed Program Manager/Information System Security Manager Plans of Action and Milestones (POA&Ms) for Ballistic Missile Defense System Space Program mission systems. Activities in this Project are necessary to comply with the Federal Information Security Management Act.

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

	FY 2022	FY 2023	FY 2024
Title: Network / System Certification and Accreditation (C&A)	1.324	1.506	1.690
Articles:	-	-	-
<p>Description: This activity maintains the Assessment and Authorization and C&A data repository, capturing the RMF documentation (artifacts, validation results, and Information Assurance Risk Assessment results, and Designated Approving Authority (DAA) accreditation decisions) and POA&Ms on all MDA information systems. This activity prepares and submits C&A documentation and accreditation recommendations to the MDA Chief Information Officer/Certification Authority and the DAA. Independent Verification and Validation team actions ensure the availability, integrity, authentication, confidentiality, and non-repudiation of the MDA mission, test, and administrative systems. Recurring accomplishments include the following:</p> <ul style="list-style-type: none"> - Monitor and track cybersecurity and mitigations detailed in Information Technology security POA&Ms - Conduct cybersecurity design, engineering, and architecture planning for information technology systems - Plan and test the cybersecurity controls for space systems - Conduct SCA testing continuous monitoring of mission systems and provide POA&Ms to mitigate cybersecurity vulnerabilities <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: SEE ABOVE</p> <p>FY 2024 Plans:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MC33 / <i>MD Space Exp Center (MDSEC)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
SEE ABOVE			
FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides for additional civilian oversight of cyber activities			
Accomplishments/Planned Programs Subtotals		1.324	1.506
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy N/A			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense System Space Programs				Project (Number/Name) MC33 / MD Space Exp Center (MDSEC)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - CORE Upgrade	C/CPAF	Northrop Grumman : Schriever AFB, CO	1.157	0.000		0.000		0.000		-		0.000	0.000	1.157	1.157
Network / System Certification and Accreditation (C&A) - Contractor Support Services (CSS)	C/Various	Various : Various	2.474	1.324	Nov 2021	0.108	Nov 2022	0.000		-		0.000	0.000	3.906	3.906
Network / System Certification and Accreditation (C&A) - Cybersecurity Management and Computer Network Defense - CSS	C/Various	TBD : Various	0.000	0.000		1.237	Nov 2022	0.000		-		0.000	0.000	1.237	1.237
Network / System Certification and Accreditation (C&A) - MDSEA Solutions	C/CPIF	Jacobs : Schriever AFB, CO	3.471	0.000		0.000		0.000		-		0.000	0.000	3.471	1.106
Network / System Certification and Accreditation (C&A) - Network/Comm Assurance	Various	Various : Various	1.813	0.000		0.000		0.000		-		0.000	0.000	1.813	1.648
Network / System Certification and Accreditation (C&A) - SKA Communications	C/CPFF	JHU/APL : MD	0.360	0.000		0.000		0.000		-		0.000	0.000	0.360	0.360
Network / System Certification and Accreditation (C&A) - Strengthening Risk Management Framework	C/CPAF	Northrop Grumman, Various : Schriever AFB, CO	1.940	0.000		0.000		0.000		-		0.000	0.000	1.940	3.917
Subtotal			11.215	1.324		1.345		0.000		-		0.000	0.000	13.884	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 1206895C / <i>Ballistic Missile Defense System Space Programs</i>				Project (Number/Name) MC33 / <i>MD Space Exp Center (MDSEC)</i>					

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Remarks N/A															

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - Contractor Support Services (CSS)	C/TBD	TBD : TBD	0.000	0.000		0.000		1.355	Nov 2023	-		1.355	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - MDA Civilian	Allot	MDA : CO	0.000	0.000		0.161	Oct 2022	0.335	Oct 2023	-		0.335	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.161		1.690		-		1.690	Continuing	Continuing	N/A
Remarks N/A															

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	11.215	1.324	1.506	1.690	-	1.690	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.									

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency														Date: March 2023																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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MC33 Cyber Operations Planned										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense System Space Programs	Project (Number/Name) MC33 / MD Space Exp Center (MDSEC)	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC33 Cyber Operations Planned	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense Sy stem Space Programs				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: Program-Wide Support	3.935	5.165	4.719	3.888	-	3.888	4.314	1.739	1.781	1.994	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Wide Support (PWS) is allocated on a pro-rata basis across multiple Agency Program Elements (PE) 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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2022	FY 2023	FY 2024
Title: Program Wide Support	5.165	4.719	3.888
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<p>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.</p> <p><i>FY 2023 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2024 Plans:</i> - SEE ABOVE.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Decrease from FY 2023 to FY 2024 reflects the PWS allocation on a pro-rata basis across multiple Agency PE's each fiscal year based on the total Agency budget, and therefore fluctuates per PE by fiscal year.</p>			
Accomplishments/Planned Programs Subtotals		5.165	4.719
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense System Space Programs				Project (Number/Name) MD40 / Program-Wide Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Facilities and Maintenance	MIPR	Army Corps of Engineers : Multi: AL, CA, CO, VA	0.371	0.023	Nov 2021	2.481	Nov 2022	1.255	Nov 2023	-		1.255	Continuing	Continuing	Continuing
Program Wide Support - Agency Facilities and Maintenance SRM	MIPR	Army Corps of Engineers : Multi: AK, AL, CA, CO, HI, NY, VA	0.000	0.029	Nov 2021	1.700	Nov 2022	2.633	Nov 2023	-		2.633	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	C/CPAF	Various Multi: AL, CA, : CO, VA	0.080	0.000		0.000		0.000		-		0.000	0.000	0.080	0.000
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	Various : Multi: AK, AL, CO, CA, HI, MD, VA	0.000	0.380	Nov 2021	0.000		0.000		-		0.000	0.000	0.380	0.000
Program Wide Support - Agency Operations and Support Services	MIPR	DOD - WASHINGTON HEADQUARTERS SERVICES (WHS) : VA	3.484	4.733	Nov 2021	0.538	Dec 2022	0.000		-		0.000	0.000	8.755	0.000
Program Wide Support - Agency Operations, Sustainment and GPC	C/FFP	Various : Multi: AK, AL, CA, HI, NY, VA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	0.000
Subtotal			3.935	5.165		4.719		3.888		-		3.888	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			3.935	5.165		4.719		3.888		-		3.888	Continuing	Continuing	N/A
Remarks Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Missile Defense Agency															Date: March 2023																						
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense System Space Programs										Project (Number/Name) MD40 / Program-Wide Support																	
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 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
MD40 Program-Wide Support										◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency			Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 1206895C / Ballistic Missile Defense System Space Programs	Project (Number/Name) MD40 / Program-Wide Support	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide I BA 6: RDT&E Management Support					R-1 Program Element (Number/Name) PE 0605502C I Small Business Innovation Research - MDA							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	107.641	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	107.641
MD45: Small Business Innovation Research	-	107.641	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	107.641
Program MDAP/MAIS Code: 362												
Note Funds are transferred into this Program Element (PE) in the execution year.												
A. Mission Description and Budget Item Justification Small Business Innovation Research (SBIR) explores innovative concepts pursuant to Public Law 106-554 (Small Business Reauthorization Act of 2000) and Public Law 107-50 (Small Business Technology Transfer Program Reauthorization Act of 2001), which mandates a two-phase competition for small businesses with innovative technology that can be commercialized. SBIR and Small Business Technology Transfer (STTR) programs will develop new dual-use technology for future Missile Defense Agency (MDA) Missile Defense System needs. Dual-use means that the technology will be judged on the potential for future private sector investment both as a vehicle for reducing development time and cost, unit costs of new Missile Defense System technology, and as a route to national economic growth through new commercial products. MDA will conduct the competition, award, and manage the contracts.												
B. Program Change Summary (\$ in Millions)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total				
Previous President's Budget				0.000	0.000	0.000	-	0.000				
Current President's Budget				107.641	0.000	0.000	-	0.000				
Total Adjustments				107.641	0.000	0.000	-	0.000				
• Congressional General Reductions				0.000	0.000							
• Congressional Directed Reductions				0.000	0.000							
• Congressional Rescissions				0.000	0.000							
• Congressional Adds				0.000	0.000							
• Congressional Directed Transfers				0.000	0.000							
• Reprogrammings				0.000	0.000							
• SBIR/STTR Transfer				107.641	0.000							
• Other Adjustment				0.000	0.000	0.000	-	0.000				
Change Summary Explanation FY 2022 funds were transferred to SBIR/STTR from other PEs in accordance with the SBIR/STTR Reauthorization Act of 2011.												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605502C / Small Business Innovation Research - MDA				Project (Number/Name) MD45 / Small Business Innovation Research			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD45: Small Business Innovation Research	-	107.641	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	107.641
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

Small Business Innovation Research (SBIR) explores innovative concepts pursuant to Public Law 106-554 (Small Business Reauthorization Act of 2000) and Public Law 107-50 (Small Business Technology Transfer Program Reauthorization Act of 2001), which mandates a two-phase competition for small businesses with innovative technology that can be commercialized. SBIR and Small Business Technology Transfer (STTR) programs will develop new dual-use technology for future Missile Defense Agency (MDA) Missile Defense System needs. Dual-use means that the technology will be judged on the potential for future private sector investment both as a vehicle for reducing development time and cost, unit costs of new Missile Defense System technology, and as a route to national economic growth through new commercial products. MDA will conduct the competition, award, and manage the contracts.

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

	FY 2022	FY 2023	FY 2024
Title: Small Business Innovation Research - MDA	107.641	0.000	0.000
Articles:	-	-	-
Description: MDA currently supports the Office of the Secretary of Defense (Research & Engineering) SBIR/STTR Office Critical Technology Areas as follows: Seed Areas of Emerging Opportunity: - Biotechnology - Quantum Science - Future Generation Wireless Technology - Advanced Materials Effective Adoption Areas (Where there is existing vibrant commercial sector activity): - Trusted Artificial Intelligence and Autonomy - Integrated Network Systems-of-Systems - Microelectronics - Space Technology			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605502C / <i>Small Business Innovation Research - MDA</i>	Project (Number/Name) MD45 / <i>Small Business Innovation Research</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023
<ul style="list-style-type: none"> - Renewable Energy Generation and Storage - Advanced Computing and Software - Human-Machine Interfaces <p>Defense-Specific Areas:</p> <ul style="list-style-type: none"> - Directed Energy - Hypersonics - Integrated Sensing and Cyber <p><i>FY 2023 Plans:</i> Funds are transferred into this Program Element in the execution year. MDA plans to execute approximately \$115 million in fiscal year 2023 to support the above mentioned activities.</p> <p><i>FY 2024 Plans:</i> Funds are transferred into this Program Element in the execution year. MDA plans to execute approximately \$129 million in fiscal year 2024 to support the above mentioned activities. Final amount to be determine by enactment.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> N/A</p>			
Accomplishments/Planned Programs Subtotals		107.641	0.000
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy N/A			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency	Date: March 2023
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Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 6: RDT&E Management Support	R-1 Program Element (Number/Name) PE 0901598C / Management HQ - MDA
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	309.912	24.102	25.259	28.363	-	28.363	29.039	29.601	30.174	30.760	Continuing	Continuing
MD38: Management Headquarters	309.912	24.102	25.259	28.363	-	28.363	29.039	29.601	30.174	30.760	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Increase from FY23 to FY24 provides an increase to pay raise assumptions.

A. Mission Description and Budget Item Justification

As prescribed by Department of Defense Instruction 5100.73 Major Headquarters Activities (MHA), MDA's MHA Program Element supports the operation of MDA and funds government civilian salaries and benefits, travel, contract support services, and operations of non-fielded activities.

MHA provides executive leadership planning, develops centralized agency policy, prepares and defends annual budget submissions, responds to external inquiries, and implements Secretary of Defense and Presidential priorities. As a DoD research, development and acquisition agency, the Headquarters Activities provide cost efficient oversight, direction, and control of initiatives and processes that assure best value, high quality, on-time, and successful performance of MDA acquisition programs. This is accomplished by ensuring acquisition and procurement program management emphasizes systems engineering; incorporates life cycle management objectives; implements risk management; and assesses cost, schedule or performance trade-offs.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	24.102	25.259	25.836	-	25.836
Current President's Budget	24.102	25.259	28.363	-	28.363
Total Adjustments	0.000	0.000	2.527	-	2.527
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	2.527	-	2.527

Change Summary Explanation

Increase from FY23 to FY24 provides an increase to pay raise assumptions.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0901598C / Management HQ - MDA				Project (Number/Name) MD38 / Management Headquarters			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD38: Management Headquarters	309.912	24.102	25.259	28.363	-	28.363	29.039	29.601	30.174	30.760	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from FY23 to FY24 provides an increase to pay raise assumptions.

A. Mission Description and Budget Item Justification

The MDA Headquarters provides oversight, direction and control over MDA's acquisition programs and fielded systems. The MDA Headquarters staff functions (government salaries, government travel, and contract support services) support the mission and operations of the world-wide MDA mission.

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

	FY 2022	FY 2023	FY 2024
Title: MHA Civilian Salaries Articles: Description: Provide mission support, oversight, and management of: - Acquisition, implementation of international initiatives to increase missile defense coverage to deployed forces and allies, efficiency-oriented administrative services, business operations, financial resources, human capital, general counsel, internal review, public affairs, and media release. Specific and/or unique accomplishments to each FY are as follows: FY 2023 Plans: - SEE ABOVE. FY 2024 Plans: - SEE ABOVE. FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY23 to FY24 provides an increase to pay raise assumptions.	17.211 -	15.806 -	18.750 -
Title: MHA Travel Articles: Description: Provide mission essential government travel. FY 2023 Plans:	0.309 -	0.911 -	0.922 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0901598C / <i>Management HQ - MDA</i>	Project (Number/Name) MD38 / <i>Management Headquarters</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
<p>- SEE ABOVE.</p> <p>FY 2024 Plans: - SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>			
<p>Title: MHA Contract Services</p> <p align="right">Articles:</p> <p>Description: Provide contract support services to mission activities for acquisition, business operations, internal review, general counsel, administrative support and public affairs.</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2024 Plans: - SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>	6.582 -	8.542 -	8.691 -
Accomplishments/Planned Programs Subtotals	24.102	25.259	28.363

<p>C. Other Program Funding Summary (\$ in Millions) N/A</p> <p>Remarks</p>
<p>D. Acquisition Strategy</p> <p>The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services support.</p>

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