

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Missile Defense Agency **Date:** May 2021

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>Missile Defense Integration and Operations Center (MDIOC)</i>
---	--

COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	524.393	54.783	55.356	52.403	-	52.403	-	-	-	-	-	-
MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	496.338	51.633	52.519	49.740	-	49.740	-	-	-	-	-	-
MC22: <i>Cyber Operations</i>	3.211	0.618	0.638	0.638	-	0.638	-	-	-	-	-	-
MD40: <i>Program-Wide Support</i>	24.844	2.532	2.199	2.025	-	2.025	-	-	-	-	-	-

Program MDAP/MAIS Code: 362

Note

N/A

A. Mission Description and Budget Item Justification

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 (MDS) operations executing missions at the MDIOC. The Integration Center is the organization 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 Air Force Base, just east of North American Aerospace Defense Command (NORAD) and United States Northern Command (USNORTHCOM). The MDIOC provides mission critical 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 Information Assurance 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 MDS 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 MDS fire control; and it provides the physical interface between the developers and the Combatant Command (CCMD) warfighters.

MDIOC mission facilities contribute to the MDS by directly supporting the concept of Concurrent Test, Training, and Operations (CTTO) for the MDS by providing mission assurance, engineering integration, resource scheduling, configuration management, and implementation development support for MDA and MDS-level test, training, and operational mission execution.

MDIOC Major Program Goals:

- Provide the capabilities and services necessary to support mission assurance, engineering integration, resource scheduling for ground and flight tests, configuration

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Missile Defense Agency	Date: May 2021
---	-----------------------

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>Missile Defense Integration and Operations Center (MDIOC)</i>
---	--

management, and implementation development support of on-site activities

- Ensure around the clock support and restoral of designated MDS operational activities
- Improve 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)	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022 Base</u>	<u>FY 2022 OCO</u>	<u>FY 2022 Total</u>
Previous President's Budget	56.161	55.356	55.721	-	55.721
Current President's Budget	54.783	55.356	52.403	-	52.403
Total Adjustments	-1.378	0.000	-3.318	-	-3.318
• 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	-1.378	0.000			
• Missile Defeat and Defense Enhancement	0.000	0.000	0.000	-	0.000
• Other Adjustment	0.000	0.000	-3.318	-	-3.318

Change Summary Explanation

N/A

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency **Date:** May 2021

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)			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	496.338	51.633	52.519	49.740	-	49.740	-	-	-	-	-	-
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 critical research, development, testing, training, and operations for Missile Defense System (MDS) 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 Tracking and Surveillance System's (STSS) Missile Defense Space Center (MDSC); and the Targets and Countermeasures' (TC) Mission Control Center - Targets (MCC-T). The MDIOC also provides developmental support to the Enterprise Sensors Laboratory (ESL) composed of a common satellite ground station and sensor netting test bed for designated MDS elements. The MDIOC supports MDS test events based on the Integrated Master Test Plan (IMTP). It supports MDS Critical Engagement Conditions testing and analysis through the operation of the Test Execution Control node for distributed MDS 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 (USNORTHCOM) C2BMC Command and Control Center (CCC), the United States Strategic Command's (USSTRATCOM's) Joint Functional Component Command-Integrated Missile Defense (JFCC-IMD) and the Missile Defense Agency (MDA) Warfighter Support Center. In addition, the MDIOC supports the MDA Operations Support Center, which provides situational awareness on the health and status of the end-to-end MDS, and provides network subject matter expertise and technical reach back for the program elements and Combatant Commanders. The MDIOC hosts MDS 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 MDS performance assessments, with surrogate capability for MDS ground tests. The MDIOC maintains a technical repository of MDS Implementation Architectures for real-time operations and configuration control; provides state change management and asset management technical support for the MDS; and provides the technical environment for MDS 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 (JEWL), 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 2020	FY 2021	FY 2022
Title: Infrastructure Systems and Support	18.511	18.476	15.962
Articles:	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency		Date: May 2021
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 2020	FY 2021	FY 2022
<p>Description: RECURRING: MDIOC Communications and Special Purpose Processing Node (SPPN):</p> <ul style="list-style-type: none"> - Establish a DoD compliant SPPN capable of meeting the unique network and data center services required to develop and deploy a layered MDS 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 MDS acquisition lifecycle - Construct the SPPN infrastructure with routers, switches, firewalls, and intrusion detection systems that provide 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 MDS 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 administrative and business 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) 			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency		Date: May 2021		
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 2020	FY 2021	FY 2022
<ul style="list-style-type: none"> - 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 BlackBerrys) <p>Hardware and Software Asset Management:</p> <ul style="list-style-type: none"> - Manage government property and IT hardware and software in accordance with the Federal Acquisition Regulations (FAR)/DoD FAR Supplements (DFARs) to include accountability, reporting, warehouse management, asset transportation and excess asset management - Maintain an inventory of IT hardware and software assets connected or used in the Unclassified Local Area Network (ULAN), Classified Local Area Network (CLAN), Secret Internet Protocol Router Network (SIPRNET) and Top Secret/Special Compartmented Information (TS/SCI) networks - Specific and/or unique accomplishments to each FY are as follows: <p>FY 2021 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE <p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE <p>FY 2021 to FY 2022 Increase/Decrease Statement:</p> <p>Decrease from FY 2021 to FY 2022 reflects a realignment of engineering rigor and configuration management efforts from Network Infrastructure and Support to Facilities Mission Engineering and Event Support.</p>				
Title: Facilities and Maintenance		14.548	12.417	11.860
		Articles:	-	-
<p>Description: RECURRING:</p> <p>Host Tenant Support (Electrical, Gas, Sewer, Water, Steam, Chilled Water, Waste Water, Landscaping, Refuse Removal, and Communications Support):</p> <ul style="list-style-type: none"> - Procure utility services through 50th Air Force Space Wing (Host Base) - Sustain utility infrastructure and delivery systems <p>Environmental, Safety and Occupational Health (ESOH):</p> <ul style="list-style-type: none"> - Maintain and update the program accident prevention plan - Provide required industrial safety training to facility services personnel - Procure and distribute personal protection equipment for contracted activities 				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency		Date: May 2021		
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 2020	FY 2021	FY 2022
<p>- Ensure compliance with Hazardous Waste, Hazardous Material Recycling, and National Environmental Policy Act (NEPA) programs</p> <p>- Conduct recurring safety and environmental audits</p> <p>Facilities Operations and Sustainment:</p> <p>- 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</p> <p>- Conduct preventative maintenance inspections (PMLs) for all building systems</p> <p>Facilities Engineering:</p> <p>- Conduct Management Process Facility Installation Standard Audits</p> <p>- Provide risk management analysis and mitigation plans</p> <p>- Maintain infrastructure drawings and configuration management databases</p> <p>- Develop and document facility long range planning programming</p> <p>- Provide consulting services, preliminary designs and engineering rough order of magnitude estimates for required infrastructure buildout changes</p> <p>Missile Defense Integration and Operations Center (MDIOC) Operating Expenses:</p> <p>- Lease General Services Administration (GSA) vehicles and a commercial warehouse</p> <p>- Calibration of measuring and monitoring equipment</p> <p>- Repair of classified and unclassified networks</p> <p>Facility Services:</p> <p>- Provide custodial services for over 675,000 square feet of floor space in Buildings 720 and 730</p> <p>- Provide Copy Center and Shuttle Services for over 2,000 personnel</p> <p>- Provide in and out of civilian and contractor support services personnel</p> <p>- Conduct personnel moves to include cubicle and workstation setup, teardown, and reconfiguration</p> <p>- Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2021 Plans:</p> <p>- SEE ABOVE</p> <p>FY 2022 Plans:</p>				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency		Date: May 2021		
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 2020	FY 2021	FY 2022
- SEE ABOVE				
FY 2021 to FY 2022 Increase/Decrease Statement: N/A				
Title: Engineering and Event Services		10.977	13.951	15.317
Articles:		-	-	-
Description: RECURRING: - Provide Mission Assurance by ensuring the successful execution of Concurrent Test, Training, and Operations (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 by developing effective solutions through a structured, repeatable process for MDIOC engineering activities. Provide governance and training to stakeholders, enforce policy, establish and maintain a unified board structure 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 Technical Baseline, IT, 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				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency		Date: May 2021		
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 2020	FY 2021	FY 2022
<p>- Provide Event Architecture and Engineering Design by coordinating design and implementation of technical architectures for all major MDIOC hosted/supported CTTO activities. Maintain a repository of architectures for real-time configuration management</p> <p>- Provide cradle to grave event management for MDIOC supported CTTO events</p> <p>- Provide a Mission Planning Element to oversee the event support life cycle provided by the MDIOC engineering and event support platform. Ensure the fulfillment of technical, personnel, facility, and cybersecurity requirements</p> <p>- Provide a Mission Execution Element to ensure asset protection and incident response for all MDIOC supported CTTO events</p> <p>- Ensure Organizational Integration by establishing and enforcing seamless integration across the MDIOC. Provide a repeatable process for information sharing and coordination</p> <p>- Provide Cybersecurity to ensure the protection of MDIOC networks, computers, programs and data from attack, damage or unauthorized access</p> <p>- 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</p> <p>- Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2021 Plans: - SEE ABOVE</p> <p>FY 2022 Plans: - SEE ABOVE</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Increase from FY 2021 to FY 2022 provides a realignment of engineering rigor and configuration management effort from Network Infrastructure and Support to Facilities Mission Engineering and Event Support.</p>				
Title: Operations and Sustainment		3.850	4.198	3.272
		Articles: -	-	-
<p>Description: RECURRING:</p> <p>- Includes Civilian and Contract Service Support for operations and sustainment of all Missile Defense Integration and Operations Center (MDIOC) activities contributing to the mission execution platform</p> <p>- Provide quality event planning, coordination, logistics, security access and host support for all MDIOC events and visitors</p> <p>- Deliver integrated service coordination for all MDIOC event and protocol support</p>				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency		Date: May 2021
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 2020	FY 2021	FY 2022
- Training and Travel - Specific and/or unique accomplishments to each FY are as follows: FY 2021 Plans: - SEE ABOVE FY 2022 Plans: - SEE ABOVE FY 2021 to FY 2022 Increase/Decrease Statement: N/A			
Title: Infrastructure Systems Repair, Sustainment, and Critical Upgrades Description: RECURRING: - Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity upgrade to improve mission assurance to critical mission areas within Building 720; Fire Suppression System Compliance Project - Specific and/or unique accomplishments to each FY are as follows: FY 2021 Plans: - SEE ABOVE FY 2022 Plans: - SEE ABOVE FY 2021 to FY 2022 Increase/Decrease Statement: N/A	3.747 -	3.477 -	3.329 -
Articles:			
Accomplishments/Planned Programs Subtotals	51.633	52.519	49.740

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

Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	295.312	312.317	277.949	-	277.949	-	-	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency **Date:** May 2021

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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,275.414	1,219.261	745.144	-	745.144	-	-	-	-	-	-
• 0603890C: <i>BMD Enabling Programs</i>	630.196	616.455	595.301	-	595.301	-	-	-	-	-	-
• 0603892C: <i>AEGIS BMD</i>	722.582	877.336	732.512	-	732.512	-	-	-	-	-	-
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	550.513	645.741	603.448	-	603.448	-	-	-	-	-	-
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	51.095	49.560	50.594	-	50.594	-	-	-	-	-	-
• 0603914C: <i>Ballistic Missile Defense Test</i>	398.939	365.208	362.906	-	362.906	-	-	-	-	-	-

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 MDS Research, Development, Test and Evaluation (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.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Missile Defense Agency												Date: May 2021			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)				MD22 / Missile Defense Integration and Operations Center (MDIOC)							
Support (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	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 - MDIOC JRDC/IRES	C/CPAF	MDIOC/Northrop Grumman Mission Systems : Colorado Springs, CO	190.805	0.000		0.000		0.000		-		0.000	0.000	190.805	0.000
Infrastructure Systems and Support - Network Infrastructure Systems/ Support	C/CPIF	MDIOC/Jacobs Technology Inc. : Colorado Springs, CO	1.000	18.511	Nov 2019	18.476	Dec 2020	15.962	Dec 2021	-		15.962	Continuing	Continuing	Continuing
Facilities and Maintenance - MDIOC Custodial/ Mailroom/Drivers	C/FFP	MDIOC/Ability One/ Venturi : Colorado Springs, CO	6.742	1.992	Dec 2019	2.032	Dec 2020	2.122	Nov 2021	-		2.122	Continuing	Continuing	Continuing
Facilities and Maintenance - MDIOC GSA / Leases	MIPR	GSA, Warehouses : Colorado Springs, CO	8.344	0.260	Oct 2019	0.278	Nov 2020	0.277	Nov 2021	-		0.277	Continuing	Continuing	Continuing
Facilities and Maintenance - MDIOC IRES	C/CPIF	MDIOC/Jacobs Technology Inc. : Colorado Springs, CO	13.273	8.500	Jan 2020	6.257	Dec 2020	5.534	Nov 2021	-		5.534	Continuing	Continuing	Continuing
Facilities and Maintenance - MDIOC MIPR	C/FFP	Raytheon/Hill AFB : Colorado Springs, CO	93.640	0.424	Nov 2019	0.405	Nov 2020	0.413	Nov 2021	-		0.413	Continuing	Continuing	Continuing
Facilities and Maintenance - MDIOC Utilities	MIPR	50th Space Wing : Schriever AFB, CO	26.596	3.372	Oct 2019	3.445	Oct 2020	3.514	Oct 2021	-		3.514	Continuing	Continuing	Continuing
Engineering and Event Services - Facilities Mission Engineering and Event Support	C/CPAF	MDIOC /Jacobs Technology Inc. : Colorado Springs, CO	83.716	10.977	Nov 2019	13.951	Nov 2020	15.317	Nov 2021	-		15.317	Continuing	Continuing	Continuing
Operations and Sustainment - Civilian Salaries	Allot	MDIOC : Colorado Springs, CO	28.606	1.938	Oct 2019	2.391	Oct 2020	1.634	Oct 2021	-		1.634	Continuing	Continuing	Continuing
Operations and Sustainment - Support Services	C/CPFF	MiDAESS/TEAMS Various : Colorado Springs, CO	22.807	1.862	Oct 2019	1.757	Oct 2020	1.620	Nov 2021	-		1.620	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Missile Defense Agency **Date:** May 2021

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 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Operations and Sustainment - Travel and Training	Allot	MDIOC : Colorado Springs, CO	0.803	0.050	Nov 2019	0.050	Oct 2020	0.018	Nov 2021	-		0.018	Continuing	Continuing	Continuing
Infrastructure Systems Repair, Sustainment, and Critical Upgrades - MDIOC IRES	C/CPAF	MDIOC/Jacobs Technology Inc. : Colorado Springs, CO	20.006	3.747	Jan 2020	3.477	Dec 2020	3.329	Dec 2021	-		3.329	Continuing	Continuing	Continuing
Subtotal			496.338	51.633		52.519		49.740		-		49.740	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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	496.338	51.633	52.519	49.740	-	49.740	Continuing	Continuing	N/A

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

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Missile Defense Agency **Date: May 2021**

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>
--	--	---

Activity	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026					
	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆		
Re-purpose basement space to accommodate IT and Infrastructure support personnel (Phase IV)	◆	◆																												
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (one quadrant) 2020	◆	◆	◆	◆																										
Install Ambient Air Economizer (greening initiative) 2020	◆	◆	◆	◆																										
Replace Heating, Ventilation, and Air Conditioning (HVAC) Chilled Water Pumps (North and South Loops) 2020	◆	◆	◆	◆																										
Fire Suppression System Compliance Project (two quadrants)(FY 2020)		◆	◆	◆																										
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (one quadrant) 2021					◇	◇	◇	◇																						
Fire Suppression System Compliance Project (two quadrants)(FY 2021)						◇	◇	◇																						
Availability/Arc Flash/Short Circuit Coordination Study 2021							◇																							
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (one quadrant) 2022											◇	◇	◇	◇																
Fire Suppression System Compliance Project (two quadrants) (FY 2022)											◇	◇	◇	◇																

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Missile Defense Agency		Date: May 2021
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
Re-purpose basement space to accommodate IT and Infrastructure support personnel (Phase IV)	1	2020	2	2020
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (one quadrant) 2020	1	2020	4	2020
Install Ambient Air Economizer (greening initiative) 2020	1	2020	4	2020
Replace Heating, Ventilation, and Air Conditioning (HVAC) Chilled Water Pumps (North and South Loops) 2020	1	2020	4	2020
Fire Suppression System Compliance Project (two quadrants)(FY 2020)	2	2020	4	2020
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (one quadrant) 2021	1	2021	4	2021
Fire Suppression System Compliance Project (two quadrants)(FY 2021)	2	2021	4	2021
Availability/Arc Flash/Short Circuit Coordination Study 2021	3	2021	3	2021
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity for Building 720 (one quadrant) 2022	1	2022	4	2022
Fire Suppression System Compliance Project (two quadrants) (FY 2022)	1	2022	4	2022

Note

Based on the OUSD(C) FY 2022 President's Budget Submission Guidance, fiscal years covered in the justification material will include FY 2020 through FY 2022. Planned entries in the R4 may continue past FY 2022, out-years will be addressed in future budget submissions.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency **Date:** May 2021

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) MC22 / <i>Cyber Operations</i>
--	--	--

COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
MC22: <i>Cyber Operations</i>	3.211	0.618	0.638	0.638	-	0.638	-	-	-	-	-	-
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 2020	FY 2021	FY 2022
Title: Cyber Defensive Operations	0.618	0.638	0.638
Articles:	-	-	-
Description: RECURRING: The Missile Defense Integration and Operations Center (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 DoD Directive 8570 Specific and/or unique accomplishments to each FY are as follows: FY 2021 Plans: - SEE ABOVE FY 2022 Plans: - SEE ABOVE FY 2021 to FY 2022 Increase/Decrease Statement:			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency		Date: May 2021
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) MC22 / <i>Cyber Operations</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022
N/A			
Accomplishments/Planned Programs Subtotals	0.618	0.638	0.638

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

N/A

Remarks

D. Acquisition Strategy

N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Missile Defense Agency **Date:** May 2021

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) MC22 / <i>Cyber Operations</i>
--	--	--

Support (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Cyber Defensive Operations - Cyber Defensive Operations	C/CPAF	MDIOC/IRES : Jacobs Technology Inc.	3.211	0.618	Jan 2020	0.638	Jan 2021	0.638	Jan 2022	-		0.638	Continuing	Continuing	Continuing
Subtotal			3.211	0.618		0.638		0.638		-		0.638	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.211	0.618	0.638	0.638	-	0.638	Continuing	Continuing	N/A

Remarks
N/A

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Missile Defense Agency		Date: May 2021
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) MC22 / <i>Cyber Operations</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC22 Cyber Operations	1	2020	4	2022

Note

Based on the OUSD(C) FY 2022 President's Budget Submission Guidance, fiscal years covered in the justification material will include FY 2020 through FY 2022. Planned entries in the R4 may continue past FY 2022, out-years will be addressed in future budget submissions.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency **Date:** May 2021

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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
MD40: Program-Wide Support	24.844	2.532	2.199	2.025	-	2.025	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

Note

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

A. Mission Description and Budget Item Justification

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

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

	FY 2020	FY 2021	FY 2022
Title: Program Wide Support	2.532	2.199	2.025
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire MDS. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the MDS as well as supports MDA in the development and evaluation of technologies that will respond to the changing threat. Additionally, PWS includes personnel to support global deployments performing deployment site preparation and activation, and provides facility capabilities for MDA Executing Agent locations worldwide. Other MDA wide costs include: physical and technical security; civilian drug testing; audit readiness; the Science, Technology, Engineering, and Mathematics (STEM) program; legal services and settlements; travel and agency training; office, equipment, vehicle, and warehouse leases; utilities and base operations across multiple geographic locations; commercial and ancillary facility services; management of all facility aspects regardless of lifecycle stage; supplies and maintenance; compliance with statutory environmental requirements; data and unified communications support; materiel and readiness and central property management of equipment; Facilities Sustainment,			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Missile Defense Agency		Date: May 2021		
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 2020	FY 2021	FY 2022
<p>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 2021 Plans: - SEE ABOVE.</p> <p>FY 2022 Plans: - SEE ABOVE.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: N/A</p>				
Accomplishments/Planned Programs Subtotals		2.532	2.199	2.025
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Missile Defense Agency **Date:** May 2021

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 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Operations Management	Various	Various : Multi: AL, CA, CO, VA	0.867	0.036	Jul 2020	0.000		0.000		-		0.000	0.241	1.144	0.000
Program Wide Support - Agency Operations and Support Services	Reqn	Various : Multi: AK, AL, CA, CO, VA	15.268	2.496	Oct 2019	0.066	Oct 2020	0.046	Oct 2021	-		0.046	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services.	C/CPFF	Various : Alatec INC, AL, CO, VA	0.198	0.000		2.133	May 2021	1.979	Mar 2022	-		1.979	Continuing	Continuing	Continuing
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			24.844	2.532		2.199		2.025		-		2.025	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	24.844	2.532	2.199	2.025	-	2.025	Continuing	Continuing	N/A

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

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Missile Defense Agency							Date: May 2021				
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>			
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 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	
MD40 Program-Wide Support				◇	◇	◇	◇	◇	◇	◇	

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Missile Defense Agency		Date: May 2021
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>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2020	4	2022

Note

Based on the OUSD(C) FY 2022 President's Budget Submission Guidance, fiscal years covered in the justification material will include FY 2020 through FY 2022. Planned entries in the R4 may continue past FY 2022, out-years will be addressed in future budget submissions.