Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Missile Defense Agency

Appropriation/Budget Activity

R-1 Program Element (Number/Name)

0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4:

PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)

Date: February 2015

Advanced Component Development & Prototypes (ACD&P)

		• • •	,									
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	219.045	50.271	58.503	49.211	-	49.211	58.074	53.655	55.194	57.162	Continuing	Continuing
MD22: Missile Defense Integration and Operations Center (MDIOC)	213.178	47.064	54.578	46.575	-	46.575	54.869	50.291	51.632	53.420	Continuing	Continuing
MC22: Cyber Operations	-	0.514	0.537	0.472	-	0.472	0.459	0.616	0.622	0.645	Continuing	Continuing
MD40: Program-Wide Support	5.867	2.693	3.388	2.164	-	2.164	2.746	2.748	2.940	3.097	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Beginning in FY 2014, Modeling and Simulation Systems Engineering and Integration content transferred to Ballistic Missile Defense Midcourse Sector, Program Element 0603882C (Budget Project MD08).

Project MC22 is a new Defensive Cyber Operations Project established in this Program Element (PE) beginning in FY 2014. Funds were previously reported in Project MD22 of this PE.

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. It provides the necessary infrastructure and support services through a mission execution platform for MDA elements/components and designated Combatant Commanders' Ballistic Missile Defense System (BMDS) 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 consists of a highly secure research and development complex and a mission support module (area) located within a military installation (Schriever Air Force Base) that is adjacent to North American Aerospace Defense Command (NORAD) and United States Northern Command (USNORTHCOM). The MDA Integration Center 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 Missile Defense Integration and Operations Center (MDIOC) interfaces with the Information Technology/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 BMDS distributed ground test and system wide flight tests. The mission and test directors for these key tests control both main and associated test operations using secure voice, test, and mission network hubs at the MDIOC. The MDIOC also functions (within MDA's capabilities-based acquisition strategy) as the only system-level integration and interoperability mission execution platform for BMDS fire control; and it provides th

PE 0603904C: Missile Defense Integration and Operatio... Missile Defense Agency

UNCLASSIFIED
Page 1 of 46

Exhibit R-2, **RDT&E Budget Item Justification:** PB 2016 Missile Defense Agency **Date:** February 2015

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 0603904C I Missile Defense Integration and Operations Center (MDIOC)

MDIOC mission facilities contribute to the BMDS by directly supporting the concept of Concurrent Test, Training, and Operations (CTTO) for the BMDS. The MDIOC accomplishes this by providing engineering integration, resource scheduling, configuration management, and implementation development support for MDA and BMDS-level test, training, and operational mission execution. The Integration Center provides engineering and operational integration by:

- -Implementing the technical event architectures for the models and simulations used to support missile defense planning seminars, wargames, exercises, and analyses
- -Supporting BMDS Critical Engagement Conditions (CEC) testing and analysis by operating the Test Execution Control (TEC) for distributed BMDS ground tests, and ensuring the

integrity of their technical system architecture

- -Providing network operations and information assurance for all on-site integration activities
- -Integrating and sustaining the enabling infrastructure, services, and processes that support the operation of designated elements of the BMDS and resident Combatant Command operations and/or support centers
- -Providing technical support for the BMDS Watch Officers, BMDS Safety Officers, and Information Assurance Officers in their efforts to monitor and assess the health and status
- of the networks and elements that impact BMDS test and operations
- -Operating the Joint Early Warning Laboratory for anomaly resolution
- -Supporting the Intelligence Support Center for critical situational awareness intelligence on worldwide ballistic missile developments that could affect the development and/or

operation of the BMDS

Missile Defense Integration and Operations Center (MDIOC) Major Program Goals:

- -Provide the capabilities and services necessary to support engineering integration, resource scheduling for ground and flight tests, configuration management, and implementation development support of on-site activities
- -Ensure around the clock support and restoral of designated BMDS operational activities
- -Improve interface with designated Combatant Command missile defense activities; host/support the headquarters and operations center for United States Strategic Command
- Joint Functional Component Command Integrated Missile Defense
- -Continue to achieve cost effectiveness and efficiencies through the leveraging of existing Missile Defense Integration and Operations Center infrastructure, services, processes,

and expertise to support assigned missions

-Maintain and improve as designated the reliability, availability, and maintainability of mission critical systems

MD40 Program-Wide Support (PWS) consists of essential non-headquarters management efforts providing integrated and efficient support to the MDA functions and activities across the entire Ballistic Missile Defense System (BMDS).

PE 0603904C: Missile Defense Integration and Operatio...
Missile Defense Agency

Page 2 of 46

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Missile Defense Agency

Appropriation/Budget Activity

R-1 Program Element (Number/Name)

0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4:

PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)

Date: February 2015

Advanced Component Development & Prototypes (ACD&P)

B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	52.095	58.530	51.738	-	51.738
Current President's Budget	50.271	58.503	49.211	-	49.211
Total Adjustments	-1.824	-0.027	-2.527	=	-2.527
 Congressional General Reductions 	-	-0.027			
 Congressional Directed Reductions 	-	-			
 Congressional Rescissions 	-	-			
 Congressional Adds 	-	-			
 Congressional Directed Transfers 	-	-			
 Reprogrammings 	-1.005	-			
SBIR/STTR Transfer	-0.819	-			
Other Adjustment	-	-	-2.527	-	-2.527

Change Summary Explanation

FY 2015 change reflects Public Law 113-235, FY2015 Omnibus; Consolidated and Further Continuing Appropriations Act.

FY 2016 adjustments reflect realignment to Department of Defense priorities.

Exhibit R-2A, RDT&E Project Ju	stification:	PB 2016 N	/lissile Defer	nse Agency	1					Date: Febr	uary 2015	
Appropriation/Budget Activity 0400 / 4					PE 060390	am Element 04C / Missile tions Center	Defense li	•			se Integratio	n and
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MD22: Missile Defense Integration and Operations Center (MDIOC)	213.178	47.064	54.578	46.575	-	46.575	54.869	50.291	51.632	53.420	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 critical research, development, testing, training, and operations for BMDS activities. The MDIOC supports the Ground-based Midcourse Missile 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 Satellite Tracking and Surveillance System's (STSS) Missile Defense Space Center (MDSC); and the Targets and Countermeasures' (TC) Joint Target Operations Center (JTOC). 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 Ballistic Missile Defense System (BMDS) elements. Support to Missile Defense Agency test events is provided based on the Integrated Master Test Plan (IMTP) schedule. It supports BMDS Critical Engagement Conditions testing and analysis through the operation of the Test Execution Control node for distributed BMDS ground tests. During system flight test, 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 those critical 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) Command, Control, Battle Management and Communications (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 of the health and status of the end-to-end BMDS, and provides network subject matter expertise and technical reach back for the program elements and Combatant Commanders. The MDIOC hosts BMDS wargames and exercises in support of the warfighter, and delivers requisite infrastructure for modeling and simulation to provide and integrate digital modeling and simulation assets to the Digital Simulation Architecture that form system-level constructive simulations for full-envelope BMDS performance assessment with surrogate capability for BMDS ground tests. The MDIOC maintains a technical repository of BMDS Implementation Architectures for real-time operations and configuration control; provides both state change management and asset management technical support for the BMDS; and provides the technical environment for BMDS Watch Officers, Safety Officers, and Information Assurance Officers to 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 2014	FY 2015	FY 2016
Title: Infrastructure Systems and Support	17.378	20.475	19.198

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile D	efense Agency		Date: F	ebruary 2015	5	
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 Integra Operations Center (MDIOC)			ation and	
B. Accomplishments/Planned Programs (\$ in Millions, Article	e Quantities in Each)		FY 2014	FY 2015	FY 2016	
	Ar	ticles:	-	-	-	
Description: N/A						
FY 2014 Accomplishments: Computing Center (Operating Systems, Print/Storage Services, A	Audio/Visual, Operations and Maintenance):					
- Continued to maintain a mission execution platform to provide a hardware, software maintenance, licenses, and upgrades) that so and Evaluation (RDT&E) efforts at the Missile Defense Integration MDA elements/components, and Combatant Command and War - Provided computer hosting of specified threat models and support required - Planned/Initiated, when directed, the installation of any addition Operations Support Center (OSC) - Provided file, print, and messaging services - Managed and maintained automated patching software and virusing - Managed and maintained the MDA Enterprise directory service network resources - Performed preventive maintenance and ensured data recovery scheduling and execution - Planned/Designed enhancements to the MDIOC Data Center in staging areas, and streamlined logistics support function - Designed/Implemented upgrades to audio/visual support to the over Internet Protocol	upported MDA Research, Development, Test on and Operations Center (MDIOC) for the fighter operational elements orted the integration of other threat tools as all data feeds required to support the sus protection servers. It is supporting user access to MDA Enterprise capability through proper data backup including floor space allocations, equipment					
MDIOC Communication Services: - Installed communications and networking infrastructure (hardway)	are/software) in support of evolving mission					
requirements of resident MDA development, testing, training, and - Implemented Classified and Unclassified Voice Over Internet P - Provided telephony services to include: Telephone/Fax Service Network and Defense Red Switch telephone systems. Telephone upgraded telephone switches, nodes, and Private Branch Exchange.	d operational activities rotocol (VOIP) expansion : Provided local, long distance, Defense Switch e Switch Operations: Operated, maintained, and					

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED

Page 5 of 46 R-1 Line #87

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defe	nse Agency	Date: F	ebruary 201	5
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 Integrations Center (MDIOC)		tion and
B. Accomplishments/Planned Programs (\$ in Millions, Article Q	uantities in Each)	FY 2014	FY 2015	FY 2016
Network Management Transport Services:				
 Acquired and distributed mission critical unclassified and secure of elements/components and BMDS and Warfighter operational eleme Provided management of network capabilities by monitoring and cavailable bandwidth, hardware, and distributed software resources Maintained the technical infrastructure and equipment which include Cryptographic Devices; Edge Encryption Devices; Global Engagem communications 	ents ontrolling the network infrastructure, des, routers and switches, Core			
Information Assurance Systems - Provided information assurance to MDA elements/components, BI (COCOM) and Warfighter operational elements resident at the Miss Center (MDIOC) - Maintained DoD Information Assurance Certification and Accredita packages; managed the Information Assurance Vulnerability Assess assistance to Controls Validation Tests - Provided DoD Information Assurance Certification and Accreditation ensured timely submissions to Information Assurance Manager/Desfor MDA Admin/General Services (GENSER) and Event Packages - Performed architecture design, engineering, and configuration manual managed the Information Assurance Vulnerability Assessment and and implementation efforts to ensure Defense Information Systems Operations (DISA/JTF-GNO) directed compliance	ation Process (DIACAP) accreditation sment Program and provide technical on Process (DIACAP) package management; signated Accrediting Authority (IAM/DAA) magement reviews for all assigned projects d Communications Tasking Order remediation			
Infrastructure Implementation Engineering:				
- Implemented intelligence hardware/software updates as required to Provided MDIOC centric test event network related detailed design operational events, provided implementation plans, updated interface Change Control and Configuration Management services - Planned, designed, tested and operated the IT and communication Protocol addressing schema, routing tables, switching policies, data	ns in support of Test Events and real world be control documents and performed ons technical architecture including Internet			

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED
Page 6 of 46

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defe	nse Agency	Date: F	ebruary 2015	5
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)	Project (Number/ MD22 / Missile De Operations Center	tion and	
B. Accomplishments/Planned Programs (\$ in Millions, Article Q	<u>tuantities in Each)</u>	FY 2014	FY 2015	FY 2016
fire wall configurations, application configurations, band width allocations event return to base line - Provided technical health and status monitoring, troubleshooting, a for each of the event architectures including critical asset identificati Control (QA/QC) seals with configuration management and job cont- Implemented final Defense Information Systems Agency - Global I node configuration	and break/fix, IT/Communications support ion, monitoring, Quality Assurance/Quality trol			
Software Licenses, Services and Applications:				
 Maintained critical software licensing and maintenance agreement requirements, enabled continued software support necessary to ma defense posture and ensured continued system operational available Planned/Designed/Implemented technical lifecycle, refresh, and st Implemented a consolidated Microsoft Project Server and delivere 	intain the directed computer network ility candardization of MDIOC print services			
Property/Asset Management and Accountability				
 Managed government property in accordance with the Federal Acc Supplements (DFARs) to include accountability, reporting, warehous and excess asset management Maintained an inventory of IT hardware and software assets conne TS/SCI networks 	se management, asset transportation			
Cable Plant Cubicle Workstation				
 Installed facility connectivity cabling; provided trouble-shooting and Installed and reconfigured furniture and workstations on a critical b 				
FY 2015 Plans: MDIOC Communications and Special Purpose Processing Node:				
- Continue to maintain a mission execution platform to provide an er hardware, software maintenance, licenses, and upgrades) that supp				

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED

Page 7 of 46 R-1 Line #87

	UNCLASSIFIED				
Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defe	nse Agency	Date: F	ebruary 201	5	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)		(Number/Name) Missile Defense Integration a ns Center (MDIOC)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Q	uantities in Each)	FY 2014	FY 2015	FY 2016	
and Evaluation (RDT&E) efforts at the Missile Defense Integration a MDA elements/components, and Combatant Command and Warfigl - Provide computer hosting of specified threat models and support the required - Plan/Initiate, when directed, the installation of any additional data of Support Center (OSC) - Maintain the technical infrastructure and equipment which includes Devices; Edge Encryption Devices; Global Engagement Manager (Conformation Assurance Systems - Provide management of network capabilities by monitoring and convariable bandwidth, hardware, and distributed software resources - Acquire and distribute mission critical unclassified and secure comelements/components and BMDS and Warfighter operational eleme - Install communications and networking infrastructure (hardware/softequirements of resident MDA development, testing, training, and operative information assurance to MDA elements/components, BM (COCOM) and Warfighter operational elements resident at the Miss Center (MDIOC) - Maintain DoD Information Assurance Certification and Accreditation manage the Information Assurance Vulnerability Assessment Prograto Controls Validation Tests - Manage and maintain the MDA Enterprise directory services suppose to Controls Validation Tests - Manage and maintain the MDA Enterprise directory services suppose the MDIOC VOIP implementation - Provide telephony services to include: Telephone/Fax Service: Provide telephony services to include: Telephone/Fax Service: Provide telephone switches, nodes, and Private Branch Exchanges - Design/Implement upgrades to audio/visual support to the MDIOC Internet Protocol - Develop and coordinate Cross-Domain Solution architectures for hoster (BMDS); testing and contingency deployments - Plan/Design enhancements to the MDIOC Data Center including file.	nter operational elements the integration of other threat tools as seeds required to support the Operations seeds and long-haul communications settling the network infrastructure, munications capability to ten resident MDA ants of the seeds and Combate the Command seeds and Combate the Completion seeds and See				

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile	Defense Agency	Date: I	February 201	5
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)	Project (Number/ MD22 / Missile De Operations Center	tion and	
B. Accomplishments/Planned Programs (\$ in Millions, Artic	cle Quantities in Each)	FY 2014	FY 2015	FY 2016
areas, and streamlined logistics support function - Maintain critical software licensing and maintenance agreeme requirements, enable continued software support necessary to defense posture and ensure continued system operational ava - Plan/Design/Implement technical lifecycle, refresh, and stand - Implement a consolidated Microsoft Project Server and deliver	maintain the directed computer network ilability ardization of MDIOC print services			
End User Support:				
 Sustain End User core service support 18 hours a day, 6 day systems for unclassified and classified users Monitor networks for user compliance and DoD policies, and Maintain Printing and Copy Services Sustain email services (Exchange servers, BlackBerry Enterpnetworks) Sustain file services (file servers and storage area networks) and domain controller servers) Maintain Authentication services (Public Key Infrastructure/Cosoftware licenses for IT operational systems Maintain an Integrated Service Desk Maintain IT life-cycle asset management of end user devices clients, and BlackBerrys) 	report incidents orise Services servers and archiving storage area -Maintain Directory Services (Active Directory ommon Area Card) -Maintain current hardware and			
Infrastructure Implementation Engineering:				
- Implement intelligence hardware/software updates as require - Provide MDIOC centric test event network related detailed de operational events, provide implementation plans, update inter Control and Configuration Management services - Plan, design, test and operate the IT and communications ted addressing schema, routing tables, switching policies, data pat configurations, application configurations, band width allocation event return to base line	esigns in support of Test Events and real world face control documents and perform Change chnical architecture including Internet Protocol ths, information assurance controls, fire wall			

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED Page 9 of 46

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile	Defense Agency	Date: F	ebruary 201	5
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)	Project (Number/ MD22 / Missile De Operations Center	tion and	
B. Accomplishments/Planned Programs (\$ in Millions, Arti	cle Quantities in Each)	FY 2014	FY 2015	FY 2016
 Provide technical health and status monitoring, troubleshooting for each of the event architectures including critical asset ident Assurance/Quality Control (QA/QC) seals with configuration medium - Implement final Defense Information Systems Agency - Global node configuration 	ification, monitoring, Quality anagement and job control			
Hardware and Software Asset Management:				
 Manage government property in accordance with the Federal Supplements (DFARs) to include accountability, reporting, war and excess asset management Maintain an inventory of IT hardware and software assets corTS/SCI networks 	rehouse management, asset transportation			
Cable Plant Cubicle Workstation				
- Install facility connectivity cabling; provide trouble-shooting ar - Install and reconfigure furniture and workstations on a critical				
The FY 2015 increase is a result of planning for projects defer	red in FY 2014.			
FY 2016 Plans: MDIOC Communications and Special Purpose Processing No.	de:			
- Continue to maintain a mission execution platform to provide hardware, software maintenance, licenses, and upgrades) that and Evaluation (RDT&E) efforts at the Missile Defense Integra MDA elements/components, and Combatant Command and W - Provide computer hosting of specified threat models and sup required	t supports MDA Research, Development, Test tion and Operations Center (MDIOC) for the /arfighter operational elements port the integration of other threat tools as			
- Plan/Initiate, when directed, the installation of any additional of Support Center (OSC) Maintain the technical infractructure and equipment which inc				
- Maintain the technical infrastructure and equipment which inc Devices; Edge Encryption Devices; Global Engagement Mana				

PE 0603904C: Missile Defense Integration and Operatio...
Missile Defense Agency

UNCLASSIFIED
Page 10 of 46

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile De	efense Agency	Date: F	ebruary 201	5
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)	Project (Number/Name) n MD22 I Missile Defense Integrat Operations Center (MDIOC)		tion and
B. Accomplishments/Planned Programs (\$ in Millions, Article	Quantities in Each)	FY 2014	FY 2015	FY 2016
Information Assurance Systems - Provide management of network capabilities by monitoring and available bandwidth, hardware, and distributed software resource - Acquire and distribute mission critical unclassified and secure of elements/components and BMDS and Warfighter operational eler - Install communications and networking infrastructure (hardware requirements of resident MDA development, testing, training, and - Provide information assurance to MDA elements/components, E (COCOM) and Warfighter operational elements resident at the Mi Center (MDIOC) - Maintain DoD Information Assurance Certification and Accredita manage the Information Assurance Vulnerability Assessment Proto Controls Validation Tests - Manage and maintain the MDA Enterprise directory services sufferterprise network resources; perform preventive maintenance a proper data backup scheduling and execution - Implement Classified and Unclassified Voice Over Internet Proto of the MDIOC VOIP implementation - Provide telephony services to include: Telephone/Fax Service: Retwork and Defense Red Switch telephone systems. Telephone upgrade telephone switches, nodes, and Private Branch Exchange. Design/Implement upgrades to audio/visual support to the MDIOC Internet Protocol - Develop and coordinate Cross-Domain Solution architectures for System (BMDS); testing and contingency deployments - Plan/Design enhancements to the MDIOC Data Center including areas, and streamlined logistics support function - Maintain critical software licensing and maintenance agreement requirements, enable continued software support necessary to m defense posture and ensure continued system operational availad - Plan/Design/Implement technical lifecycle, refresh, and standard - Implement a consolidated Microsoft Project Server and deliver a End User Support:	communications capability to ten resident MDA ments /software) in support of evolving mission I operational activities BMDS elements, and Combatant Command issile Defense Integration and Operations ation Process (DIACAP) accreditation packages; ogram and provide technical assistance pporting user access to MDA and ensure data recovery capability through pocol (VOIP) expansion to include the completion Provide local, long distance, Defense Switch a Switch Operations: Operate, maintain, and ges to include 911 support DC supporting the distribution of signals over or high priority Ballistic Missile Defense ag floor space allocations, equipment staging as to meet critical customer and legal aintain the directed computer network bility dization of MDIOC print services			

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED
Page 11 of 46

	UNCLASSIFIED			
Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile De	fense Agency	Date:	February 201	5
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)	Project (Number/ MD22 / Missile De Operations Center	tion and	
B. Accomplishments/Planned Programs (\$ in Millions, Article	Quantities in Each)	FY 2014	FY 2015	FY 2016
 Sustain End User core service support 18 hours a day, 6 days a systems for unclassified and classified users Monitor networks for user compliance and DoD policies, and rep Maintain Printing and Copy Services Sustain email services (Exchange servers, BlackBerry Enterprise networks) Sustain file services (file servers and storage area networks) -Ma and domain controller servers) Maintain Authentication services (Public Key Infrastructure/Commsoftware licenses for IT operational systems. Maintain an Integrated Service Desk. Maintain IT life-cycle asset management of end user devices (declients, and BlackBerrys) Hardware and Software Asset Management: Manage government property and IT hardware and software in a Regulations (FAR)/DoD FAR Supplements (DFARs) to include acasset transportation and excess asset management Maintain an inventory of IT hardware and software assets conne TS/SCI networks Cable Plant Cubicle Workstation: Install facility connectivity cabling; provide trouble-shooting and related and reconfigure furniture and workstations Infrastructure Implementation Engineering: Implement intelligence hardware/software updates as required to Provide MDIOC centric test event network related detailed desig operational events, provide implementation plans, update interface Control and Configuration Management services 	e Services servers and archiving storage area aintain Directory Services (Active Directory mon Area Card) -Maintain current hardware and esktops, laptops, monitors, printers, thin accordance with the Federal Acquisition countability, reporting, warehouse management, cted or used in the ULAN, CLAN, SIPRNET and repair			

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED
Page 12 of 46

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile De	efense Agency	,	Date: Fe	ebruary 2015	,
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 Operations Center (MDIOC)		ion and	
B. Accomplishments/Planned Programs (\$ in Millions, Article	Quantities in Each)		FY 2014	FY 2015	FY 2016
 Plan, design, test and operate the IT and communications techn addressing schema, routing tables, switching policies, data paths configurations, application configurations, band width allocations event return to base line Provide technical health and status monitoring, troubleshooting, for each of the event architectures including critical asset identific Control (QA/QC) seals with configuration management and job collimplement final Defense Information Systems Agency - Global I node configuration 	information assurance controls, fire wall for sub networks and eventual post and break/fix, IT/Communications support eation, monitoring, Quality Assurance/Quality control				
The decrease in FY2016 is due to the realignment of funds to oth	er Department of Defense priorities				
Title: Facilities and Maintenance	Ar	ticles:	13.439	13.786	13.59 -
Description: N/A					
FY 2014 Accomplishments: Host Tenant Support(Electrical, Gas, Sewer, Water, Steam, Chille Refuse Removal):	ed Water, Waste Water, Landscaping, and				
 Procured utility services through 50th Air Force Space Wing (Ho Sustained utility infrastructure and delivery systems 	ost Base)				
Environmental, Safety and Occupational Health (ESOH):					
 Continued maintenance and updating of the program accident p Provided required industrial safety training to facility services pe Procured and distributed personal protection equipment for conf Ensured compliance with Hazardous Waste, Hazardous Material Act (NEPA) programs Conducted recurring safety and environmental audits 	ersonnel tracted activities				
Facilities Operations and Maintenance:					

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED

Page 13 of 46 R-1 Line #87

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Def	ense Agency	Date: F	ebruary 2015	5
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 Operations Center (MDIOC)		tion and
B. Accomplishments/Planned Programs (\$ in Millions, Article	Quantities in Each)	FY 2014	FY 2015	FY 2016
 - Provided 24 hours a day, 7 days a week, 365 days a year, facility systems (electrical; Heating, Ventilation, and Air Conditioning; plur 15 minutes after normal duty hours - Conducted preventative maintenance inspections (PMIs) for all b 	nbing; locksmith) with a response time of			
Facilities Engineering:				
 Conducted Management Process Facility Installation Standard A Provided risk management analysis and mitigation plans Maintained infrastructure drawings configuration management da Developed and documented facility long range planning and prog Provided preliminary designs and engineering rough order of magrequired infrastructure buildout changes 	itabases on a limited basis gramming			
Missile Defense Integration and Operations Center (MDIOC) Oper	ating Expenses:			
 - Leased General Services Administration (GSA) Vehicles and a construction - Funded Schriever Air Force Base Support Costs (Defense Red Standard Long Distance, Cable TV, and Grounds Maintenance) - Funded calibration of measuring and monitoring equipment - Funded repair of classified network switches - Procured major event transportation services (group movement) 				
Facility Services:				
 Provided custodial services for over 675,000 square feet of floor Provided limited Copy Center and Shuttle Services for over 2,000 Provided In/Out Processing and Personnel Moves 				
FY 2015 Plans: Host Tenant Support(Electrical, Gas, Sewer, Water, Steam, Chilled Refuse Removal):	d Water, Waste Water, Landscaping, and			
- Procure utility services through 50th Air Force Space Wing (Host	Base)			

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED
Page 14 of 46

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile De	efense Agency	Date: F	ebruary 201	5
Appropriation/Budget Activity 0400 / 4	PE 0603904C I Missile Defense Integration		Name) fense Integra · (MDIOC)	tion and
B. Accomplishments/Planned Programs (\$ in Millions, Article	Quantities in Each)	FY 2014	FY 2015	FY 2016
- Sustain utility infrastructure and delivery systems				
Environmental, Safety and Occupational Health (ESOH):				
 Continue maintenance and updating of the program accident preservice required industrial safety training to facility services perservice and distribute personal protection equipment for contraction environment for contraction compliance with Hazardous Waste, Hazardous Material Act (NEPA) programs Conduct recurring safety and environmental audits 	sonnel cted activities			
Facilities Operations and Sustainment:				
 Provide 24 hours a day, 7 days a week, 365 days a year, facility systems (electrical; Heating, Ventilation, and Air Conditioning; plu 15 minutes after normal duty hours Conduct preventative maintenance inspections (PMIs) for all bu 	imbing; locksmith) with a response time of			
Facilities Engineering:				
 Conduct Management Process Facility Installation Standard Aud Provide risk management analysis and mitigation plans Maintain infrastructure drawings configuration management data Develop and document facility long range planning programming Provide consulting services, preliminary designs and engineering required infrastructure buildout changes 	abases on a limited minimum basis			
Missile Defense Integration and Operations Center (MDIOC) Ope	erating Expenses:			
 - Lease General Services Administration (GSA) Vehicles and a concept of the content of				

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED
Page 15 of 46

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile De	fense Agency	Date: I	ebruary 201	5
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 Integrat Operations Center (MDIOC)		ition and
B. Accomplishments/Planned Programs (\$ in Millions, Article	Quantities in Each)	FY 2014	FY 2015	FY 2016
Facility Services:				
 Provide custodial services for over 675,000 square feet of floor s Provide limited Copy Center and Shuttle Services for over 2,000 Provide In/Out Processing and Personnel Moves 				
FY 2016 Plans: Host Tenant Support(Electrical, Gas, Sewer, Water, Steam, Chille Refuse Removal):	ed Water, Waste Water, Landscaping, and			
 Procure utility services through 50th Air Force Space Wing (Hos Sustain utility infrastructure and delivery systems 	t Base)			
Environmental, Safety and Occupational Health (ESOH):				
 Continue maintenance and updating of the program accident preserving required industrial safety training to facility services persection. Procure and distribute personal protection equipment for contract - Ensure compliance with Hazardous Waste, Hazardous Material Act (NEPA) programs Conduct recurring safety and environmental audits 	connel co			
Facilities Operations and Sustainment:				
 Provide 24 hours a day, 7 days a week, 365 days a year, facility systems (electrical; Heating, Ventilation, and Air Conditioning; plu 15 minutes after normal duty hours Conduct preventative maintenance inspections (PMIs) for all bui 	mbing; locksmith) with a response time of			
Facilities Engineering:				
 Conduct Management Process Facility Installation Standard Auc Provide risk management analysis and mitigation plans 	dits			

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED
Page 16 of 46

	UNCLASSIFIED				
Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Det	fense Agency		Date: F	ebruary 2015	5
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 Integrati Operations Center (MDIOC)			tion and
B. Accomplishments/Planned Programs (\$ in Millions, Article	Quantities in Each)	F	Y 2014	FY 2015	FY 2016
 Maintain infrastructure drawings configuration management data Develop and document facility long range planning programming Provide consulting services, preliminary designs and engineering required infrastructure buildout changes 					
Missile Defense Integration and Operations Center (MDIOC) Oper	rating Expenses:				
 - Lease General Services Administration (GSA) Vehicles and a co - Fund Schriever Air Force Base Support Costs (Defense Red Switch Long Distance, Cable TV, and Grounds Maintenance) - Fund calibration of measuring and monitoring equipment - Fund repair of classified network switches 					
Facility Services:					
 Provide custodial services for over 675,000 square feet of floor s Provide limited Copy Center and Shuttle Services for over 2,000 Provide In/Out Processing and Personnel Moves 					
Title: Engineering and Event Services	Ar	ticles:	6.501	6.837	7.77
Description: N/A					
FY 2014 Accomplishments: Provided Mission Assurance and Event Services to reduce risk of and ensure the rapid restoration of impacted services through the		ırces,			
Mission Assurance and Event Execution Support					
 Implemented baseline technical control for all Missile Defense In mission critical subsystems and services Executed MDIOC engineering management, quality assurance, of mission critical systems including: Technical power distribution, Uninterruptable Power Supply Sys 	configuration management and integration of all				

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED
Page 17 of 46

	UNCLASSIFIED			
Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defe	ense Agency	Date: F	ebruary 201	5
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)	PE 0603904C I Missile Defense Integration MD22 I Missile Defense Integra	tion and	
B. Accomplishments/Planned Programs (\$ in Millions, Article C	Quantities in Each)	FY 2014	FY 2015	FY 2016
circuit protection - Heating, Ventilation and Air Conditioning, chilled water and stean - Secure and non-secure voice communications for Ballistic Missile major tests, and general constituencies - Local and wide area secure data networking environments and n 24 hours a day, 7 days a week, 365 days a year - Ensured high availability of integrated MDIOC systems and BMDS a week, 365 days a year - Implemented 'last mile' integration for BMDS Operations, BMDS to general admin services - Executed comprehensive configuration baseline integrity periods work screening for all major tests and real world contingencies - Coordinated process improvement investments across all mission - Executed aggressive, proactive and tailored risk management to all MDIOC missions including: - Command, Control, Battle Management and Communications (C integration across the Integration Laboratory, Experimentation Labor Point of Presence - BMDS focused, system and distributed ground testing and Hardv - Modeling and Simulation program management; Digital Simulation - Worification and Accreditation - BMDS flight tests including Flight Test Ground-Based Midcourse (FTM) and Flight Test - THAAD (FTT) planning, coordination and si tests directed from the MDIOC, ensured the protection of power, He and communications critical to test execution and control). - Joint Target Operations Center (JTOC) Target of Opportunity (TO visualization - BMDS Operational Support Center and technical integration and 7 days a week, 365 days a year - MDA Intelligence Support Cell and Threat Modeling Center servic - BMDS Wargame, exercise and Distributed Multi-Echelon Training Warfighter Support Center program integration - Missile Defense Space Center (MDSC) Satellite Operations, Gro	n systems e Defense Systems (BMDS); Operations, etwork health and status tools 6 Operations support 24 hours a day, 7 days est, War gaming, exercise, training and of non-disruption, periods of interest and areas ensure integrity and persistent connectivity for 2MBC) incremental development and oratory (X-Lab), and the International vare-in-the-Loop (HWIL) execution on Architecture Development; Validation, Defense (FTG) execution; Flight Test - Aegis ituational awareness. (For system flight eating, Ventilation and Air Conditioning, DO) and target tracking, coordination and implementation services 24 hours a day, ces g System (DMETS) training execution;			

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED

Page 18 of 46 R-1 Line #87

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile [Defense Agency	Date: F	ebruary 201	5
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)	Project (Number/ MD22 / Missile De Operations Center	tion and	
B. Accomplishments/Planned Programs (\$ in Millions, Artic	le Quantities in Each)	FY 2014	FY 2015	FY 2016
Enterprise Sensor Laboratory experimental, networking and factorial composition of the control of training support the composition of the compo	ivity luding the United States Northern Command Communications (C2BMC) Control d States Strategic Command`s Joint Functional			
Technical Watch Support				
 Provided on-site technical environment for Ballistic Missile Def Officers, and Information Assurance Officers to execute their du Implemented recall procedures to augment subject matter exp major events Executed tabletop exercises to asses readiness for COCOM C Provided state change management and asset management t Coordinated, reported, and escalated critical information and Eto all Missile Defense Integration and Operations Center (MDIO rapid break/fix actions were executed 	orties 25 hours a day, 7days a week sertise availability during contingencies and operational contingencies and major BMDS tests echnical support for the BMDS BMDS test and operational event information			
Program Quality Management, Risk Management, and Earned	Value Management			
 Provided overarching contract and financial management supproducts Provided engineering coordination, resource management, an Integration (MDIOC) mission areas Conducted continuous process improvement and implementat missions Delivered integrated skill mix planning, coordination and workf of MDIOC events Executed integrated resource forecasting and de-confliction 	d event integration across all Missile Defense and ition across all JRDC execution and MDIOC			

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED
Page 19 of 46

Exhibit R-2A, RDT&E Project Justification: PB 2016 N	lissile Defense Agency	Date: F	ebruary 201	5	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC))	
B. Accomplishments/Planned Programs (\$ in Millions		FY 2014	FY 2015	FY 2016	
- Performed project management for discrete enterprise	enhancements				
Event Architecture & Engineering Design:					
 Coordinated design and implementation of technical are Operations Center (MDIOC) hosted Ballistic Missile Defe Delivered technical documentation packages for all maj Combatant Command (COCOM) exercise support Led requirements coordination and technical architecture training networks Updated BMDS end-to-end COCOM deployed architect content and deployments Maintained a technical repository of BMDS Implemental configuration management 	ense Systems) BMDS tests, training and operations for BMDS flight tests, ground tests, training and re enhancements for BMDS; wargame, exercise and ture as-built documentation reflecting new incremental				
FY 2015 Plans: Mission Assurance and Event Execution Support					
	ense Integration and Operations Center (MDIOC) mission				
critical subsystems and services - Execute MDIOC engineering management, quality assumission critical systems including:	urance, configuration management and integration of all				
 Technical power distribution, Uninterruptable Power Su circuit protection 	pply Systems, major transformer substations, and				
 Heating, Ventilation and Air Conditioning, chilled water Secure and non-secure voice communications for Ballistests, and general constituencies 	and steam systems stic Missile Defense Systems (BMDS); Operations, major				
 Local and wide area secure data networking environme 7 days a week, 365 days a year 					
 Ensure high availability of integrated MDIOC systems a a week, 365 days a year 					
- Implement 'last mile' integration for BMDS Operations, ladmin services					
 Execute comprehensive configuration baseline integrity 	r freezes, periods of interest and work screening for				

UNCLASSIFIED

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

Page 20 of 46

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Def	ense Agency	Date: F	ebruary 201	5
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)			tion and
B. Accomplishments/Planned Programs (\$ in Millions, Article	Quantities in Each)	FY 2014	FY 2015	FY 2016
all major tests and real world contingencies Coordinate process improvement investments across all mission Execute aggressive, proactive and tailored risk management to e all MDIOC missions including: Command, Control, Battle Management and Communications (Cintegration across the Integration Laboratory, Experimentation Lab Point of Presence BMDS focused, system and distributed ground testing and Hardwen Modeling and Simulation program management; Digital Simulation Verification and Accreditation BMDS flight tests including Flight Test Ground-Based Midcourse (FTM) and Flight Test - THAAD (FTT) planning, coordination and stests directed from the MDIOC, ensure the protection of power, Heand communications critical to test execution and control). Joint Target Operations Center (JTOC) Target of Opportunity (Tovisualization BMDS Operational Support Center and technical integration and 7 days a week, 365 days a year MDA Intelligence Support Cell and Threat Modeling Center services and DMETS training execution; Warfigen Missile Defense Space Development Center (MDSDC) Satellite Component operations, and Airborne Infrared Radar (ABIR); and Space testing Enterprise Sensor Laboratory experimental, networking and facilities Ground-Based Midcourse Defense (GMD) Fire Control component training Joint Early Warning Laboratory mission services and connectivity Combatant Command (COCOM) operations work centers including (USNORTHCOM) Command, Control, Battle Management and Cocenter (CCC), Army 100th Missile Defense Brigade, and United St. Component Command-Integrated Missile Defense MDA General Services Network and Operational Support Center - MDA Computer Emergency Response Team	areas ensure integrity and persistent connectivity for 2MBC) incremental development and poratory (X-Lab), and the International vare-in-the-Loop (HWIL) execution on Architecture Development; Validation, Defense (FTG) execution; Flight Test - Aegis situational awareness. (For system flight eating, Ventilation and Air Conditioning, DO) and target tracking, coordination and implementation services 24 hours a day, ces ghter Support Center program integration Derations, Ground System and experiment er Tracking and Surveillance System (STSS) ity support and coordination int-level operations, integration, testing, and ong the United States Northern Command communications (C2BMC) Control tates Strategic Command's Joint Functional	FY 2014	FY 2015	FY 2016

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile	Defense Agency	Date: F	ebruary 201	5
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)			tion and
B. Accomplishments/Planned Programs (\$ in Millions, Arti	cle Quantities in Each)	FY 2014	FY 2015	FY 2016
Technical Watch Support				
 Provide on-site technical environment for Ballistic Missile Def Officers, and Information Assurance Officers to execute their definition. Implement recall procedures to augment subject matter experimajor events. Execute tabletop exercises to asses readiness for COCOM Color Provide state change management and asset management to and escalate critical information and BMDS test and operational Integration and Operations Center (MDIOC) technical and management executed. 	luties 24 hours a day, 7 days a week, 365 days a year rtise availability during contingencies and Operational contingencies and major BMDS tests echnical support for the BMDS - Coordinate, report all event information to all Missile Defense			
Program Quality Management, Risk Management, and Earned	I Value Management			
 Provide overarching contract and financial management supp Provide engineering coordination, resource management, and Conduct continuous process improvement and implementation Deliver integrated skill mix planning, coordination and workfor MDIOC events Execute integrated resource forecasting and de-confliction Perform project management for discrete enterprise enhance 	d event integration across all MDIOC mission areas on across all JRDC execution and MDIOC missions rce deployment across the dynamic spectrum			
Event Architecture & Engineering Design:				
 Coordinate design and implementation of technical architectural training and operations Deliver technical documentation packages for all major BMDS exercise support Lead requirements coordination and technical architecture er (BMDS); wargame, exercise and training networks Update BMDS end-to-end Combatant Command (COCOM) or reflecting new incremental content and deployments 	S flight tests, ground tests, training and COCOM			
 - Maintain a technical repository of BMDS Implementation Arch 	nitectures for real-time operations and			

UNCLASSIFIED

	UNCLASSIFIED			
Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Def	ense Agency	Date:	February 201	5
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)			
B. Accomplishments/Planned Programs (\$ in Millions, Article (Quantities in Each)	FY 2014	FY 2015	FY 2016
configuration management	·			
FY 2016 Plans: Mission Assurance and Event Execution Support				
 Implement baseline technical control for all Missile Defense Integ critical subsystems and services Execute MDIOC engineering management, quality assurance, co mission critical systems including: Technical power distribution, Uninterruptable Power Supply Syste circuit protection Heating, Ventilation and Air Conditioning, chilled water and steam Secure and non-secure voice communications for Ballistic Missile tests, and general constituencies Local and wide area secure data networking environments and not 7 days a week, 365 days a year Ensure high availability of integrated MDIOC systems and BMDS a week, 365 days a year Implement 'last mile' integration for BMDS Operations, BMDS test admin services Execute comprehensive configuration baseline integrity freezes, pall major tests and real world contingencies Coordinate process improvement investments across all mission Execute aggressive, proactive and tailored risk management to eall MDIOC missions including: Command, Control, Battle Management and Communications (Cintegration across the Integration Laboratory, Experimentation Lab Point of Presence BMDS focused, system and distributed ground testing and Hardw Modeling and Simulation program management; Digital Simulatio Verification and Accreditation BMDS flight tests including Flight Test Ground-Based Midcourse (FTM) and Flight Test - THAAD (FTT) planning, coordination and stests directed from the MDIOC, ensure the protection of power, He 	ems, major transformer substations, and a systems be Defense Systems (BMDS); Operations, major betwork health and status tools 24 hours a day, Operations support 24 hours a day, 7 days t, War gaming, exercise, training and general beriods of interest and work screening for areas areas areas insure integrity and persistent connectivity for Defense (FTG) execution areas (FTG) execution; Flight Test - Aegis ituational awareness. (For system flight			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile D	efense Agency	Date: F	ebruary 201	5
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)			tion and
B. Accomplishments/Planned Programs (\$ in Millions, Articl	e Quantities in Each)	FY 2014	FY 2015	FY 2016
and communications critical to test execution and control). Joint Target Operations Center (JTOC) Target of Opportunity (visualization BMDS Operational Support Center and technical integration ar 7 days a week, 365 days a year MDA Intelligence Support Cell and Threat Modeling Center ser BMDS Wargame, exercise and DMETS training execution; Wa Missile Defense Space Development Center (MDSDC) Satellite support operations, and Airborne Infrared Radar (ABIR); and Spatesting Enterprise Sensor Laboratory experimental, networking and factory Ground-Based Midcourse Defense (GMD) Fire Control comportaining Joint Early Warning Laboratory mission services and connective Combatant Command (COCOM) operations work centers inclued (USNORTHCOM) Command, Control, Battle Management and Center (CCC), Army 100th Missile Defense Brigade, and United Component Command-Integrated Missile Defense MDA General Services Network and Operational Support Center MDA Computer Emergency Response Team Technical Watch Support Provide on-site technical environment for Ballistic Missile Deferonce Officers, and Information Assurance Officers to execute their duty	TOO) and target tracking, coordination and and implementation services 24 hours a day, vices rfighter Support Center program integration ac Operations, Ground System and experiment ace Tracking and Surveillance System (STSS) cility support and coordination ment-level operations, integration, testing, and vity iding the United States Northern Command Communications (C2BMC) Control States Strategic Command's Joint Functional er and Network Communications Center			
 Implement recall procedures to augment subject matter experting major events Execute tabletop exercises to asses readiness for COCOM Operovide state change management and asset management tectorological control of the coordinate, report and escalate critical information and BMDS Missile Defense Integration and Operations Center (MDIOC) tectoreak/fix actions are executed 	erational contingencies and major BMDS tests chnical support for the BMDS test and operational event information to all			
Program Quality Management, Risk Management, and Earned \	/alue Management			

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED

Page 24 of 46 R-1 Line #87

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile De	efense Agency		Date: F	ebruary 2015	;
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)	MD22 / N	Number/N dissile Def ns Center	ense İntegrat	ion and
B. Accomplishments/Planned Programs (\$ in Millions, Article	e Quantities in Each)	F	Y 2014	FY 2015	FY 2016
 Provide overarching contract and financial management support Contract (JRDC)integrated programs projects Provide engineering coordination, resource management, and expense conduct continuous process improvement and implementation Deliver integrated skill mix planning, coordination and workforce of MDIOC events Execute integrated resource forecasting and de-confliction Perform project management for discrete enterprise enhancement and Engineering Design: Coordinate design and implementation of technical architecture 	event integration across all MDIOC mission areas across all JRDC execution and MDIOC missions e deployment across the dynamic spectrum ents				
Defense System (BMDS) tests, training and operations - Deliver technical documentation packages for all major BMDS f exercise support - Lead requirements coordination and technical architecture enha and training networks	ancements for BMDS; wargame, exercise				
 Update BMDS end-to-end Combatant Command (COCOM) depreflecting new incremental content and deployments Maintain a technical repository of BMDS Implementation Architeconfiguration management 					
Title: Operations and Sustainment	Ar	ticles:	6.245	6.389	6.00
Description: N/A					
FY 2014 Accomplishments: Continued Operations and Sustainment for: - Government Civilian Salaries - Contract Support Services (CSS) - Training - Travel					

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED Page 25 of 46

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defer	nse Agency	Date: F	ebruary 201	5
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)	Project (Number/ MD22 / Missile De Operations Center	Name) fense Integra	
B. Accomplishments/Planned Programs (\$ in Millions, Article Q	uantities in Each)	FY 2014	FY 2015	FY 2016
- Federally Funded Research and Development				
FY 2015 Plans: - Fund Government Civilian, CSS, Training, and Travel				
 Fund Civilian and CSS positions supporting operations and sustain Integration and Operations Center (MDIOC) activities contributing to Provide quality event planning, coordination, logistics, security acceevents and visitors Deliver integrated service coordination for all MDIOC event and processor. Event Registration Web site Offsite event registration Security processing, including clearance verification and badging Coordination of group lodging Arrangement/Coordination/Scheduling of bus transportation Reserve, setup, and coordinate access for all primary shared MDIO Operate Audio Visual equipment during events Prepare and conduct official ceremonies; coordinate and host Distiinformation disclosure approval; coordinate offsite dinners and social Fund Training and Travel 	the mission execution platform less and host support for all MDIOC lotocol support including: OC conference rooms Inguished Visitor itineraries; obtain			
FY 2016 Plans: - Fund Government Civilian, Contract Support Services (CSS), Train	ing, and Travel			
 Fund Civilian and CSS positions supporting operations and sustainment of all Missile Defense Integration and O contributing to the mission execution platform Provide quality event planning, coordination, logistics, security acceevents and visitors 				
 Deliver integrated service coordination for all MDIOC event and pro- Event Registration Web site Offsite event registration Security processing, including clearance verification and badging Arrangement/Coordination/Scheduling of bus transportation Reserve, setup, and coordinate access for all primary shared MDIO 				

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED

Page 26 of 46 R-1 Line #87

Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each) Operate Audio Visual equipment during events Prepare and conduct official ceremonies; coordinate and host Distinguished Visitor itineraries; obtain information disclosure approval Fund Training and Travel Title: Infrastructure Systems Repair, Sustainment, and Critical Upgrades Articles: Description: N/A EY 2014 Accomplishments: Beginning in FY 2014, the repair, sustainment, and critical upgrade projects were realigned under this accomplishment from infrastructure Systems and Support Accomplishments and Operations and Maintenance Accomplishments Completed Electrical power distribution in two mission quadrants to replace end-of-life systems, increase eliability, improve power distribution efficiency, and redundancy to mission critical areas within the acility (multi-year project) Completed Heating, Ventilation, and Air Conditioning capacity upgrades to Missile Defense Integration and Operations Center (MDIOC) Computing Hub Data Center Completed Heating, Ventilation, and Air Conditioning end-of-life replacement components (phased project) EY 2015 Plans: Electrical power distribution in four mission quadrants to replace End-of-life systems, increase reliability, improve power distribution efficiency, and redundancy to mission critical areas (multi-ear project) Electrical Distribution non-technical power switchgear scheduled maintenance (second and third phases)			
Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each) Operate Audio Visual equipment during events Prepare and conduct official ceremonies; coordinate and host Distinguished Visitor itineraries; obtain information disclosure approval Fund Training and Travel Title: Infrastructure Systems Repair, Sustainment, and Critical Upgrades Articles: Description: N/A EY 2014 Accomplishments: Beginning in FY 2014, the repair, sustainment, and critical upgrade projects were realigned under this accomplishment from infrastructure Systems and Support Accomplishments and Operations and Maintenance Accomplishments Completed Electrical power distribution in two mission quadrants to replace end-of-life systems, increase eliability, improve power distribution efficiency, and redundancy to mission critical areas within the accility (multi-year project) Completed Heating, Ventilation, and Air Conditioning capacity upgrades to Missile Defense Integration and Operations Center (MDIOC) Computing Hub Data Center Completed Heating, Ventilation, and Air Conditioning end-of-life replacement components (phased project) Electrical power distribution in four mission quadrants to replace End-of-life systems, increase reliability, improve power distribution efficiency, and redundancy to mission critical areas (multi-ear project) Electrical Distribution non-technical power switchgear scheduled maintenance (second and third phases)	Date: F	ebruary 2015	
Operate Audio Visual equipment during events Prepare and conduct official ceremonies; coordinate and host Distinguished Visitor itineraries; obtain information disclosure approval Fund Training and Travel Fitle: Infrastructure Systems Repair, Sustainment, and Critical Upgrades Articles: Description: N/A FY 2014 Accomplishments: Designing in FY 2014, the repair, sustainment, and critical upgrade projects were realigned under this accomplishment from infrastructure Systems and Support Accomplishments and Operations and Maintenance Accomplishments Completed Electrical power distribution in two mission quadrants to replace end-of-life systems, increase eliability, improve power distribution efficiency, and redundancy to mission critical areas within the acility (multi-year project) Completed Electrical distribution non-technical power switchgear scheduled maintenance (first phase) Completed Heating, Ventilation, and Air Conditioning capacity upgrades to Missile Defense Integration and Operations Center (MDIOC) Computing Hub Data Center Completed Heating, Ventilation, and Air Conditioning end-of-life replacement components (phased project) FY 2015 Plans: Electrical power distribution in four mission quadrants to replace End-of-life systems, increase reliability, improve power distribution efficiency, and redundancy to mission critical areas (multi- ear project) Electrical Distribution non-technical power switchgear scheduled maintenance (second and third phases)	ect (Number/N 2	ense Integrati	on and
Prepare and conduct official ceremonies; coordinate and host Distinguished Visitor itineraries; obtain information disclosure approval Fund Training and Travel Fittle: Infrastructure Systems Repair, Sustainment, and Critical Upgrades Articles: Description: N/A FY 2014 Accomplishments: Beginning in FY 2014, the repair, sustainment, and critical upgrade projects were realigned under this accomplishment from infrastructure Systems and Support Accomplishments and Operations and Maintenance Accomplishments Completed Electrical power distribution in two mission quadrants to replace end-of-life systems, increase eliability, improve power distribution efficiency, and redundancy to mission critical areas within the acility (multi-year project) Completed Electrical distribution non-technical power switchgear scheduled maintenance (first phase) Completed Heating, Ventilation, and Air Conditioning capacity upgrades to Missile Defense Integration and Operations Center (MDIOC) Computing Hub Data Center Completed Heating, Ventilation, and Air Conditioning end-of-life replacement components (phased project) FY 2015 Plans: Electrical power distribution in four mission quadrants to replace End-of-life systems, increase reliability, improve power distribution efficiency, and redundancy to mission critical areas (multi- ear project) Electrical Distribution non-technical power switchgear scheduled maintenance (second and third phases)	FY 2014	FY 2015	FY 2016
Description: N/A FY 2014 Accomplishments: Beginning in FY 2014, the repair, sustainment, and critical upgrade projects were realigned under this accomplishment from infrastructure Systems and Support Accomplishments and Operations and Maintenance Accomplishments Completed Electrical power distribution in two mission quadrants to replace end-of-life systems, increase eliability, improve power distribution efficiency, and redundancy to mission critical areas within the acility (multi-year project) Completed Electrical distribution non-technical power switchgear scheduled maintenance (first phase) Completed Heating, Ventilation, and Air Conditioning capacity upgrades to Missile Defense Integration and Operations Center (MDIOC) Computing Hub Data Center Completed Heating, Ventilation, and Air Conditioning end-of-life replacement components (phased project) FY 2015 Plans: Electrical power distribution in four mission quadrants to replace End-of-life systems, increase reliability, improve power distribution efficiency, and redundancy to mission critical areas (multi-ear project) Electrical Distribution non-technical power switchgear scheduled maintenance (second and third phases)			
FY 2014 Accomplishments: Beginning in FY 2014, the repair, sustainment, and critical upgrade projects were realigned under this accomplishment from infrastructure Systems and Support Accomplishments and Operations and Maintenance Accomplishments Completed Electrical power distribution in two mission quadrants to replace end-of-life systems, increase eliability, improve power distribution efficiency, and redundancy to mission critical areas within the accility (multi-year project) Completed Electrical distribution non-technical power switchgear scheduled maintenance (first phase) Completed Heating, Ventilation, and Air Conditioning capacity upgrades to Missile Defense Integration and Operations Center (MDIOC) Computing Hub Data Center Completed Heating, Ventilation, and Air Conditioning end-of-life replacement components (phased project) FY 2015 Plans: Electrical power distribution in four mission quadrants to replace End-of-life systems, increase reliability, improve power distribution efficiency, and redundancy to mission critical areas (multi- tear project) Electrical Distribution non-technical power switchgear scheduled maintenance (second and third phases)	3.501	7.091	-
Reginning in FY 2014, the repair, sustainment, and critical upgrade projects were realigned under this accomplishment from infrastructure Systems and Support Accomplishments and Operations and Maintenance Accomplishments Completed Electrical power distribution in two mission quadrants to replace end-of-life systems, increase eliability, improve power distribution efficiency, and redundancy to mission critical areas within the acility (multi-year project) Completed Electrical distribution non-technical power switchgear scheduled maintenance (first phase) Completed Heating, Ventilation, and Air Conditioning capacity upgrades to Missile Defense Integration and Operations Center (MDIOC) Computing Hub Data Center Completed Heating, Ventilation, and Air Conditioning end-of-life replacement components (phased project) FY 2015 Plans: Electrical power distribution in four mission quadrants to replace End-of-life systems, increase reliability, improve power distribution efficiency, and redundancy to mission critical areas (multi-pear project) Electrical Distribution non-technical power switchgear scheduled maintenance (second and third phases)			
Electrical power distribution in four mission quadrants to replace End-of-life systems, increase reliability, improve power distribution efficiency, and redundancy to mission critical areas (multi- ear project) Electrical Distribution non-technical power switchgear scheduled maintenance (second and third phases)			
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity upgrade to improve mission issurance to critical mission ireas within the facility (second phase) Compliance project (first of multiple phases) to modify fire suppression system to meet building code requirements			
FY 2016 Plans:			
The decrease in FY2016 is due to the realignment of funds to other Department of Defense priorities Accomplishments/Planned Programs Subtotals	47.064	54.578	46.57

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED
Page 27 of 46

Exhibit R-2A, RDT&E Project Justi	fication: PB	2016 Missil	e Defense A	gency					Date: Fel	oruary 2015	
Appropriation/Budget Activity 0400 / 4			·	PE 06	rogram Eler 603904C / Mi Operations Ce	ssile Defens	e Integration	MD22 / M	Number/Na lissile Defer as Center (N	nse İntegrati	on and
C. Other Program Funding Summa	ary (\$ in Milli	ons)		'							
			FY 2016	FY 2016	FY 2016					Cost To	
<u>Line Item</u>	FY 2014	FY 2015	Base	OCO	<u>Total</u>	FY 2017	FY 2018	FY 2019		Complete	
 0603176C: Advanced Concepts 	6.919	8.470	12.139	-	12.139	13.227	12.932	13.249	13.219	Continuing	Continuin
and Performance Assessment											
 0603177C: Discrimination 	29.642	36.610	28.200	-	28.200	-	-	-	-	Continuing	Continuin
Sensor Technology											
• 0603178C: Weapons Technology	45.268	54.068	45.389	-	45.389	48.912	70.115	54.595	66.797	Continuing	Continuin
 0603179C: Advanced C4ISR 	35.421	13.284	9.876	-	9.876	3.723	-	-	-	-	62.30
0603180C: Advanced Research	23.025	16.584	17.364	-	17.364	18.919	20.380	21.069		Continuing	
 0603294C: Common 	67.796	25.639	46.753	-	46.753	75.262	71.476	86.814	99.701	Continuing	Continuin
Kill Vehicle Technology											
 0603881C: Ballistic Missile 	251.899	163.892	228.021	-	228.021	230.306	257.014	218.533	247.707	Continuing	Continuir
Defense Terminal Defense Segment											
 0603882C: Ballistic 	1,064.445	873.923	1,284.891	-	1,284.891	936.425	803.392	903.539	912.890	Continuing	Continuir
Missile Defense Midcourse											
Defense Segment											
• 0603890C: <i>BMD</i>	368.965	401.971	409.088	-	409.088	423.092	417.831	420.104	433.604	Continuing	Continuir
Enabling Programs											
 0603892C: AEGIS BMD 	885.704	764.224	843.355	-	843.355	762.740	748.354	564.827		Continuing	
0603893C: Space Tracking	41.618	31.331	31.632	-	31.632	17.917	23.937	28.789	30.344	Continuing	Continuir
and Surveillance System											
 0603895C: Ballistic Missile 	6.412	6.389	23.289	-	23.289	21.433	16.108	11.933	11.952	Continuing	Continuir
Defense System Space Programs											
 0603896C: Ballistic Missile 	390.207	428.277	450.085	-	450.085	461.759	423.843	442.926	460.112	Continuing	Continuir
Defense Command and											
Control, Battle Management											
& Communication											
 0603898C: Ballistic Missile 	41.051	46.387	49.570	-	49.570	50.533	51.363	52.217	54.247	Continuing	Continuir
Defense Joint Warfighter Support											
• 0603907C: Sea Based	70.336	64.409	72.866	-	72.866	71.267	75.760	72.319	87.058	Continuing	Continuir
X-Band Radar (SBX)											
• 0603913C: <i>Israeli</i>	283.782	268.842	102.795	-	102.795	104.923	106.913	109.599	111.370	Continuing	Continuir
Cooperative Programs											

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED
Page 28 of 46

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile I	Defense Ag	jency					Date: February 2015	
Appropriation/Budget Activity 0400 / 4		PE 060	03904C / Mi	n ent (Numbe ssile Defense enter (MDIOC	Integration	MD22 / MI	Number/Name) issile Defense Integration and s Center (MDIOC)	<i>t</i>
C. Other Program Funding Summary (\$ in Millions)								
	FY 2016	FY 2016	FY 2016				Cost To	

Line Item FY 2014 FY 2015 OCO FY 2017 FY 2018 FY 2019 FY 2020 Complete Total Cost Base Total 274.323 350.747 Continuing Continuing • 0603914C: Ballistic 342,695 366.302 274.323 298.390 345.333 330.404 Missile Defense Test

Remarks

D. Acquisition Strategy

The Joint National Integration Center Research and Development Contract is the major performing integrated contract and is scheduled to be recompeted in FY 2016. The acquisition strategy for Missile Defense Integration and Operation Center (MDIOC) mission execution is to employ a contract to perform designated integration and sustainment tasks to conduct Ballistic Missile Defense System (BMDS) Research, Development, Test and Evaluation (RDT&E). The MDIOC is operated by missile defense subject matter experts (SME) composed of Government military and civilian personnel, Federally Funded Research and Development Center (FFRDC), MDIOC Contract Support Services, and major defense contractors.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency

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

Date: February 2015

Operations Center (MDIOC)

Product Developme	nt (\$ in M	illions)		FY	2014	FY	2015		2016 ise	FY 2	2016 CO	FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Remarks

0400 / 4

Appropriation/Budget Activity

N/A

Support (\$ in Millions	s)			FY 2	2014	FY 2	2015		2016 ase		2016 CO	FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To	Total Cost	Target Value of Contract
Infrastructure Systems and Support - MDIOC NG	C/CPAF	MDIOC/Northrup Grumman Mission Systems : Colorado Springs, CO	80.363	17.378		20.475	Nov 2014	19.198	Nov 2015	-		19.198	Continuing	Continuing	Continuing
Facilities and Maintenance - MDIOC GSA / Leases / Calibration	MIPR	Various (GSA, 50th Space Wing, Warehouses) : Colorado Springs, CO	4.414	1.240		0.636		0.667		-		0.667	Continuing	Continuing	Continuing
Facilities and Maintenance - MDIOC NG	C/CPAF	MDIOC/Northrop Grumman Mission Systems : Colorado Springs, CO	57.296	9.780		9.947	Nov 2014	10.358	Nov 2015	-		10.358	Continuing	Continuing	Continuing
Facilities and Maintenance - MDIOC Utilities	MIPR	50th Space Wing : Shriever AFB, CO	9.020	2.419		3.203		2.565		-		2.565	Continuing	Continuing	Continuing
Engineering and Event Services - MDIOC NG	C/CPAF	MDIOC/Northrop Grumman Mission Systems : Colorado Springs, CO	38.458	6.501		6.837	Oct 2014	7.778	Oct 2015	-		7.778	Continuing	Continuing	Continuing
Operations and Sustainment - FFRDC	FFRDC	MDIOC : Colorado Springs, CO	1.807	0.360		0.407	Oct 2014	-		-		-	Continuing	Continuing	Continuing
Operations and Sustainment - Operations & Sustainment	Allot	MDIOC : Colorado Springs, CO	12.035	3.263		3.330	Oct 2014	3.281	Oct 2015	-		3.281	Continuing	Continuing	Continuing

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED
Page 30 of 46

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency

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)

Date: February 2015

Support (\$ in Millions	s)			FY 2	2014	FY 2	2015		2016 ise		2016 CO	FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To	Total Cost	Target Value of Contract
Operations and Sustainment - Support Services	C/FFP	SRS/ManTech/ MiDAESS Multi : Colorado Springs, CO	9.388	2.481		2.564	Oct 2014	2.640	Nov 2015	-		2.640	Continuing	Continuing	Continuing
Operations and Sustainment - Travel and Training	Allot	MDIOC : Colorado Springs, CO	0.397	0.141		0.088	Oct 2014	0.088	Oct 2015	-		0.088	Continuing	Continuing	Continuing
Infrastructure Systems Repair, Sustainment, and Critical Upgrades - MDIOC NG	C/CPAF	MDIOC/Northrop Grumman Mission Systems : Colorado Springs, CO	0.000	3.501		7.091	Nov 2014	-		-		-	Continuing	Continuing	Continuing
	,	Subtotal	213.178	47.064		54.578		46.575		-		46.575	-	_	_

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 Federally Funded Research and Development Center (FFRDC) and Technical Contract Support Services employees, for MDIOC operations and oversight of the Joint Research and Development Contractor (JRDC), as well as funding for JRDC work as required by the government.

Те	est and Evaluation	(\$ in Milli	ons)		FY	2014	FY 2	2015		2016 ise		2016 CO	FY 2016 Total			
	Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To	Total Cost	Target Value of Contract
			Subtotal	-	-		-		-		-		-	-	-	-

Remarks

FY 2012 Plans captured in Project MD01, PE 0603896C

Management Service	es (\$ in M	illions)		FY 2	2014	FY	2015		2016 ase		2016 CO	FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	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	-	-		-		-		-		-	-	-	-

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED
Page 31 of 46

Exhibit R-3, RDT&E	Project Co	ost Analysis: PB 2	016 Missi	ile Defen	ise Agend	у						Date:	February	2015	
Appropriation/Budg 0400 / 4	et Activity	1				PE 060	•	∕lissile De	lumber/N efense Int IDIOC)	•	MD22 /		r/ Name) Jefense Int Jer (MDIOC	-	and
Management Service	es (\$ in M	illions)		FY 2	2014	FY 2	2015	_	2016 ase		2016 CO	FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	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 2	2014	FY 2	2015	_	2016 ase		2016 CO	FY 2016 Total	Cost To	Total Cost	Target Value of Contract
		Project Cost Totals	213.178	47.064		54.578		46.575		_		46.575	_	-	_

Remarks

N/A

priation/Budget Activity 4																								
								Р	-1 P E 06 nd C	603	904	4C /	Mi	ssil	le È	efe	ens	e Int			on	M	D22 / M	Number/Name) lissile Defense Integration and is Center (MDIOC)
Significant Event Complete ▲ Milestone Decis Significant Event Planned △ Milestone Decis	ion F	Plan	ned	ಭ		I	Elem	ent ⁻	Γest C Γest F	lanı	ned	<	>		S	yste	m Le	evel T	est I	Plant	ned		<u> </u>	Complete Activity 💠 Planned Activity 💠
	1		014 3 4		FY 2				016 3 4			201			20			Y 20		- 1	Y 2		I	
HVAC repair and sustainment and capacity upgrade (Data Center) Environmental Protection/Greening (end-of-life replacement of evaporative cooler - 1 unit) Non-Tech Electric Power Switchgear repair and	+	+	+ +	-	. 2	3						3	-		2 -	, ,		2	7			3		
sustainment (First Phase) HVAC End-of-Life Component Replacement	-		+ +	- 1		-		-		+					-	-	-		+					
Power distribution in two mission quadrants	-	7	+ +	_		-	_	+		+	+				+	+	1		+	+	H			
HVAC repair and sustainment (Data Center)			+ +				+	+		+	+	+			+	+	1		+	+	\vdash			
Heating, Ventilation, and Air Conditioning end- of-life component replacement and capacity upgrade to improve mission assurance to critica mission areas within the Research and Development Building		•					❖	>-	->-≺	>														
Electrical power distribution in two mission quadrants to replace- End-of-Life systems, increase reliability, improve power distribution efficiency, and redundancy to mission critical areas								*	⇔															
Reconfigure the Data Center hot and cold air containment to improve information technolog equipment performance and protect against adverse and rapid environmental changes	У							- >-	⊹ ≺	>														
Install second direct current electrical power source for controlling the main electrical power (12,470KVA) switchgear	-								-⊹-≺	>														
Architectural restoration for aging equipment and furnishings									->-≺	>														
Replace End-of-Life cafeteria kitchen equipmen	t								4	>														
Fire Detection/Suppression System Compliance Phase 1										⊲	> ->	>-												
Implement external ambient air economizer	+	\vdash		+		\dashv	+	T	\vdash	-0	<u> </u>		-<>-	+	+	+	t	\vdash	+	+	\vdash	\dashv		
Power distribution in one quadrant	1	П		\top				1		┪,	`\\ <u>`</u>	- 💸	*		\top	\top	T		\top	1	\sqcap	\dashv	\dashv	
e e tres elea la acte one quadrante												1 V					_			_	ш			

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	PE 0603904C I Missile Defense Integration	MD22 / Mis	umber/Name) ssile Defense Integration and
	and Operations Center (MDIOC)	Operations	Center (MDIOC)

Schedule Details

	Sta	art	End		
Events	Quarter	Year	Quarter	Year	
HVAC repair and sustainment and capacity upgrade (Data Center)	1	2014	4	2014	
Environmental Protection/Greening (end-of-life replacement of evaporative cooler - 1 unit)	3	2014	4	2014	
Non-Tech Electric Power Switchgear repair and sustainment (First Phase)	3	2014	4	2014	
HVAC End-of-Life Component Replacement	2	2014	4	2014	
Power distribution in two mission quadrants	1	2014	4	2014	
HVAC repair and sustainment (Data Center)	1	2014	4	2014	
Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity upgrade to improve mission assurance to critical mission areas within the Research and Development Building	1	2016	4	2016	
Electrical power distribution in two mission quadrants to replace- End-of-Life systems, increase reliability, improve power distribution efficiency, and redundancy to mission critical areas	2	2016	3	2016	
Reconfigure the Data Center hot and cold air containment to improve information technology equipment performance and protect against adverse and rapid environmental changes	2	2016	4	2016	
Install second direct current electrical power source for controlling the main electrical power (12,470KVA) switchgear	3	2016	4	2016	
Architectural restoration for aging equipment and furnishings	3	2016	4	2016	
Replace End-of-Life cafeteria kitchen equipment	4	2016	4	2016	
Fire Detection/Suppression System Compliance Phase 1	1	2017	3	2017	
Implement external ambient air economizer	1	2017	4	2017	
Power distribution in one quadrant	2	2017	3	2017	
Increase quadrant communication rooms Power and HVAC capacity	2	2017	3	2017	

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency			Date: February 2015
0400 / 4	,	MD22 / Mis	umber/Name) ssile Defense Integration and Conter (MDIOC)

	Sta	art	End		
Events	Quarter	Year	Quarter	Year	
Replace Emergency Lighting Fluorescent Lamps with Light Emitting Diode Lighting	2	2017	3	2017	
Refurbish Electrical Distribution Technical Utility System Switchgear	2	2017	4	2017	
Replace sanitary sewer drains	2	2017	4	2017	
HVAC repair and sustainment (replace chilled water pumps)	3	2017	4	2017	
Fire Detection/Suppression System Compliance Phase 2	1	2018	3	2018	
HVAC and mechanical replacement of End-of-Life components in two quadrants	1	2018	4	2018	
Restroom architectural upgrades	1	2018	4	2018	

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency											uary 2015	
0400 / 4 PE 06039				am Elemen 04C / Missile tions Cente	Defense II		Project (Number/Name) MC22 / Cyber Operations					
COST (\$ in Millions)	Prior FY 2016 FY 2016 FY 2016 FY 2016 FY 2016 FY 2017 FY 2018 Years FY 2014 FY 2015 Base OCO Total FY 2017 FY 2018			FY 2019	FY 2020	Cost To Complete	Total Cost					
MC22: Cyber Operations	C22: Cyber Operations - 0.514 0.537 0.472 - 0.472 0.459 0				0.616	0.622	0.645	Continuing	Continuing			
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Project MC22 is a new Defensive Cyber Operations Project established in this Program Element (PE) for PB 2014. Funds were previously reported in Project MD22 of this PE.

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 2014	FY 2015	FY 2016
Title: Cyber Defensive Operations	0.514	0.537	0.472
Articles:	-	-	-
Description: The Missile Defense Integration and Operations Center (MDIOC) conducts Defensive Cyber Operations in the following categories:			
FY 2014 Accomplishments: Key Management Infrastructure			
- The MDIOC interfaces 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			
- The MDIOC maintains an Information Assurance (IA) certified workforce through continuous IA training as required by DoD Directive 8570.			
FY 2015 Plans: Key Management Infrastructure			

UNCLASSIFIED
Page 37 of 46

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense	Agency	Date: F	ebruary 2015	5
Appropriation/Budget Activity 0400 / 4	, ,			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quar	ntities in Each)	FY 2014	FY 2015	FY 2016
- The MDIOC interfaces with the Information Technology/Information As production, control and distribution, and training for utilizing the keying material use Information Assurance Training	d with the Agency's cryptographic devices.			
- The MDIOC maintains an Information Assurance (IA) certified workfor Directive 8570 FY 2016 Plans:	ce through continuous IA training as required by DoD			
Key Management Infrastructure				
- The MDIOC interfaces with the Information Technology/Information As production,				
control and distribution, and training for utilizing the keying material use Information Assurance Training	u with the Agency's cryptographic devices.			
- The MDIOC maintains an Information Assurance (IA) certified workfor Directive 8570	ce through continuous IA training as required by DoD			
	Accomplishments/Planned Programs Subt	otals 0.514	0.537	0.47

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

UNCLASSIFIED

Page 38 of 46 R-1 Line #87

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency

R-1 Program Element (Number/Name)

Project (Number/Name)

Date: February 2015

Appropriation/Budget Activity 0400 / 4

PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)

MC22 I Cyber Operations

Test and Evaluation	(\$ in Milli	ons)		FY 2	2014	FY 2	2015	FY 2 Ba	2016 ise	FY 2	2016 CO	FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To	Total Cost	Target Value of Contract
Cyber Defensive Operations - Cyber Defensive Operations	C/CPAF	MDIOC/Northrop : Grumman Mission Systems Colorado Springs, CO	0.000	0.514		0.537	Nov 2014	0.472	Nov 2015	-		0.472	Continuing	Continuing	Continuing
	,	Subtotal	0.000	0.514		0.537		0.472		-		0.472	-	-	-

Remarks

N/A

	Prior Years	FY 2014	FY 2	015	FY 2 Bas	FY 2	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.514	0.537		0.472	-	0.472	-	-	-

Remarks

N/A

PE 0603904C: *Missile Defense Integration and Operatio...*Missile Defense Agency

	UNCLASSIFIED		
xhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Def	ense Agency		Date: February 2015
ppropriation/Budget Activity 400 / 4	R-1 Program Elem PE 0603904C / Mis and Operations Ce	ssile Defense Integration MC22	ect (Number/Name) 2 I Cyber Operations
Significant Event Complete 🛦 Milestone Decision Comp Significant Event Planned 🛆 Milestone Decision Planne	olete ★ Element Test Complete ◆ ed が Element Test Planned ◇	System Level Test Complete System Level Test Planned	Complete Activity 💠 Planned Activity 💠
MC22 Cyber Operations	014 FY 2015 FY 2016 FY 2017 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 \$\displaystyle \displaystyle \dintopy \dintopy \displaystyle \displaystyle \displaystyle \displays	FY 2018 FY 2019 FY 2020 1 2 3 4 1 2 3 4 1 2 3 4 > + + + + + + + + + + + + + + + + + + +	

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency			Date: February 2015
0400 / 4	R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)	, ,	umber/Name) ber Operations

Schedule Details

	St	art	End		
Events	Quarter	Year	Quarter	Year	
MC22 Cyber Operations	1	2016	4	2020	

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency										Date: February 2015		
Appropriation/Budget Activity 0400 / 4				,				Project (Number/Name) MD40 / Program-Wide Support				
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MD40: Program-Wide Support	5.867	2.693	3.388	2.164	-	2.164	2.746	2.748	2.940	3.097	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2015, Program Wide Support reflects a proportional change as a result of increases in the Missile Defense Integration and Operations Center and in FY 2016, reflects a proportional change as a result of decreases in the Missile Defense Integration and Operations Center.

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.

A. Mission Description and Budget Item Justification

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016
Title: Program Wide Support		2.693	3.388	2.164
	Articles:	-	-	-
Description: N/A				
FY 2014 Accomplishments: See paragraph A: Mission Description and Budget Item Justification				
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification				
FY 2016 Plans:				

PE 0603904C: Missile Defense Integration and Operatio... Missile Defense Agency

Page 42 of 46 R-1 Line #87

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency	Date: February 2015		
0400 / 4	R-1 Program Element (Number/Name) PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)	, ,	umber/Name) ogram-Wide Support

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	2.693	3.388	2.164

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency

R-1 Program Element (Number/Name)

Project (Number/Name)

Appropriation/Budget Activity 0400 / 4

PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)

MD40 I Program-Wide Support

Date: February 2015

Support (\$ in Million	s)			FY 2	2014	FY 2	2015		2016 ise		2016 CO	FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To	Total Cost	Target Value of Contract
Program Wide Support - Agency Facilities, Operations, and Maintenance	MIPR	Various : Multi: AK, AL, CA, CO, VA	5.301	-		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Allot	Various : Multi: AL, CA, CO, VA	0.241	-		0.230		-		-		-	0.241	0.712	-
Program Wide Support - Agency Operations and Support Services	Reqn	Various : Multi: AK, AL, CA, CO, VA	0.325	2.693		3.158	Nov 2014	2.164	Dec 2015	-		2.164	Continuing	Continuing	Continuing
		Subtotal	5.867	2.693		3.388		2.164		-		2.164	-	-	-

Remarks

N/A

	Prior Years	FY 201	4 FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.867	2.693	3.388	2.164	-	2.164	-	-	-

Remarks

N/A

	UNCLA	133IFIED	
hibit R-4, RDT&E Schedule Profile: PB 20	116 Missile Defense Agency		Date: February 2015
propriation/Budget Activity 00 / 4	priation/Budget Activity R-1 Program Element (Number/Name)		
•	•		
Significant Event Complete Milest Significant Event Planned Milest	one Decision Complete 🛊 Element Testone Decision Planned 🛣 Element Test	t Complete	te Complete Activity + Planned Activity +
	FY 2014	6 FY 2017 FY 2018 FY 2019 FY 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1	2020 3 4
MD40 Program-Wide Support	44		♦

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency			Date: February 2015
, · · · ·	,	, ,	umber/Name)
0400 / 4	PE 0603904C I Missile Defense Integration and Operations Center (MDIOC)	MD40 I Pro	ogram-Wide Support
	, ,		

Schedule Details

	St	art	End		
Events	Quarter	Year	Quarter	Year	
MD40 Program-Wide Support	1	2016	4	2020	