Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency												Date: March 2014
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*					R-1 Program Element (Number/Name) PE 0603179C / *Advanced C4ISR*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	36.500	15.329	-	15.329	10.389	3.942	-	-	-	66.160
MD01: *Command & Control, Battle Management, Communications (C2BMC)*	-	-	24.000	-	-	-	-	-	-	-	-	24.000
MD73: *Advanced C4ISR*	-	-	12.500	14.545	-	14.545	9.815	3.700	-	-	-	40.560
MD40: *Program-Wide Support*	-	-	-	0.784	-	0.784	0.574	0.242	-	-	-	1.600
MDAP/MAIS Code: 362												

The FY 2015 OCO Request will be submitted at a later date.

Note

Beginning in FY 2014, the Advanced Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced C4ISR Program Element 0603179C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

A. Mission Description and Budget Item Justification

The Advanced C4ISR Program Element develops future Ballistic Missile Defense System (BMDS) capabilities to out-pace emerging and evolving threats. Advanced C4ISR identifies, develops, and readies for transition in association with the Chief Architect and the Director of Engineering the technical solutions that meet BMDS shortfalls identified by the Combatant Commanders. Missile Defense Agency uses the Prioritized Capabilities List (PCL) and the Agency's Achievable Capabilities List (ACL) to prioritize technology investments including Advanced C4ISR. MDA's investments balance the pursuit of promising next generation technology with near-term solutions to enhance existing BMDS capability.

Advanced Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) develops and matures technology which enables rapid and exponential capability increases in our C2BMC and existing sensor networks. We will develop and mature technology, software and algorithms which facilitate integration of the Service's command and control networks into the BMDS. This focus area will invest in advanced C2BMC C4ISR technology that has the potential to increase battlespace for all BMDS interceptors including the Terminal High Altitude Area Defense and Ground-based Interceptors.

This Program Element includes support for the Discrimination Improvements for Homeland Defense (DIHD) effort. The goal of this effort is to develop and field an integrated set of Element capabilities to improve BMDS reliability, lethality, and discrimination. The end result will be a deployed future BMDS architecture more capable of discriminating and destroying a reentry vehicle with a high degree of confidence that will improve Warfighter shot doctrine and preserve inventory. This effort will encompass a DIHD Near-Term capability fielding and a DIHD Mid-Term capability fielding.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency					Date: March 2014
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*			R-1 Program Element (Number/Name) PE 0603179C / *Advanced C4ISR*		
B. Program Change Summary ($ in Millions)	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO**	**FY 2015 Total**
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	36.500	15.329	-	15.329
Total Adjustments	-	36.500	15.329	-	15.329
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	36.500			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	15.329	-	15.329

Change Summary Explanation

The decrease from FY 2014 to FY 2015 is due to completion of efforts and the movement of funding for continued Discrimination Improvements for Homeland Defense (DIHD) Mid-Term phase from Program Element 0603175C to Program Element 0603896C. Beginning in FY 2014, the Advance Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) effort transferred from Balllistic Missile Defense Technology Program Element 0603175C to the Advanced C4ISR Program Element 0603179C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency			Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603179C / *Advanced C4ISR*	Project (Number/Name) MD01 / *Command & Control, Battle Management, Communications (C2BMC)*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD01: *Command & Control, Battle Management, Communications (C2BMC)*	-	-	24.000	-	-	-	-	-	-	-	-	24.000

The FY 2015 OCO Request will be submitted at a later date.

Note

Beginning in FY 2014, the Advanced Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced C4ISR Program Element 0603179C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

A. Mission Description and Budget Item Justification

Advanced Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) develops and matures technology which enables rapid and exponential capability increases in our command, control, battle management and communications (C2BMC) and existing sensor networks. We will develop and mature technology, software and algorithms which facilitate integration of the Service's command and control networks into the BMDS. This focus area will invest in advanced C2BMC C4ISR technology that has the potential to increase battlespace for all BMDS interceptors including the Terminal High Altitude Area Defense and Ground-based Interceptors. When technology is ready for transition, implementation will be in the BMDS Sensors (0603884C) and the C2BMC (0603896C) Program Elements.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Advanced Command and Control System Integration	-	24.000	-
Description: N/A			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: -Develop and mature Ballistic Missile Defense System Capability Planning Specification, System and Element Specifications and multiple interface control documents -Develop and install C2BMC Spiral 8.2 Test Lab for Integration testing with Service C2 systems -Analyze BMDS and Service C2 Planning Systems for data exchange compliance -Develop, prototype and integrate Advanced Discrimination Capability into BMDS C2 System -Conduct Terminal High Altitude Air Defense Fire Control integration study with future Army C2 Systems			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603179C / *Advanced C4ISR*	**Project (Number/Name)** MD01 / *Command & Control, Battle Management, Communications (C2BMC)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
-Develop the capability in the sensor resource management system to fully utilize the AN/TPY-2 sensors in support of Discrimination Improvements for Homeland Defense (DIHD) Near-term improvements -Complete development of ground test campaign requirements for DIHD Near-term improvements -Mature planned discrimination technology candidates to support the DIHD Mid-term phase through analysis and prototyping ***FY 2015 Plans:*** N/A			
Accomplishments/Planned Programs Subtotals	-	24.000	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603884C: *SENSORS MILCON*	-	32.204	-	-	-	67.200	85.200	84.000	57.900	-	326.504
• 0603896C: *Ballistic Missile Defense Command and Control, Battle Management & Communication*	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603898C: *Ballistic Missile Defense Joint Warfighter Support*	47.710	42.619	46.387	-	46.387	52.619	53.552	54.699	56.252	Continuing	Continuing
• 0603904C: *Missile Defense Integration and Operations Center (MDIOC)*	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603907C: *Sea Based X-Band Radar (SBX)*	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Command and Control, Battle Management and Communications (C2BMC) acquisition strategy is consistent with the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, incremental development, evolutionary acquisition, and knowledge-based funding. Lockheed Martin Mission Systems is the C2BMC prime contractor via an Other Transaction Agreement contract vehicle, which ended 1st quarter FY 2012. A sole source C2BMC follow-on contract to Lockheed Martin for Spiral Development, Operation and Sustainment, and Testing was awarded 1st quarter FY 2012 for an ordering period of 2nd quarter 2012 through 1st quarter 2017. Major team members to Lockheed are Northrop-Grumman, Boeing, Raytheon, and General Dynamics. They are charged with the development, testing, fielding, training, and operations and sustainment support of the C2BMC system. They perform development and testing of C2BMC products in Arlington, VA; Huntsville, AL; and Colorado Springs, CO; and provide worldwide on-site operations and maintenance support. Additionally, the Defense Information Systems Agency supports C2BMC

Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603179C / *Advanced C4ISR*	**Project (Number/Name)** MD01 / *Command & Control, Battle Management, Communications (C2BMC)*

worldwide long-haul communications. C2BMC Program Office government, Federally Funded Research and Development Center/University Affiliated Research Center, and Contract Support Services personnel are also fully integrated as part of the Prime contractor`s team to function in an Integrated Product Team environment.

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency			Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603179C / *Advanced C4ISR*	Project (Number/Name) MD73 / *Advanced C4ISR*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD73: *Advanced C4ISR*	-	-	12.500	14.545	-	14.545	9.815	3.700	-	-	-	40.560

The FY 2015 OCO Request will be submitted at a later date.

Note

Beginning in FY 2014, the Advanced Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced C4ISR Program Element 0603179C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

A. Mission Description and Budget Item Justification

Advanced Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) enables rapid and exponential capability increases in our command, control, battle management and communications (C2BMC) and existing sensor networks. We will develop and mature technology, software and algorithms which facilitate integration of the Services command and sensor network approaches into the Ballistic Missile Defense System.

The Discrimination Improvements for Homeland Defense (DIHD) effort will develop and field integrated Element capabilities to improve BMD System ability to identify lethal and non-lethal objects. The Advanced C4ISR project will contribute to this effort through the development of advanced discrimination technologies to support the mid-term phase.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Advanced X-Band Radar Capabilities	-	12.500	14.545
Description: N/A			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: -Develop and mature technology for integrated track processing and battlefield decision aids to facilitate integration of the Services command and sensor networks into the Ballistic Missile Defense System (BMDS) -Develop advanced X-band radar target acquisition and discrimination capabilities against threats launched over extended geographical regions on wide range of flight trajectories -Demonstrate C2BMC capabilities to task X-band radar and pass target data to all BMDS weapon systems			
FY 2015 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603179C / *Advanced C4ISR*	**Project (Number/Name)** MD73 / *Advanced C4ISR*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
-Develop advanced X-band radar target acquisition and discrimination capabilities against threats launched over extended geographical regions on wide range of flight trajectories			
Accomplishments/Planned Programs Subtotals	-	12.500	14.545

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603884C: *Ballistic Missile Defense Sensors*	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603896C: *Ballistic Missile Defense Command and Control, Battle Management & Communication*	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603898C: *Ballistic Missile Defense Joint Warfighter Support*	47.710	42.619	46.387	-	46.387	52.619	53.552	54.699	56.252	Continuing	Continuing
• 0603904C: *Missile Defense Integration and Operations Center (MDIOC)*	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603907C: *Sea Based X-Band Radar (SBX)*	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing

Remarks

D. Acquisition Strategy

Advanced X-Band Radar Capabilities follows the Missile Defense Agency`s capability-based acquisition strategy that emphasizes testing, development and evolutionary acquisition. The advanced technology development will include development of target acquisition and discrimination algorithms and assessment of performance. Performance assessment and transition risk reduction will use modeling, simulation, and online or offline assessment of live tracking opportunities. When ready, technology will transition to appropriate program elements for advanced component development and integration into Ballistic Missile Defense System X-Band Radars.

Acquisition will follow the acquisition strategy for radar sustainment and development. The Radar Sustainment Contract (RSC) will be used for both advanced technology development and for transition of technology to systems. The RSC was awarded in 2012 to sustain all the BMDS X-Band Radars. The contract provides sustainment of previously developed X-Band radar products, such as: 1) Software -maintenance of existing software developed to support the X-Band Radars; 2) Models & Simulation; (a) development, maintenance, and verification of high fidelity models, (b) support for war games and exercises, (c) support for performance assessment events; 3) Engineering Services -engineering support for deployed radars to facilitate maintenance efforts which may include but are not limited to hardware obsolescence studies, hardware redesign, technology insertion, and refurbishment efforts; 4) BMDS Test Planning, Execution, and Analysis -planning, execution and

Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603179C / *Advanced C4ISR*	**Project (Number/Name)** MD73 / *Advanced C4ISR*

analysis of BMDS test requirements for previously developed hardware and software in accordance with the MDA Integrated Master Test Plan (IMTP). The contract is an Indefinite Delivery/Indefinite Quantity (IDIQ) task order contract. The contract scope will be assessed for future competitive awards.

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency			Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603179C / *Advanced C4ISR*	Project (Number/Name) MD40 / *Program-Wide Support*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: *Program-Wide Support*	-	-	-	0.784	-	0.784	0.574	0.242	-	-	-	1.600

The FY 2015 OCO Request will be submitted at a later date.

Note

Beginning in FY 2014, the Advanced Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced C4ISR Program Element 0603179C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

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 Service, and Federally Funded Research and Development Center (FFRDC) providing integrity and oversight of the BMDS as well as, supporting MDA in enabling the development and evaluation of technologies that will respond to the changing threat. In addition, includes Global Deployment personnel and support performing deployment site preparation and activation. Other costs included provide facility capabilities for MDA Executing Agent locations, such as physical and technical security, legal services, 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. Also includes legal settlements. In keeping with congressional intent, Program Wide Support is allocated on a pro-rata basis and therefore, fluctuates by year based on the total MDA budget.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	-	-	0.784
Description: See paragraph A: Mission Description and Budget Item Justification			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: N/A			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	-	-	0.784

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603179C / *Advanced C4ISR*	**Project (Number/Name)** MD40 / *Program-Wide Support*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A