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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2017 Office of the Secretary Of Defense **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0607310D8Z <i>I Countering Weapons of Mass Destruction (CWMD) Systems: Operational Systems Development</i>
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	1.872	2.849	1.898	4.194	-	4.194	7.572	7.443	6.917	7.052	Continuing	Continuing
P242: <i>Operational System Development</i>	1.872	2.849	1.898	4.194	-	4.194	7.572	7.443	6.917	7.052	Continuing	Continuing

**Note**

The FY 2017 funding request was reduced by \$1.551 million to account for the availability of prior year execution balances.

**A. Mission Description and Budget Item Justification**

The Countering Weapons of Mass Destruction (CWMD) Systems program is researching, developing, integrating, testing, and deploying a CWMD situational awareness system. This system will enable a comprehensive, global capability for situational awareness of threats from Weapons of Mass Destruction (WMD) as well as global efforts to counter those threats. This system will enable a shared understanding of the CWMD operating environment and will support planning and decision-making by the U.S. government and its partners. The CWMD mission space is characterized by immense amounts of information, such as the characteristics and location of WMD related facilities and materials, personnel and expertise, and dual-use technologies. The CWMD Systems program comprises next-generation advanced information technologies, coupled with affiliated fusion cells, to locate, gather, access, share, and visualize this WMD-relevant information to facilitate collaboration and decision-making. These solutions will revolutionize CWMD knowledge management, providing decision makers and operational personnel a dynamic, tailorable, and holistic view of the global CWMD operating environment.

The diversity and complexity of the CWMD mission requires an integrated approach toward capability development, based on a systems perspective that links strategic objectives with interrelated tasks and associated capabilities. The CWMD mission is intertwined with counter-terrorism and homeland defense and hence system development must leverage and integrate complementary technologies developed to support other mission areas. The CWMD Systems program also will enable international collaboration in countering WMD by breaking down unnecessary data stove-pipes and by enabling the U.S. Government and its partners to access and share knowledge.

This program also responds to the strategic needs outlined in the 2014 Quadrennial Defense Review (QDR), the Department of Defense (DoD) Strategy for Countering WMD, the FY2016-2020 Defense Planning Guidance (DPG), and capability requirements approved by the Joint Requirements Oversight Council (JROC). The CWMD Systems program will develop and field a global CWMD situational awareness capability to meet the needs of Combatant Commands, the Office of the Secretary of Defense (OSD), the Joint Staff, the Services, and Defense Agencies. Other U.S. Government Departments and Agencies will be able to utilize this capability to support their mission needs and collaborate with the Department of Defense. This program is designed to leverage existing DoD resources and proven approaches to achieve its goals and rapidly deliver an operational capability.

The CWMD Systems portfolio is supported by two Research, Development, Test & Evaluation (RDT&E) program elements (0303310D8Z for RDT&E of advanced materiel and non-materiel solutions, and 0607310D8Z for upgrades or improvements to fielded systems), as well as an Operations and Maintenance (O&M) "CWMD Sustainment" line (ORC-2531) for program sustainment and administrative costs associated with analyses, oversight, and portfolio management.

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This Program Element (PE) will fund travel to support the requirements of this program.

This appropriation will finance work, including manpower, performed by a government agency or by private individuals or organizations under a contractual or grant arrangement with the government who conduct research, development and test and evaluation efforts.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
Previous President's Budget	2.948	1.901	5.926	-	5.926
Current President's Budget	2.849	1.898	4.194	-	4.194
Total Adjustments	-0.099	-0.003	-1.732	-	-1.732
• Congressional General Reductions	0.000	-			
• Congressional Directed Reductions	0.000	-			
• Congressional Rescissions	-	-			
• Congressional Adds	0.000	-			
• Congressional Directed Transfers	0.000	-			
• Reprogrammings	-0.001	-			
• SBIR/STTR Transfer	-0.098	-			
• FFRDC	-	-0.003	-	-	-
• Adjustment for availability of prior year execution balances	-	-	-1.551	-	-1.551
• Efficiencies adjustment	-	-	-0.116	-	-0.116
• Economic assumptions adjustment	-	-	-0.045	-	-0.045
• Fiscal guidance adjustment	-	-	-0.020	-	-0.020

**Change Summary Explanation**

The FY 2017 funding request was reduced by (\$1.551) million to account for the availability of prior year execution balances.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Office of the Secretary Of Defense										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0607310D8Z / <i>Countering Weapons of Mass Destruction (CWMD) Systems: Operational Systems Development</i>				<b>Project (Number/Name)</b> P242 / <i>Operational System Development</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
P242: <i>Operational System Development</i>	1.872	2.849	1.898	4.194	-	4.194	7.572	7.443	6.917	7.052	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The CWMD Systems program is researching, developing, integrating, testing, and deploying a CWMD situational awareness system. This system will enable a comprehensive, global capability for situational awareness of threats from WMD as well as global efforts to counter those threats. This system will enable a shared understanding of the CWMD operating environment and will support planning and decision-making by the U.S. government and its partners. The CWMD mission space is characterized by immense amounts of information, such as the characteristics and location of WMD-related facilities and materials, personnel and expertise, and dual-use technologies. The CWMD Systems program comprises next-generation advanced information technologies, coupled with affiliated fusion cells, to locate, gather, access, share, and visualize this WMD-relevant information to facilitate collaboration and decision-making. These solutions will revolutionize CWMD knowledge management, providing decision makers and operational personnel a dynamic, tailorable, and holistic view of the global CWMD operating environment.

The diversity and complexity of the CWMD mission requires an integrated approach toward capability development, based on a systems perspective that links strategic objectives with interrelated tasks and associated capabilities. The CWMD mission is intertwined with counter-terrorism and homeland defense and hence system development must leverage and integrate complementary technologies developed to support other mission areas. The CWMD Systems program also will enable international collaboration in countering WMD by breaking down unnecessary data stove-pipes and by enabling the U.S. Government and its partners to access and share knowledge.

This program also responds to the strategic needs outlined in the 2014 QDR, the DoD Strategy for Countering WMD, the FY2016-2020 DPG, and capability requirements approved by the JROC. The CWMD Systems program will develop and field a global CWMD situational awareness capability to meet the needs of Combatant Commands, the OSD, the Joint Staff, the Services, and Defense Agencies. Other U.S. Government Departments and Agencies will be able to utilize this capability to support their mission needs and collaborate with the DoD. This program is designed to leverage existing DoD resources and proven approaches to achieve its goals and rapidly deliver an operational capability.

The CWMD Systems portfolio is supported by two RDT&E program elements (0303310D8Z for RDT&E of advanced materiel and non-materiel solutions, and 0607310D8Z for upgrades or improvements to fielded systems), as well as an O&M line "CWMD Sustainment" (ORC-2531) for program sustainment and administrative costs associated with analyses, oversight, and portfolio management.

This PE will fund travel to support the requirements of this program.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Office of the Secretary Of Defense	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0607310D8Z / <i>Countering Weapons of Mass Destruction (CWMD) Systems: Operational Systems Development</i>	<b>Project (Number/Name)</b> P242 / <i>Operational System Development</i>
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This appropriation will finance work, including manpower, performed by a government agency or by private individuals or organizations under a contractual or grant arrangement with the government who conduct research, development and test and evaluation efforts.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2015	FY 2016	FY 2017
<p><b>Title:</b> CWMD Systems: Operational Systems Development</p> <p><b>Description:</b></p> <ul style="list-style-type: none"> <li>• Upgrade and improve fielded CWMD situational awareness systems and system components to locate, gather, fuse, share, and visualize WMD and CWMD information, facilitate collaboration, and support planning and decision-making.</li> <li>• Address the prioritized capability needs of existing information systems and other platforms to augment, upgrade and enhance core CWMD capabilities.</li> <li>• Provide upgrades and enhancements to previous software capability releases, providing continuity and compatibility across the systems.</li> </ul> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• Upgraded and enhanced capabilities in deployed CWMD situational awareness systems.</li> <li>• Integrated, upgraded and enhanced existing data sources, applications, widgets and tools from the Defense Intelligence Agency (DIA) into existing and prototype information systems.</li> <li>• Supported semi-annual collection, validation, and prioritization of capability needs for updated and new system capabilities.</li> <li>• Updated and integrated infrastructure and systems required for fusion cells complementing Constellation prototype information system.</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>• Upgrade and enhance capabilities in deployed CWMD situational awareness systems.</li> <li>• Integrate and upgrade or enhance existing data sources, applications, widgets and tools from the DIA into existing and prototype information systems.</li> <li>• Support semi-annual collection, validation, and prioritization of capability requirements needs for updated and new system capabilities.</li> <li>• Update and integrate infrastructure and systems required for fusion cells complementing Constellation prototype information system.</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>• Continue to upgrade and enhance deployed capabilities in Constellation prototype and other CWMD situational awareness systems.</li> <li>• Support semi-annual collection, validation, and prioritization of capability requirements for updated and new system capabilities.</li> <li>• Support comprehensive review of infrastructure and systems required for fusion cells and Constellation end users in Combatant Commands and other DoD Components, U.S. agencies, and key Allied government agencies.</li> </ul>	2.849	1.898	4.194

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
• Build/upgrade/modify the infrastructure, including hardware and software for computational and processing capabilities, training, and organizational support.			
<b>Accomplishments/Planned Programs Subtotals</b>	2.849	1.898	4.194

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

N/A

**Remarks**

**D. Acquisition Strategy**

Assess utility of Constellation information system beginning with the deployment of a developmental prototype in FY16 with incremental capability releases that mature into an operational CWMD situational awareness capability, through application of agile infrastructure and software development methodologies.

**E. Performance Metrics**

Success in this area is measured by compliance with various statutes and DoD directives that govern the conduct of the affairs within the Office of the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (OASD/NCB). Maintain cost, schedule, and performance reporting, review, and adjudication. Maintain requirements traceability matrix.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2017 Office of the Secretary Of Defense</b>											<b>Date:</b> February 2016		
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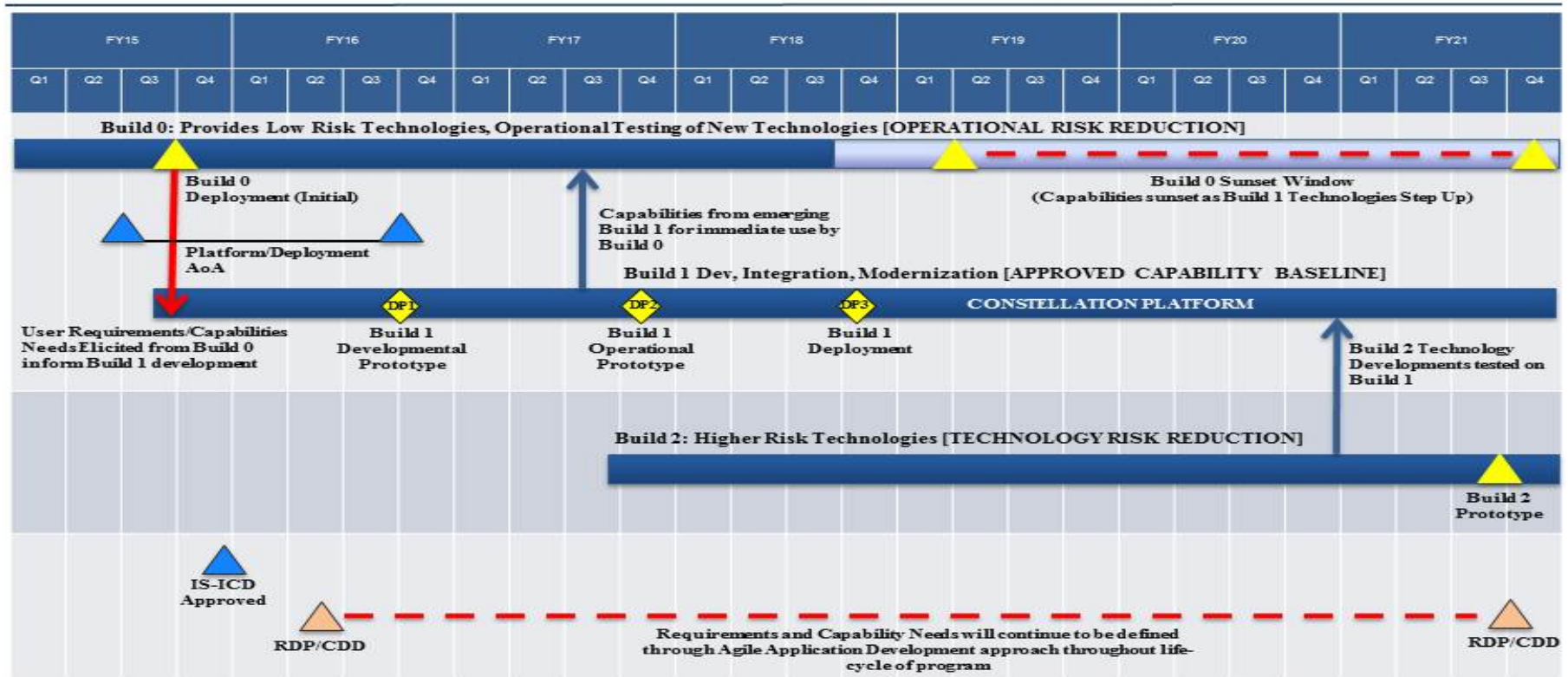
<b>Product Development (\$ in Millions)</b>				<b>FY 2015</b>		<b>FY 2016</b>		<b>FY 2017 Base</b>		<b>FY 2017 OCO</b>		<b>FY 2017 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Product Development	TBD	VAR - Various : TBD	1.872	2.849		0.949		2.097		-		2.097	Continuing	Continuing	-
Test and Evaluation	Various	Support Cells : DTRA and DIA	-	-		0.626		1.384		-		1.384	Continuing	Continuing	-
Management Services	FFRDC	MITRE & JHU-APL : MA & VA	-	-		0.323		0.713		-		0.713	Continuing	Continuing	-
<b>Subtotal</b>			1.872	2.849		1.898		4.194		-		4.194	-	-	-
<b>Project Cost Totals</b>			1.872	2.849		1.898		4.194		-		4.194	-	-	-

**Remarks**  
 This appropriation will finance work, including manpower, performed by a government agency or by private individuals or organizations under a contractual or grant arrangement with the government who conduct research (systematic study directed toward fuller scientific knowledge or understanding of the subject studied), development (systematic use of the knowledge and understanding gained from research, for the production of useful materials, devices, systems, or methods, including the design and development of prototypes and processes) and test and evaluation efforts.

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Office of the Secretary Of Defense		Date: February 2016
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## Constellation Schedule



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2017 Office of the Secretary Of Defense		<b>Date:</b> February 2016
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Constellation Build 0: OPERATIONAL RISK REDUCTION</b>				
Operational Testing of New Technologies	1	2014	4	2021
Initial Deployment	3	2015	3	2015
Incorporate capabilities from emerging Build 1 for immediate use by Build 0	3	2017	3	2017
Sunset Window (Capabilities sunset an Build 1 technologies step-up)	2	2019	4	2021
<b>Constellation Build 1: APPROVED CAPABILITIES BASELINE</b>				
Develop, Integration & Modernization	3	2015	4	2021
Analysis of Alternatives (AoA)	3	2015	4	2016
Build 1 Developmental Prototype (DP1)	4	2016	4	2016
Build 1 Operational Prototype (DP2)	4	2017	4	2017
Build 1 Deployment (DP3)	4	2018	4	2018
Build 2 technology developments tested on Build 1	4	2020	4	2020
<b>Constellation Build 2: TECHNOLOGY RISK REDUCTION</b>				
Higher Risk Technologies	3	2017	4	2021
Prototype	3	2021	3	2021
<b>Requirements and Capabilities Needs</b>				
Information Systems Initial Capabilities Document (IS ICD) Approved	4	2015	4	2015
Requirements Definition Package (RDP) / Capability Development Document (CDD)	2	2016	2	2016
Agile Requirements and Capabilities Development	2	2016	4	2021