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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</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	-	28.102	33.561	33.361	-	33.361	43.983	49.922	43.703	48.309	Continuing	Continuing
CA7: <i>CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV</i>	-	0.491	4.837	6.113	-	6.113	6.880	6.988	6.986	9.585	Continuing	Continuing
CM7: <i>HOMELAND DEFENSE (OP SYS DEV)</i>	-	1.330	1.915	1.627	-	1.627	2.133	2.081	1.783	4.605	Continuing	Continuing
CO7: <i>COLLECTIVE PROTECTION (OP SYS DEV)</i>	-	0.000	0.000	4.466	-	4.466	4.370	2.853	0.000	0.000	0	11.689
IP7: <i>INDIVIDUAL PROTECTION (OP SYS DEV)</i>	-	2.452	3.214	1.059	-	1.059	1.713	1.947	1.620	1.458	Continuing	Continuing
IS7: <i>INFORMATION SYSTEMS (OP SYS DEV)</i>	-	4.703	7.703	10.357	-	10.357	12.707	13.219	13.967	13.590	Continuing	Continuing
MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>	-	13.186	11.801	7.145	-	7.145	9.575	16.516	13.931	13.338	Continuing	Continuing
TE7: <i>TEST & EVALUATION (OP SYS DEV)</i>	-	5.940	4.091	2.594	-	2.594	6.605	6.318	5.416	5.733	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element supports developmental efforts to upgrade systems in the Department of Defense (DoD) Chemical Biological Defense Program that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Efforts in this program element support the upgrade of fielded CB defense equipment against emerging chemical threat agents and toxic industrial chemicals. Specifically this program includes: (1) the upgrade and modernization of contamination avoidance systems; (2) the upgrade and modernization of homeland defense systems; (3) the upgrade and modernization of collective protection and individual protection systems; (4) the upgrade and modernization of information systems; (5) the Software Support Activity (SSA); (6) the upgrade and modernization of medical systems; and (7) revitalization and technical upgrade of existing instrumentation and equipment at Dugway Proving Ground (DPG).

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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>
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B. Program Change Summary (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	28.496	33.561	33.358	-	33.358
Current President's Budget	28.102	33.561	33.361	-	33.361
Total Adjustments	-0.394	0.000	0.003	-	0.003
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	0.000	-			
• Congressional Directed Transfers	0.000	-			
• Reprogrammings	0.000	-			
• SBIR/STTR Transfer	-0.394	-			
• Other Adjustments	0.000	-	0.003	-	0.003

Change Summary Explanation

Funding: N/A

Schedule: N/A

Technical: N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program										Date: February 2016		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) CA7 / CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV			
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
CA7: CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	-	0.491	4.837	6.113	-	6.113	6.880	6.988	6.986	9.585	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides the technology upgrade and refresh effort for the Chemical Biological Radiological Nuclear Dismounted Reconnaissance Systems (CBRN DRS) with emerging technologies and capabilities which will address and mitigate equipment obsolescence.

The CBRN Dismounted Reconnaissance Systems (CBRN DRS) consists of portable, commercial and Government off-the-shelf equipment which provides personnel protection from current and emerging CBRN hazards through detection, identification, sample collection, decontamination, marking, and hazard reporting for CBRN threats. The system supports Dismounted Reconnaissance, Surveillance, and CBRN Site Assessment missions which enables more detailed and near real-time CBRN information flow for the Warfighter. The program will address emerging CBRN threat requirements in order to provide an enhanced capability for the future.

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

	FY 2015	FY 2016	FY 2017
Title: 1) CBRN DRS	0.491	3.244	6.113
FY 2015 Accomplishments: Initiated market analyses on emerging technologies for potential upgrades to the system. Initiated obsolescence management activities for existing fielded components.			
FY 2016 Plans: Continue market analyses on emerging technologies for potential upgrades to the system. Continue obsolescence management activities for existing fielding components.			
FY 2017 Plans: Continue market analyses on emerging technologies for potential upgrades to the system. Continue obsolescence management activities for existing fielding components. Continue purchasing components for testing. Continue testing of potential candidates. Initiate changes to product baseline.			
Title: 2) CBRN DRS	-	1.500	-
FY 2016 Plans: Initiate testing of potential candidates (10 components at approximately \$100,000 each)			
Title: 3) SBIR/STTR	-	0.093	-

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) CA7 / CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
FY 2016 Plans: SBIR/STTR - FY16 - Small Business Innovative Research.			
Accomplishments/Planned Programs Subtotals	0.491	4.837	6.113

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

N/A

Remarks

D. Acquisition Strategy

CBRN DISMOUNTED RECONNAISSANCE SYSTEMS

The Chemical Biological Radiological Nuclear Dismounted Reconnaissance Systems (CBRN DRS) program uses a government-off-the-shelf (GOTS)/commercial-off-the-shelf (COTS) non-developmental item (NDI) single step acquisition approach to full capability. This strategy employs an NDI acquisition concept to establish a simplified management framework to translate mission needs and emerging technology capabilities into a stable, affordable, and well-managed acquisition program. CBRN DRS systems will be produced using a workshare approach between Organic assets and Contractor workforce.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) CA7 / CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CBRN DRS - HW C - Product Development	C/CPFF	TBD : TBD	0.000	0.000		1.000	Mar 2016	1.552	Mar 2017	-		1.552	Continuing	Continuing	0.000
Subtotal			0.000	0.000		1.000		1.552		-		1.552	-	-	0.000

Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CBRN DRS - ES C - Market Analysis	C/CPFF	Johns Hopkins University - Applied Physics Lab : Laurel, MD	0.000	0.301	Jun 2015	1.350	Jan 2016	1.486	Jan 2017	-		1.486	Continuing	Continuing	0.000
CBRN DRS - ES C - Obsolescence Management	MIPR	TBD : TBD	0.000	0.000		0.950	Jan 2016	0.980	Dec 2016	-		0.980	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		0.093	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
Subtotal			0.000	0.301		2.393		2.466		-		2.466	-	-	0.000

Test and Evaluation (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CBRN DRS - OTE S - Candidate Testing	MIPR	Various : TBD	0.000	0.000		0.500	Mar 2016	1.075	Mar 2017	-		1.075	Continuing	Continuing	0.000
Subtotal			0.000	0.000		0.500		1.075		-		1.075	-	-	0.000

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) CA7 / CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV
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FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

CBRN DRS - Test components to replace obsolete items and insert new technologies	
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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) CA7 / CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CBRN DRS - Test components to replace obsolete items and insert new technologies	2	2015	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program										Date: February 2016		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) CM7 / HOMELAND DEFENSE (OP SYS DEV)			
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
CM7: HOMELAND DEFENSE (OP SYS DEV)	-	1.330	1.915	1.627	-	1.627	2.133	2.081	1.783	4.605	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Experimentation and demonstration will be used in this phase to reduce risk and inform supporting materiel solutions, CONOPS and TTPs.

The Weapons of Mass Destruction Civil Support Team (WMD CST) Program supports the fielded system upgrade and ongoing assessment and acquisition of commercial off-the-shelf (COTS) and Government off-the-shelf (GOTS) analytical detection, protection, decontamination and sampling equipment for survey in order to expand/enhance the operational capabilities of the (57) WMD CST Teams.

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

	FY 2015	FY 2016	FY 2017
Title: 1) WMD CST - Component Test and Evaluation	0.688	1.078	1.115
<p>Description: General system-related test activities, including costs of specially fabricated hardware to obtain or validate engineering data on the performance of the system. This element also includes costs of the detailed planning, conduct, support, data reduction, and reports from such testing, as well as hardware items that are consumed or planned to be consumed in the conduct of such operations.</p> <p>FY 2015 Accomplishments: Completed test and evaluation of GC Mass Spectrometer and validates critical reagents in support of fielded capabilities within the Analytical Laboratory System (ALS).</p> <p>FY 2016 Plans: Provides system-related test activities, including costs of specially fabricated hardware to obtain or validate engineering data on the performance of the system. This element also includes costs of the detailed planning, conduct, support, data reduction, and reports from such testing, as well as hardware items that are consumed or planned to be consumed in the conduct of such operations.</p> <p>FY 2017 Plans: Provides system-related test activities, including costs of specially fabricated hardware to obtain or validate engineering data on the performance of the system. This element also includes costs of the detailed planning, conduct, support, data reduction,</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016		
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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
and reports from such testing, as well as hardware items that are consumed or planned to be consumed in the conduct of such operations.				
Title: 2) WMD CST - System Engineering and Program Management		0.642	0.800	0.512
Description: System engineering and technical control, as well as the business management of the system/program.				
FY 2015 Accomplishments: Provided system engineering and technical control, as well as the business management of the system/program. It encompasses the overall planning, direction, and control of the definition, development, and production of the system, including functions of logistics engineering and integrated logistics support (ILS) management (e.g., maintenance support, facilities, personnel, training, testing, and activation of the system).				
FY 2016 Plans: Provides system engineering and technical control, as well as the business management of the system/program. It encompasses the overall planning, direction, and control of the definition, development, and production of the system, including functions of logistics engineering and integrated logistics support (ILS) management (e.g., maintenance support, facilities, personnel, training, testing, and activation of the system).				
FY 2017 Plans: Provides system engineering and technical control, as well as the business management of the system/program. It encompasses the overall planning, direction, and control of the definition, development, and production of the system, including functions of logistics engineering and integrated logistics support (ILS) management (e.g., maintenance support, facilities, personnel, training, testing, and activation of the system).				
Title: 3) SBIR/STTR		-	0.037	-
FY 2016 Plans: SBIR/STTR - FY16 - Small Business Innovative Research.				
Accomplishments/Planned Programs Subtotals		1.330	1.915	1.627
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
WMD - CIVIL SUPPORT TEAMS (WMD CST)				

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Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) CM7 / <i>HOMELAND DEFENSE (OP SYS DEV)</i>

The Weapons of Mass Destruction Civil Support Team Program (WMD-CST) is a COTS based program that supports the evaluation of advancements in CBRN commercial off the shelf (COTS)/government-off-the-shelf (GOTS) equipment against the current technology baseline of equipment fielded to the (57) WMD CST Teams. As such, the program establishes a time phased modernization plan to integrate and incorporate proven advancements in commercially available technology into the CST operating mission set based on highest priority capability requirements and availability of resources.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) CM7 / HOMELAND DEFENSE (OP SYS DEV)
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Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
WMD CST - ES C - SEPM	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.373	0.304	Mar 2015	0.400	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		0.037	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
Subtotal			0.373	0.304		0.437		0.000		-		0.000	-	-	0.000

Test and Evaluation (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
WMD CST - OTH T C - CBRN COTS Component	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	1.128	0.688	Mar 2015	1.078	Mar 2016	1.115	Mar 2017	-		1.115	Continuing	Continuing	0.000
Subtotal			1.128	0.688		1.078		1.115		-		1.115	-	-	0.000

Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
WMD CST - PM/MS SB - CBRN COTS	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.297	0.338	Mar 2015	0.400	Mar 2016	0.512	Mar 2017	-		0.512	Continuing	Continuing	0.000
Subtotal			0.297	0.338		0.400		0.512		-		0.512	-	-	0.000

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		1.798	1.330	1.915	1.627	1.627	-	-	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program							Date: February 2016			
Appropriation/Budget Activity 0400 / 7			R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)			Project (Number/Name) CM7 / HOMELAND DEFENSE (OP SYS DEV)				
	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) CM7 / HOMELAND DEFENSE (OP SYS DEV)

FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

WMD CST - Upgrade Fielded Systems	[REDACTED]																											
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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) CM7 / HOMELAND DEFENSE (OP SYS DEV)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
WMD CST - Upgrade Fielded Systems	1	2015	4	2021

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) CO7 / COLLECTIVE PROTECTION (OP SYS DEV)
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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
CO7: COLLECTIVE PROTECTION (OP SYS DEV)	-	0.000	0.000	4.466	-	4.466	4.370	2.853	0.000	0.000	0	11.689
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The efforts funded by this appropriation will improve fielded chemical and biological protection capabilities for Joint Expeditionary Collective Protection (JECp). In FY17-18, this funding will develop a leakage test capability that will allow the Warfighter to validate the integrity of collective protection / Filtration systems. In FY17-19, this funding will also integrate newly developed filtration material into existing M98 filter sets. These new filters will provide the Warfighter with improved protection against toxic industrial chemicals and toxic industrial materials while maintaining performance characteristics against Chemical Warfare Agents and meeting military standards. Additionally, these improvements can serve a dual purpose by providing improvements to other Collective Protection Systems such as the Chemical and Biological Protective Shelter, Shipboard Collective Protection Systems, Fixed Site Collective Protection Systems, M20A1 Simplified Collective Protection Equipment, and the Collectively Protected Field Hospitals.

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

	FY 2015	FY 2016	FY 2017
Title: 1) JECp Field Leakage Test Capability	-	-	0.296
Description: Improve field leakage test capability, simulate test methods and field operator procedures.			
FY 2017 Plans: Initiate development of leakage test capability. Evaluate potential simulant test methods. Down select designs and develop field operator procedures.			
Title: 2) JECp Filtration Improvements	-	-	4.170
Description: Improve M98 filter set capability.			
FY 2017 Plans: Initiate design and development of improved M98 filter set capability to meet chemical / biological (CB) and toxic industrial chemical (TIC) / toxic industrial material (TIM) requirements. Initiate preliminary testing and procure CB/TIC/TIM materials for testing.			
Accomplishments/Planned Programs Subtotals	-	-	4.466

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

N/A

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

Remarks

D. Acquisition Strategy

JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)

Strategy based on evolutionary development, based on a family of systems approach. After MS B, awarded competitive Cost Plus Incentive Fee (CPIF) contract to Science Applications International Corporation (now Leidos) in 2008 to build prototypes subjected to robust engineering developmental testing and Operational Assessment during the Engineering and Manufacturing Development (EMD) phase. After MS C, awarded a Firm Fixed Price (FFP) option to Leidos in September 2013 for Low Rate Initial Production (LRIP) systems to support formal Developmental Testing (DT) and Multi-Service Operational Test & Evaluation (MOT&E) events. In addition, a Fixed Price Incentive Firm Target (FPIF) option was awarded to Leidos in January 2014 to perform non-recurring engineering (NRE) and logistic product development associated with the LRIP system configurations. A post MS C Milestone Decision Authority Acquisition Decision Memorandum, dated March 2014, separated the program into two phases. Phase two systems will be developed as engineering changes to phase one systems. A business case analysis (BCA) will be conducted to determine the best strategy for full rate production. Following a successful Full Rate Production (FRP) decision for phase one systems implement recommendations from the BCA. Phase two systems will undergo limited developmental and operational testing and then pursue a MS C full rate production decision. BA7 funding develops incremental improvements to fielded systems.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) COT / COLLECTIVE PROTECTION (OP SYS DEV)
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JECP - HW S - Field Leakage Test Capability Development	MIPR	US Army Natick Soldier RD&E Center : Natick, MA	0.000	0.000		0.000		0.296	Nov 2016	-		0.296	0.000	0.296	0.000
JECP - HW C - Improved M98 Filter Set Development	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.600	Nov 2016	-		0.600	0.000	0.600	0.000
JECP - HW C - Improved M98 Filter Set Manufacturability Development	MIPR	Pine Bluff Arsenal : Pine Bluff, AR	0.000	0.000		0.000		0.400	Nov 2016	-		0.400	0.000	0.400	0.000
JECP - HW C - Improved M98 Fitter Set Design Improvements	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center : Dahlgren, VA	0.000	0.000		0.000		0.300	Nov 2016	-		0.300	0.000	0.300	0.000
Subtotal			0.000	0.000		0.000		1.596		-		1.596	0.000	1.596	0.000

Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JECP - ES S - Systems Engineering Oversight	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center : Dahlgren, VA	0.000	0.000		0.000		0.406	Nov 2016	-		0.406	0.000	0.406	0.000
Subtotal			0.000	0.000		0.000		0.406		-		0.406	0.000	0.406	0.000

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program			Date: February 2016
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	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JECP - Field Leakage Tester Development																												
JECP - Field Leakage Tester Development Testing																												
JECP - Field Leakage Tester Limited User Test																												
JECP - Improved M98 Filter Set Development																												
JECP - Improved M98 Filter Set Developmental Testing																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JECP - Field Leakage Tester Development	1	2017	2	2018
JECP - Field Leakage Tester Development Testing	1	2018	1	2018
JECP - Field Leakage Tester Limited User Test	2	2018	2	2018
JECP - Improved M98 Filter Set Development	1	2017	2	2018
JECP - Improved M98 Filter Set Developmental Testing	1	2017	3	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program										Date: February 2016		
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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
IP7: INDIVIDUAL PROTECTION (OP SYS DEV)	-	2.452	3.214	1.059	-	1.059	1.713	1.947	1.620	1.458	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project provides for filter modernization and enhancements against Toxic Industrial Chemicals (TICs) and Toxic Industrial Materials (TIMs) on the Joint Service General Purpose Mask (JSGPM). These upgrades will be provided for fielded Protection systems to enhance respiratory and ocular protection. They are currently being developed by the Joint Science and Technology Office (JSTO) as a synthetic nano-structured material focused on TIC removal and expected to transition to the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) in FY16.

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

	FY 2015	FY 2016	FY 2017
Title: 1) JSGPM	2.452	3.151	1.059
Description: Advanced Respiratory Protection Initiative (ARPI) - M61 Filter Modernization			
FY 2015 Accomplishments: Received layered bed filters for testing concepts, continued ongoing layered bed and media testing in operationally relevant environments, and awarded competitive delivery orders to two vendors for layered bed filters to support advanced technology and manufacturing readiness levels.			
FY 2016 Plans: Complete CoZZAT prototype development and conduct Product Qualification Testing (PQT). Begin developing the second technology transition effort, Metal Organic Framework (MOF) Media, an engineered media that is a porous crystalline compound made up of metal ions and organic bridging molecules (ligands) for targeted removal of chemicals. It is currently being developed by JSTO as a synthetic nano-structured material focused on TIC removal.			
FY 2017 Plans: Continue maturation of CoZZAT filters. Begin MOF filter bed design analysis and initial prototype builds as technology transitions from JSTO.			
Title: 2) SBIR/STTR	-	0.063	-
FY 2016 Plans: SBIR/STTR - FY16 - Small Business Innovative Research.			
Accomplishments/Planned Programs Subtotals	2.452	3.214	1.059

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

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

Line Item	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
• JI0003: JOINT SERVICE GENERAL PURPOSE MASK (JSGPM)	63.346	60.777	55.118	-	55.118	48.982	0.000	0.000	0.000	0	228.223

Remarks

D. Acquisition Strategy

JS GENERAL PURPOSE MASK (JSGPM)

The JSGPM Advanced Respiratory Protection Initiative (ARPI) effort is using the two M61 filter contracts awarded to 3M and Avon to develop improved filters for the JSGPM. There is a continual technology refreshment CLIN on both contracts that allow for filter development tasks to be awarded. The tasks can be competed between the two awardees or awarded to both to ensure competition on future spares and delivery orders. As filter technologies transition from the Defense Threat Reduction Agency (DTRA) and Joint Science and Technology Office (JSTO), the technologies will be matured from system/subsystem prototyping demonstration technologies at Technology Readiness Level (TRL) 6 to actual system "mission proven" through successful mission operations in a mission environment at TRL 9. In addition to the maturing of the technology, the Manufacturing Readiness Level (MRL) of the media and the layered bed design requires maturing to an MRL level 9. The complexity of maturing all these different items requires an evolutionary approach with one prototype iteration governing the approach on the next iteration. With the criticality of the filter, the production transition to the new improved filter has to be done with a high degree of confidence with risks mitigated to a low level.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JSGPM - HW C - Filter Prototypes #1 (CoZZAT)	C/FFP	AVON Protection Systems Inc. : Cadillac, MI	0.000	0.486	Sep 2015	0.625	Jan 2016	0.287	Jan 2017	-		0.287	Continuing	Continuing	0.000
JSGPM - HW C - Filter Prototypes #2 (CoZZAT)	C/FFP	3M Canada : Brockville Ontario, CN	0.000	0.338	Sep 2015	0.600	Jan 2016	0.287	Jan 2017	-		0.287	Continuing	Continuing	0.000
JSGPM - HW C - Layered Bed Filters for Concept Testing (CoZZAT)	C/CPFF	AVON Protection Systems Inc. : Cadillac, MI	0.000	0.165	Dec 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000
Subtotal			0.000	0.989		1.225		0.574		-		0.574	-	-	0.000

Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JSGPM - ES C - System Filter Bed Design Analysis (CoZZAT)	MIPR	Various : TBD	0.270	0.357	Dec 2014	0.487	Dec 2015	0.200	Jan 2017	-		0.200	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		0.063	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
Subtotal			0.270	0.357		0.550		0.200		-		0.200	-	-	0.000

Test and Evaluation (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JSGPM - DTE C - System Filters (CoZZAT)	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.400	Jan 2015	0.725	Jan 2016	0.000		-		0.000	Continuing	Continuing	0.000
Subtotal			0.000	0.400		0.725		0.000		-		0.000	-	-	0.000

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program			Date: February 2016
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	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JSGPM - Bed Design Analysis (CoZZAT)	██████																											
JSGPM - TD Contract Award (CoZZAT)	██████																											
JSGPM - Prototype Development (CoZZAT)	████████████████████																											
JSGPM - Product Qualification Testing (CoZZAT)													██████															
JSGPM - ECP Production (CoZZAT)													██████															
JSGPM - Bed Design Analysis (MOF)									██████																			
JSGPM - Prototype Development (MOF)									████████																			
JSGPM - Prototype Testing (MOF)													██████████████															

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JSGPM - Bed Design Analysis (CoZZAT)	1	2015	2	2015
JSGPM - TD Contract Award (CoZZAT)	2	2015	3	2015
JSGPM - Prototype Development (CoZZAT)	2	2015	2	2017
JSGPM - Product Qualification Testing (CoZZAT)	1	2018	2	2018
JSGPM - ECP Production (CoZZAT)	3	2018	4	2018
JSGPM - Bed Design Analysis (MOF)	2	2017	4	2017
JSGPM - Prototype Development (MOF)	3	2017	1	2018
JSGPM - Prototype Testing (MOF)	2	2018	1	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program										Date: February 2016		
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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
IS7: INFORMATION SYSTEMS (OP SYS DEV)	-	4.703	7.703	10.357	-	10.357	12.707	13.219	13.967	13.590	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project provides for the upgrade and modernization of fielded Information Systems including the Joint Effects Model (JEM) and the Joint Warning and Reporting Network (JWARN). This project also provides for the Software Support Activity (SSA).

Efforts included in this project are: (1) Joint Effects Model (JEM); (2) the Joint Warning and Reporting Network (JWARN); and (3) Software Support Activity (SSA).

JEM and JWARN utilize the Joint Capabilities Integration and Development System (JCIDS) Manual prescribed Information Technology Box (IT Box) construct for managing requirements for the follow-on increments of capability development. The "IT Box" is an acquisition approach and methodology regarding how software systems should be developed and fielded. It is a process that differs from the way DoD acquires hardware systems. The acquisition approach uses the Information Systems Initial Capabilities Document (IS ICD) to describe the required operational capabilities for the entire development effort. These overarching requirements are further broken out into Requirements Definition Packages (RDPs) released over the life of the product instead of a single Capability Development Document released early in the program. "Agile Software Development", a term used frequently through the JPM IS R forms, is a set of industry standard software development methods used in conjunction with the IT Box framework. Agile Software Development promotes adaptive planning, evolutionary development, early delivery, continuous improvement, and encourages rapid and flexible response to change. The Agile methodology is an alternative to traditional program management, typically used in software development. It helps teams respond to unpredictability through incremental, iterative work cadences, known as sprints. Agile methodologies are an alternative to waterfall, or traditional sequential development.

IT Box enables programs to tailor the incrementally fielded software program model in the DODI 5000.02 Interim to conduct multiple, more frequent fielding events in lieu of a single fielding event. Programs conduct a single Milestone B (MSB) decision by the Milestone Decision Authority that covers the entire program. MS B is followed by a series of supporting Build Decisions (BDs) associated with each RDP as they are released. The supporting BDs will ensure incorporation of mature technology and development efforts culminating in incremental deliveries of capability to Joint and Service Command and Control (C2) architectures. Instead of a single Milestone C decision and fielding event for one increment, the program will return to the MDA for more frequent fielding decisions, as often as annually, as portions of capability are determined suitable and operationally effective. These multiple fielding efforts are based on providing capabilities with the most value to the operators based on Warfighter priorities/needs, maturation of the technology being incorporated and available resources supporting the effort.

The Software Support Activity (SSA) is a Chem-Bio Defense user developmental support and service organization to facilitate net-centric interoperability of systems in acquisition for the Warfighter. The SSA provides the CBRN Warfighter with Joint Service solutions for Cybersecurity/Information Assurance (CS/IA), Integrated Architectures, Data Management/Modeling, Interoperability Certifications, Verification, Validation and Accreditation (VV&A) to support interoperable and integrated net-centric, service-oriented solutions for CBRN systems. The SSA emphasizes development of reference implementations to guide Government and industry system and

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software developers to ensure that their products meet common interoperability standards. The latest technologies/products include the definition of a Common CBRN Sensor Integration Standard (CCSI) and the CBRN Data Model. These technologies and direct enablers for the development of CBRN integrated sensor networks and the dissemination of CBRN information across all users. The SSA directly supports Chemical and Biological Defense Program (CBDP) initiatives by providing common service oriented architectures and frameworks for the collection and dissemination of Bio-Surveillance and other critical CBRN information.

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

	FY 2015	FY 2016	FY 2017
<p>Title: 1) JEM Command and Control (C2) Modernization Efforts</p> <p>FY 2015 Accomplishments: Upgraded the fielded JEM software to adapt to changing Army, Navy, Air Force, Marine Corps, SOCOM, and National Guard C2 host architectures, systems, and standards in order to maintain interoperability and avert cyber threats and vulnerabilities to host C2 systems. Performed test and evaluation of updated JEM software baseline.</p> <p>FY 2016 Plans: Continue to update fielded JEM Increment 1 software due to changing Army, Navy, Air Force, Marine Corps, SOCOM, and National Guard C2 host architectures, systems, and standards in order to maintain interoperability and avert cyber threats and vulnerabilities to host C2 systems. Perform test and evaluation of updated JEM Increment 1 baselines.</p> <p>FY 2017 Plans: Continue to update fielded JEM Increment 1 software due to changing Army, Navy, Air Force, Marine Corps, SOCOM, and National Guard C2 host architectures, systems, and standards in order to maintain interoperability and avert cyber threats and vulnerabilities to host C2 systems. Perform test and evaluation of updated JEM Increment 1 baselines.</p>	0.322	0.986	1.626
<p>Title: 2) JEM Pre-Planned Product Improvement (P3I)</p> <p>FY 2015 Accomplishments: Developed, tested, and integrated science and technology upgrades and model enhancements into previously fielded JEM software in order to improve JEM accuracy and precision. Improved JEM architecture and overall performance through software updates and deficiency resolution.</p> <p>FY 2016 Plans: Test and integrate fielded JEM Increment 1 and Increment 2 software with science and technology upgrades and model enhancements to improve JEM accuracy and precision. Improve JEM Increment 1 and Increment 2 architecture and overall performance through software updates and deficiency resolution. Both Increment 1 and Increment 2 software will be supported until all service C2 systems with Increment 1 software are fielded with Increment 2 software.</p> <p>FY 2017 Plans: Test and integrate fielded JEM Increment 1 and Increment 2 software with science and technology upgrades and model enhancements that improve JEM accuracy and precision. Improve fielded JEM Increment 1 and Increment 2 architecture and</p>	1.053	1.859	3.155

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
overall performance through software updates and deficiency resolution. Both Increment 1 and Increment 2 software will be supported until all service C2 systems with Increment 1 software are fielded with Increment 2 software.				
Title: 3) JWARN System Modernization/Update Development		1.674	2.698	3.361
FY 2015 Accomplishments: Completed engineering and development efforts to upgrade existing, operational JWARN Systems in order to maintain interoperability, efficiency and functionality within the targeted C2 systems while utilizing the IT BOX construct and Agile Software development processes.				
FY 2016 Plans: Continue engineering and development efforts to upgrade existing, operational JWARN Systems in order to maintain interoperability, efficiency and functionality within the targeted C2 systems while utilizing the IT BOX construct and Agile Software development processes.				
FY 2017 Plans: Continue engineering and development efforts to upgrade existing, operational JWARN Systems in order to maintain interoperability, efficiency and functionality within the targeted C2 systems while utilizing the IT BOX construct and Agile Software development processes.				
Title: 4) JWARN Program Management Support		0.227	0.499	0.606
FY 2015 Accomplishments: Provided JWARN program financial management, scheduling, planning and reporting support to modernization effort under the IT BOX construct and Agile Software development processes.				
FY 2016 Plans: Continue JWARN program financial management, scheduling, planning and reporting support to modernization effort under the IT BOX construct and Agile Software development processes.				
FY 2017 Plans: Continue JWARN program financial management, scheduling, planning and reporting support to modernization effort under the IT BOX construct and Agile Software development processes.				
Title: 5) JWARN IT BOX Test & Evaluation (T&E)		0.227	0.331	0.403
FY 2015 Accomplishments:				

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
<p>Conducted required Governmental developmental and operational testing on JWARN software updates and modernization efforts under the IT BOX construct and Agile Software testing processes.</p> <p>FY 2016 Plans: Continue required Governmental developmental and operational testing on JWARN software updates and modernization efforts under the IT BOX construct and Agile Software testing processes.</p> <p>FY 2017 Plans: Continue required Governmental developmental and operational testing on JWARN software updates and modernization efforts under the IT BOX construct and Agile Software testing processes.</p>				
<p>Title: 6) SSA Policies, Standards and Guidelines</p> <p>FY 2015 Accomplishments: Supported programs in the Interoperability and Supportability (I&S) certification, Information Support Plan (ISP), and Data and Service Exposure Verification and Registration. Updated existing programs and registered new programs in the Army Portfolio Management Solution/Army Information Technology Registry (APMS/AITR).</p> <p>FY 2016 Plans: Continue to support programs in the Interoperability and Supportability (I&S) certification, Information Support Plan (ISP), and Data and Service Exposure Verification and Registration. Update existing programs and register new programs in the Army Portfolio Management Solution/Army Information Technology Registry (APMS/AITR).</p> <p>FY 2017 Plans: Continue to support programs in the Interoperability and Supportability (I&S) certification, Information Support Plan (ISP), and Data and Service Exposure Verification and Registration. Update existing programs and register new programs in the Army Portfolio Management Solution/Army Information Technology Registry (APMS/AITR).</p>		0.266	0.257	0.254
<p>Title: 7) SSA Integrated Architecture</p> <p>FY 2015 Accomplishments: Provided and updated program of record integrated architectures and provide Net-Centric Policy implementation assistance. Continue to support CCSI updates. Continued to provide CCSI reference implementation. Supported the enterprise tools and common capabilities to ensure relevance across CBRN programs.</p> <p>FY 2016 Plans:</p>		0.247	0.251	0.265

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
<p>Continue to provide and update program of record integrated architectures and provide Net-Centric Policy implementation assistance. Continue to support CCSI updates. Continue to provide CCSI reference implementation. Support the enterprise tools and common capabilities to ensure relevance across CBRN programs.</p> <p>FY 2017 Plans: Continue to provide and update program of record integrated architectures and provide Net-Centric Policy implementation assistance. Continue to support CCSI updates. Continue to provide CCSI reference implementation. Support the enterprise tools and common capabilities to ensure relevance across CBRN programs.</p>				
<p>Title: 8) SSA Chemical, Biological, Radiological, Nuclear (CBRN) Data Model</p> <p>FY 2015 Accomplishments: Achieved a mandated net-centric environment by providing enabling tools which include the CBRN Data Model and Data Dictionary, which define Common CBRN semantics and syntax and the CBRN Extensible Markup Language (XML) schemas that define reusable XML types for information exchange throughout the enterprise.</p> <p>FY 2016 Plans: Achieve a mandated net-centric environment by providing enabling tools which include the CBRN Data Model and Data Dictionary, which define Common CBRN semantics and syntax and the CBRN Extensible Markup Language (XML) schemas that define reusable XML types for information exchange throughout the enterprise.</p> <p>FY 2017 Plans: Achieve a mandated net-centric environment by providing enabling tools which include the CBRN Data Model and Data Dictionary, which define Common CBRN semantics and syntax and the CBRN Extensible Markup Language (XML) schemas that define reusable XML types for information exchange throughout the enterprise.</p>		0.253	0.251	0.247
<p>Title: 9) SSA Cybersecurity/Information Assurance (CS/IA)</p> <p>FY 2015 Accomplishments: Maintained proper Cybersecurity/Information Assurance (CS/IA) accreditation of any system within the CBDP portfolio throughout its life-cycle. This included periodic re-accreditation of JPEO CBDP systems.</p> <p>FY 2016 Plans: Continue to maintain proper Information Assurance accreditation of any system within the CBDP portfolio throughout its life-cycle. This includes periodic re-accreditation of JPEO CBDP systems.</p> <p>FY 2017 Plans:</p>		0.434	0.424	0.440

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
Continue to maintain proper Cybersecurity/Information Assurance (CS/IA) accreditation of any system within the CBDP portfolio throughout its life-cycle. This includes periodic re-accreditation of JPEO CBDP systems.			
Title: 10) SBIR/STTR	-	0.147	-
FY 2016 Plans: SBIR/STTR - FY16 - Small Business Innovative Research.			
Accomplishments/Planned Programs Subtotals	4.703	7.703	10.357

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

N/A

Remarks

D. Acquisition Strategy

JOINT EFFECTS MODEL (JEM)

JEM Increment 2 acquisition will utilize the JROC's "IT Box" construct for software development. The intent is to provide the next generation of capability with current and future technologies, as stated in the IS ICD, in less time and fielding products to the service more frequently than an incremental delivery approach.

As part of this strategy, JEM program office developed and issued a competitive prototyping contract in April 2013 where two offerers were given the same Technical Data Package (TDP), performance Work Statement (PWS), and software requirements and were tasked to deliver a JEM prototype that implements the CCMI architecture. This competitive prototyping strategy was successful and a single JEM integrator, General Dynamics Information Technology (GDIT), was selected as the prime development contract in December 2013.

The current contractor for JEM 2.0 will provide all capabilities defined in the Requirement Definition Package 1 (RDP-1) document. The JRO will release RDPs-2, 3, and 4 over the next three years prior to contract completion. It is anticipated when the contract is re-competed in FY17 that there will be four of five capability drops not yet developed under RDP-2 and two of five under RDP-3. The follow-on contract in FY17 will include scope for developing the remaining capabilities under the JEM 2.0 contract. The JEM follow-on contract will utilize full and open competition and will be referred to as the JEM development, modernization and sustainment contract.

The JEM IS ICD describes the notional implementation plan for fielding of future JEM capabilities among five separate JEM Requirement Definition Packages (RDPs). RDP-1 contains the baseline capabilities for software and was approved in June of 2014. Since last report, the numbering scheme for RDPs was rearranged to account for the sequence of approval for each RDP. RDP-2 now defines requirements to integrate baseline capabilities into a version that can be fielded on service C2 systems will be released in RDP-2. RDP-2 will be released following RDP-1 to rapidly allow baseline capabilities to be incorporated into C2 systems. RDP-3 is a notional package that allows the Science and Technology community a venue to use the JEM program to develop a version of the product for S&T and analytical

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use. Capabilities that are only required for the Science and Technology and analytical communities and not for operational users would be implemented in RDP-3. Capabilities in RDP-3 would not be required to go to Operational Test, as they would not be fielded to operational users. RDP-4 will be released after the completion of RDP-1. This RDP will incorporate emerging capabilities that have reached a sufficient maturity for incorporation into the operationally fielded JEM system, such as ability to model new agents. RDP-5 was added as a mechanism to define requirements for JEM 2.0 through the remainder of its life cycle.

- RDP 1 - Baseline Capabilities: There are 5 planned Capability Drops (CD) within RDP 1.
- RDP 2 - C2 Integration: There are 8 planned Capability Drops (CD) within RDP 2 tied to all the various Strategic and Service C2 Systems
- RDP 3 - Analytical Support: There are 2 planned Capability Drops (CD) within RDP 3.
- RDP 4 - Emerging Capabilities: There are 5 planned Capability Drops (CD) within RDP 4.
- RDP 5 - Modernization and Sustainment: There are 2 Capability Drops (CD) planned per year through the life of the program.

An over-arching MS B and Build Decision for RDP-1 were approved by the MDA in September 2014. Each subsequent RDP will have an associated Build Decision. Each CD will have an associated fielding decision.

JOINT WARNING & REPORTING NETWORK (JWARN)

JWARN Increment 2 utilizes the JROC's "IT Box" construct for software requirements management and development. The intent is to provide the next generation of capability with current and future technologies, as stated in the IS ICD, in less time and away from an incremental delivery approach. This effort is being executed under a Cost-Plus-Award Term Incentive structure to gain maximum benefit to the Government in maintaining the fielded baseline and future software capability development and was awarded under a full and open competition Request for Proposal (RFP). The JWARN Program will procure a Sensor Connectivity Capability (SCC) (hardware materiel solution) in order to facilitate the transfer of CBRN sensor information from legacy CBRN sensors to DoD networks. This solution will be external to the CBRN Sensors and Service-identified network transmission device(s).

SOFTWARE SUPPORT ACTIVITY (SSA)

The SSA provides enterprise-wide services and coordination across all CBDP programs that contain data or software, or are capable of linking to the Global Information Grid (GIG). The SSA facilitates interoperability, integration, and supportability of existing and developing IT and National Security Systems (NSS). This will be followed by coordination to facilitate the concepts of interoperability, integration and supportability of enterprise-wide services. Next follows work with user communities to develop and demonstrate enterprise-wide common architectures, products and services. The SSA will support the application of the enterprise-wide architectures, products and services into the programs, with verification of compliance with the defined products and services.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) IS7 / INFORMATION SYSTEMS (OP SYS DEV)
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JEM - SW S - Increment 1 - Modernization	C/CPAF	Northrop Grumman Corp. : San Diego, CA	5.597	1.375	Mar 2015	2.845	Mar 2016	1.953	Mar 2017	-		1.953	Continuing	Continuing	0.000
JEM - SW S - Increment 2 - Modernization	C/CPAF	General Dynamics Information Technologies : Fairfax, VA	0.000	0.000		0.000		2.828	Apr 2017	-		2.828	Continuing	Continuing	0.000
JWARN - SW S - Increment 1 - Modernization	C/CPAF	Northrop Grumman Corp. : Winter Park, FL	8.178	1.674	Mar 2015	2.408	Mar 2016	0.705	Mar 2017	-		0.705	Continuing	Continuing	0.000
JWARN - SW S - Increment 2 - Modernization	C/CPAF	Northrop Grumman Corp. : Winter Park, FL	0.000	0.000		0.000		2.656	Mar 2017	-		2.656	Continuing	Continuing	0.000
SSA - SW S - Development Services	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	1.819	0.438	Dec 2014	0.460	Nov 2015	0.463	Dec 2016	-		0.463	Continuing	Continuing	0.000
Subtotal			15.594	3.487		5.713		8.605		-		8.605	-	-	0.000

Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JWARN - ES S - Increment 1 - Modernization	MIPR	Various : TBD	0.000	0.000		0.424	Nov 2015	0.000		-		0.000	Continuing	Continuing	0.000
SSA - TD/D C - Information Assurance Activities	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	2.310	0.293	Dec 2014	0.285	Nov 2015	0.279	Dec 2016	-		0.279	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		0.147	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
Subtotal			2.310	0.293		0.856		0.279		-		0.279	-	-	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) IS7 / INFORMATION SYSTEMS (OP SYS DEV)
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Test and Evaluation (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JWARN - OTE S - Increment 1 - FOT&E	MIPR	Various : TBD	3.287	0.227	Nov 2014	0.501	Nov 2015	0.000		-		0.000	Continuing	Continuing	0.000
JWARN - OTE S - Increment 2	MIPR	Various : TBD	0.000	0.000		0.000		0.403	Nov 2016	-		0.403	Continuing	Continuing	0.000
SSA - OTHT S - Integration Verification and Valuation (IV&V)	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	1.949	0.469	Dec 2014	0.438	Nov 2015	0.464	Dec 2016	-		0.464	Continuing	Continuing	0.000
Subtotal			5.236	0.696		0.939		0.867		-		0.867	-	-	0.000

Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JWARN - PM/MS S - Program management	MIPR	Various : TBD	0.882	0.227	Mar 2015	0.195	Mar 2016	0.606	Mar 2017	-		0.606	Continuing	Continuing	0.000
Subtotal			0.882	0.227		0.195		0.606		-		0.606	-	-	0.000

Project Cost Totals	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
	24.022	4.703	7.703	10.357	-	10.357	-	-	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) IS7 / INFORMATION SYSTEMS (OP SYS DEV)
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	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JWARN - Baseline Critical Design Review (Software)				■																								
JWARN - RDP 2 Approval & Build Decision				■																								
JWARN - TEMP (Software)				■																								
JWARN - Govt DT / OT / UFEs / OAs / FOTs				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
JWARN - RDP 3 Approval & Build Decision							■																					
JWARN - RDP 1 Fielding Decision & IOC Standalone Web							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
JWARN - RDP 2 Fielding Decision & IOC												■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
JWARN - RDP 3 Fielding Decision & IOC																												
JWARN - Full Operational Capability (C2 Host System Dependent)																												
JWARN - Modernization and Update																												
SSA - Provide Information Assurance Site Compliance Testing																												
SSA - Provide Information Assurance Certification/Acceptance products/services, including compliance testing																												
SSA - Provide Modeling, Simulation, VV&A, Integration/Test support and interoperability demonstrations.																												
SSA - Sustain CCSI, including investigation, as an industry standard																												
SSA - Sustain Common Components products, process and services																												
SSA - Provide CBRN Interface Standards, including reference implementations, e.g. Common CBRN Sensor Interface																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) IS7 / INFORMATION SYSTEMS (OP SYS DEV)
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	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
SSA - Provide CM Services for Common User Products and Services																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) IS7 / INFORMATION SYSTEMS (OP SYS DEV)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JEM - Operational Systems Development	1	2015	4	2017
JEM - Service C2 Systems Modernization & Upgrades	1	2015	2	2017
JEM - BD 1	1	2015	1	2015
JEM - RDP 2 / Build Decision 2	4	2015	4	2015
JEM - BD 2	4	2015	4	2015
JEM - FD 1	1	2016	1	2016
JEM - RDP 3	1	2016	1	2016
JEM - IOC Standalone	1	2016	1	2016
JEM - BD 3	2	2016	2	2016
JEM - FD 2	4	2016	4	2016
JEM - RDP 4	1	2017	1	2017
JEM - FD 3	4	2017	4	2017
JEM - FD 4	4	2018	4	2018
JEM - Govt DT / OT / V&V	1	2015	4	2020
JEM - Modernization and Update	3	2016	4	2021
JWARN - Information System Initial Capability Document	1	2015	1	2015
JWARN - Baseline Preliminary Design Review (Software)	1	2015	4	2015
JWARN - RDP 1 Approval	1	2015	4	2016
JWARN - RDP 1 Approval #2	1	2015	1	2015
JWARN - MS B	3	2015	3	2015
JWARN - RDP 1 Build Decision	3	2015	3	2015
JWARN - Baseline Critical Design Review (Software)	4	2015	4	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) IS7 / INFORMATION SYSTEMS (OP SYS DEV)
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Events	Start		End	
	Quarter	Year	Quarter	Year
JWARN - RDP 2 Approval & Build Decision	4	2015	4	2015
JWARN - TEMP (Software)	4	2015	4	2015
JWARN - Govt DT / OT / UFEs / OAs / FOTs	4	2015	4	2020
JWARN - RDP 3 Approval & Build Decision	3	2016	3	2016
JWARN - RDP 1 Fielding Decision & IOC Standalone Web	3	2016	1	2017
JWARN - RDP 2 Fielding Decision & IOC	3	2017	1	2018
JWARN - RDP 3 Fielding Decision & IOC	3	2018	2	2019
JWARN - Full Operational Capability (C2 Host System Dependent)	1	2020	3	2020
JWARN - Modernization and Update	3	2016	4	2021
SSA - Provide Information Assurance Site Compliance Testing	1	2015	4	2021
SSA - Provide Information Assurance Certification/Acceptance products/services, including compliance testing	1	2015	4	2021
SSA - Provide Modeling, Simulation, VV&A, Integration/Test support and interoperability demonstrations.	1	2015	4	2021
SSA - Sustain CCSI, including investigation, as an industry standard	1	2015	4	2021
SSA - Sustain Common Components products, process and services	1	2015	4	2021
SSA - Provide CBRN Interface Standards, including reference implementations, e.g. Common CBRN Sensor Interface	1	2015	4	2021
SSA - Provide CM Services for Common User Products and Services	1	2015	4	2021

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program										Date: February 2016		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) MB7 / MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)			
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
MB7: MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)	-	13.186	11.801	7.145	-	7.145	9.575	16.516	13.931	13.338	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project provides for the upgrade and modernization of fielded Medical Biological defense equipment/systems including the Joint Biological Agent Identification and Diagnostic System (JBAIDS) and Next Generation Diagnostic Systems (NGDS) suite.

JBAIDS is a commercial off-the-shelf development/production effort started in August 2003 that focused on rapid development and fielding efforts to deliver a critical capability to identify bacterial and viral agents in environmental surveillance and clinical specimen sample types. By 2005, 16 biological warfare (BW) agent surveillance detection kits were fielded along with the first JBAIDS in vitro diagnostic (IVD) assay cleared by the U.S. Food and Drug Administration (FDA). JBAIDS currently has seven IVD kits cleared by the FDA, JBAIDS achieved full operational capability (340 systems delivered all Services) in July 2011. JBAIDS efforts in 2012-2015 focused on adding surveillance food and water pathogen detection assays as well as initiating laptop retrofit and fielding. JBAIDS efforts in FY16 will focus on completing the laptop fielding and continue to develop pre-Emergency Use Authorization (EUA) packages annually for FDA review. JBAIDS efforts in FY17 will focus on sustainment and additional pre-EUA's. This project will be used to oversee the configuration management of the system to include the conduct of annual software security information assurance (IA) updates on fielded software and monitor analyzer/laptop parts obsolescence.

The NGDS is an evolutionary acquisition family of systems to provide increments of capability over time across many echelons of the Combat Health Support System. The mission of the NGDS is to provide Chemical, Biological and Radiological (CBR) threat and infectious disease identification and U.S. Food and Drug Administration (FDA)-cleared diagnostics to inform individual patient treatment as defined in the approved NGDS Capabilities Development Document (CDD) and CBR situational awareness and disease surveillance as defined in the Common Analytical Laboratory (CALs) CDD. NGDS Increment 1 will significantly improve diagnostic capability for deployable combat health support units (Role 3) while also improving operational suitability and affordability by developing FDA cleared biological warfare agent (BWA) and infectious disease in vitro diagnostic (IVD) assays on existing commercial diagnostic device with a well established FDA regulatory history and pipeline of commercial non-BWA infectious disease diagnostic tests. The NGDS Increment 1 program has a streamlined MS A to MS C - Limited Deployment acquisition strategy. BA7 will be used to complete the development of assays initiated during the Technology Maturation and Risk Reduction (TMRR) phase and needed for JBAIDS replacement as well as fund the development of three objective assays (Burkholderia, Alpha Virus, and Orthopox).

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

	FY 2015	FY 2016	FY 2017
Title: 1) Joint Biological Agent Identification and Diagnostic System (JBAIDS)	0.400	0.192	0.200

FY 2015 Accomplishments:

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016		
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) MB7 / MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
Continued sustainment contract - CLS, refurbishments, software updates, FISMA. FY 2016 Plans: Continue sustainment contract - CLS, refurbishments, software updates, Department of Defense Information Assurance Risk Management Framework (DIARMF). FY 2017 Plans: Continue sustainment contract, software security and RMF FISMA.				
Title: 2) JBAIDS FY 2015 Accomplishments: Continued submissions of Pre-EUA packages to the FDA. FY 2016 Plans: Continue submissions of Pre-EUA packages to the FDA. FY 2017 Plans: Continue submissions of Pre-EUA packages to the FDA.		0.200	0.130	0.200
Title: 3) JBAIDS FY 2015 Accomplishments: Initiated laptop replacement and fielding efforts.		2.517	-	-
Title: 4) JBAIDS FY 2015 Accomplishments: Maintained the Defense Logistics Agency Electronic-Cataloging capability. FY 2016 Plans: Maintain the Defense Logistics Agency Electronic-Cataloging capability. FY 2017 Plans: Maintain the Defense Logistics Agency Electronic-Cataloging capability.		0.100	0.100	0.051
Title: 5) NGDS - Increment 1 FY 2015 Accomplishments: Continue development and FDA clearance of Anthrax, Ebola, Marburg, Plague, Tularemia and Q-Fever IVD assays initiated in BA4. FY 2016 Plans:		9.969	9.145	6.694

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) MB7 / MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
Continue development of Plague, Tularemia, and Q-Fever IVD assays. FY 2017 Plans: Complete development of Plague, Tularemia, and Q-Fever IVD assays.			
Title: 6) NGDS - Increment 1 FY 2016 Plans: Continue development for pan-Burkholderia IVD panel, Alpha virus and orthopox IVD panel.	-	2.000	-
Title: 7) SBIR/STTR FY 2016 Plans: SBIR/STTR - FY16 - Small Business Innovative Research.	-	0.234	-
Accomplishments/Planned Programs Subtotals	13.186	11.801	7.145

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

N/A

Remarks

D. Acquisition Strategy

JOINT BIO AGENT IDENT AND DIAG SYSTEM (JBAIDS)

JBAIDS is a commercial off-the-shelf capability to identify multiple biological agents and other pathogens of operations concern, to include environmental and FDA cleared in vitro diagnostic assays. JBAIDS also has pre-positioned Emergency Use Authorizations assays for the identification of low probability, high consequence pathogens in clinical samples that can be deployed in the event of a declared health emergency. The program plans to conduct the annual JBAIDS Federal Information Security Management Act (FISMA) software compliance certification in addition to any logistics sustainment issues associated with parts obsolescence. The JBAIDS program will begin to prepare for the Risk Management Framework processes for FY16 information assurance. Additionally, the JBAIDS program office continues to partner with the US Army Medical Institute of Infectious Diseases (USAMRIID), other DoD and US Government laboratories to develop FDA Pre-Emergency Use Authorization (EUA) packages for biological warfare agents (BWA's) that could be used as biological warfare threats to DoD military forces.

NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)

The NGDS Increment 1 program has a streamlined MS A to MS C - Limited Deployment acquisition strategy. The NGDS Increment 1 is intended to replace the legacy Joint Biological Agent Identification and Diagnostic System (JBAIDS) beginning in FY17. NGDS Increment 2 will complement NGDS Increment 1 by developing

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
0400 / 7	PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	MB7 / <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>

diagnostic capabilities for biological pathogens and toxins and address diagnostics for chemical and radiological exposures, and to provide capability to lower echelons of care.

NGDS Increment 2 will conduct technology development FY14-FY16 prior to MS B. The acquisition strategy and capability to be developed will be informed by the results of the Analysis of Alternatives to be completed 4QFY14. NGDS Increment 2 is intended to be complementary to NGDS Increment 1 to expand the breadth and depth of diagnostics to CBR threats, pre-symptomatic diagnostics, and far forward echelons of care.

The MB7 program will support development, testing, and FDA approval of additional assays after system fielding.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program **Date:** February 2016

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) MB7 / MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NGDS - Increment 1 - HW C - Assay Development	C/CPPF	BioFire Dx : Salt Lake City, UT	0.000	5.969	Jun 2015	9.862	Dec 2015	3.934	Dec 2016	-		3.934	Continuing	Continuing	0.000
Subtotal			0.000	5.969		9.862		3.934		-		3.934	-	-	0.000

Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JBAIDS - TD/D SB - Software Update & Parts Obsolescence	C/FFP	TBD : TBD	0.612	2.517	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGDS - ES S - Engineering Support	MIPR	Various : TBD	0.000	0.350	Jun 2015	0.350	Jun 2016	0.350	Jun 2017	-		0.350	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		0.234	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
Subtotal			0.612	2.867		0.584		0.350		-		0.350	-	-	0.000

Test and Evaluation (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JBAIDS - OTHT S - EUA packages	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	0.648	0.200	Mar 2015	0.130	Mar 2016	0.200	Mar 2017	-		0.200	Continuing	Continuing	0.000
NGDS - DTE S - Operational Assessment/ MOT&E	MIPR	Various : TBD	0.000	3.300	Jun 2015	0.746	Jan 2016	1.310	Jan 2017	-		1.310	Continuing	Continuing	0.000
Subtotal			0.648	3.500		0.876		1.510		-		1.510	-	-	0.000

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) MB7 / MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JBAIDS - Pre-Emergency Use Authorization Packages	1	2015	4	2020
JBAIDS - Surveillance Assays (Food & Water)	1	2015	3	2015
JBAIDS - Defense Logistics Agency Electronic-Cataloging	1	2015	4	2020
JBAIDS - Contractor Logistics Support, System-Sustainment, Analyzer Refurbishment, FISMA/DIARMF	1	2015	4	2020
JBAIDS - Laptop replacement	2	2015	2	2016
NGDS - Environmental Assay Development	1	2016	3	2016
NGDS - threshold IVD assay development Anthrax, Ebola, Marburg (Plague, Tularemia, Q-Fever)	3	2015	4	2017
NGDS - Objective IVD assay Development (Burkholderia, Alpha Virus, Orthopox)	1	2018	4	2018
NGDS - follow on Assay Development	4	2018	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program										Date: February 2016		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) TE7 / TEST & EVALUATION (OP SYS DEV)			
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
TE7: TEST & EVALUATION (OP SYS DEV)	-	5.940	4.091	2.594	-	2.594	6.605	6.318	5.416	5.733	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides revitalization of existing instrumentation and technology upgrades to equipment at West Desert Test Center (WDTC), located at Dugway Proving Ground (DPG), a Major Range and Test Facility Base (MRTFB), in support of their Chemical and Biological (CB) test mission. Included in these efforts are (1) the Life Sciences Test Facility (LSTF) at the WDTC, which is the only U.S. laboratory equipped to test for aerosolized bio-safety level-3 (BSL-3) agents, (2) Major Test Chambers (Material Test Facility (MTF) and Building 3445), (3) the CB Test Grid, and (4) the Combined Chemical Test Facility.

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

	FY 2015	FY 2016	FY 2017
<p>Title: 1) WDTC - MRTFB - Life Sciences Test Facility</p> <p>FY 2015 Accomplishments: Provided instrumentation and equipment upgrades to LSTF at the WDTC, in support of the CB Defense mission. Provided for BSL-3 biological laboratory equipment for the LSTF Annex. This equipment was required to re-establish full capability of the LSTF upon completion of the Annex.</p> <p>FY 2016 Plans: Continues to provide instrumentation and equipment to LSTF at the WDTC, in support of the CB Defense mission. Continues to provide for BSL-3 biological laboratory equipment for the LSTF Annex. Also provides for enhanced laboratory referee capability and enhancement of the biological decontamination capability.</p> <p>FY 2017 Plans: Continues to provide instrumentation and equipment to LSTF at the WDTC, in support of the CB Defense mission. Continues to provide for BSL-3 biological laboratory equipment for the LSTF Annex. Provides for enhancement of the biological decontamination capability. Also provides for enhanced laboratory referee capability and management.</p>	2.074	1.221	0.509
<p>Title: 2) WDTC - MRTFB - Major Test Chambers (MTF and Building 3445)</p> <p>FY 2015 Accomplishments: Continued to provide for modernization of existing instrumentation and equipment in the major test chambers at WDTC, in support of the CB Defense mission. These chambers consist of the Materiel Test Facility (MTF), which is a unique test chamber where real-world operations can be tested, and will contain the secondary containment modules (SCMs) for NTA testing and Building 3445 which chambers support filter and collective protection testing. Modernization in the chambers included: (a) Enhancements of an aerosol generation and sampling capability; (b) Upgrades to agent surety monitor and analytical instrumentation (c)</p>	0.756	0.521	0.160

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016		
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) TE7 / TEST & EVALUATION (OP SYS DEV)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
<p>Characterization of improved and/or articulated testing fixtures; (d) Enhancement of toxic industrial chemical (TIC) detection; and (e) Non-Traditional Agent (NTA) test and detection capability</p> <p>FY 2016 Plans: Provides for modernization of existing instrumentation and equipment in the major test chambers at WDTC, in support of the CB Defense mission. These chambers consist of the following: (1) the MTF, which is a unique test chamber where real-world decontamination operations can be tested; (2) Building 4165, which houses updated surety test facilities and laboratories used for the testing of protective material, decontamination technologies, and detection systems with chemical agents and simulants; and (3) Building 3445 chambers support filter and collective protection testing. Modernization in the chambers includes: (a) Continue enhancements of an aerosol generation and sampling capability; (b) Continue development of the agent fate aerosol capability; (c) Continue upgrades to agent surety monitor and analytical instrumentation; (d) Continuous enhancement of TIC detection; and (e) NTA test and detection capability.</p> <p>FY 2017 Plans: Modernization in the chambers includes: (a) Continue enhancements of an aerosol generation and sampling capability; (b) Additional upgrades to agent surety monitor and analytical instrumentation; (c) Continuous enhancement of TIC detection; and (d) expanded NTA test and detection capability.</p>				
<p>Title: 3) WDTC - MRTFB - CB Test Grid</p> <p>FY 2015 Accomplishments: Continued to enhance existing instrumentation and equipment at multiple test grids (Target S, Downwind, Outdoor Test Grids, etc.) at WDTC, in support of the CB Defense mission. DPG's vast area combined with its remote location allows for all sizes of CB and explosive test events, including large scale TIC release capability, and are supported by state of the art meteorological and referee capability. Continuing modernization efforts included: (1) Development of agent to simulant correlation, dissemination equipment, and monitoring systems for field simulants; (2) Required upgrades to point and standoff field referee systems; (3) Upgrade of communications and data analysis capabilities at command posts; (4) Enhanced aerosol dissemination systems; (5) Upgrade high speed cameras; and (6) Development of in-house capability to calibrate infra-red (IR) cameras to reduce cost and turnaround time. Enhancements to Test Grid provides near real time data analysis and rapid test adaptation to minimize costs and increase effectiveness of testing.</p> <p>FY 2016 Plans: Enhances existing instrumentation and equipment at multiple test grids (Target S, Downwind, Tower Outdoor Test Grids, etc.) at WDTC, in support of the CB Defense mission. DPG's vast area combined with its remote location allow for all sizes of CB and explosive test events, including large scale TIC release capability, and are supported by state of the art meteorological and referee capability. Continuing modernization efforts will include: (1) Continued upgrades to point and standoff field referee systems; (2) Development of agent to simulant correlation, dissemination equipment, and monitoring systems for additional field</p>		0.653	0.621	1.051

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016		
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) TE7 / TEST & EVALUATION (OP SYS DEV)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
<p>simulants; (3) Upgrade of grid communications and data analysis capabilities; (4) Enhanced aerosol dissemination systems; (5) Upgrade high speed cameras. Enhancements to Test Grid provides near real time data analysis and rapid test adaptation to minimize costs and increase the effectiveness of field testing.</p> <p>FY 2017 Plans: Continuing modernization efforts will include: (1) Enhancement of point and standoff field referee systems; (2) Upgrade of grid communications and data analysis capabilities; (3) Additional upgrades to enhance optic data collection. Enhancements to Test Grid will provide near real time data analysis and rapid test adaptation to minimize costs and increase the effectiveness of field testing.</p>				
<p>Title: 4) WDTC - MRTFB - Combined Chemical Test Facility</p> <p>FY 2015 Accomplishments: Provided for continued revitalization and upgrade of existing instrumentation and equipment at the Combined Chemical Test Facility (CCTF) at WDTC in support of their chemical test mission. The CCTF tested the capability of detectors, decontaminants, and protective systems to defend against toxic chemical agents. Initiated engineering and design studies for replacement of chemical laboratory fume hoods and hood controllers throughout the chemical labs. Upgraded Small Item Decontamination (SID) fixture. Modernization will result in improved test fixtures which reduce risk to personnel and testing results.</p> <p>FY 2016 Plans: Provide for continued revitalization and upgrade of existing instrumentation and equipment at the CCTF at WDTC in support of their chemical test mission. The CCTF tests the capability of detectors, decontaminants, and protective systems to defend against toxic chemical agents. Modernization results in improved test fixtures which reduce risk to personnel and provide improved test capabilities.</p> <p>FY 2017 Plans: Provides for continued revitalization and upgrade of existing instrumentation and equipment at the CCTF at WDTC in support of their chemical test mission. Installation of chemical laboratory fume hoods continues in FY17. Modernization will result in improved test fixtures which reduce risk to personnel and provide improved test capabilities. Continues efforts to enhance NTA test capability in these fixtures.</p>		2.457	1.649	0.874
<p>Title: 5) SBIR/STTR</p> <p>FY 2016 Plans: SBIR/STTR - FY16 - Small Business Innovative Research.</p>		-	0.079	-
Accomplishments/Planned Programs Subtotals		5.940	4.091	2.594

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) TE7 / TEST & EVALUATION (OP SYS DEV)

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

N/A

Remarks

D. Acquisition Strategy

T&E RANGE INSTRUMENT/TECH UPGRADE (T&E UPGRADE)

Test and evaluation Range Instrumentation/Technology Upgrades is a continuing project. It provides for technical upgrades to WDTC capabilities for Chemical and Biological testing of DoD CB materiel, weapons, and weapons systems from concept through production.

E. Performance Metrics

N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) TE7 / TEST & EVALUATION (OP SYS DEV)

FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

T&E UPGRAD - Enhance Instrumentation & Equipment at Chemical Biological (CB) Test Grids, WDTC	[REDACTED]																											
T&E UPGRAD - LSTF Instrumentation & Equip Upgrades, WDTC	[REDACTED]																											
T&E UPGRAD - Modernization of Major Test Chambers, WDTC	[REDACTED]																											
T&E UPGRAD - Revitalize & Upgrade Instrumentation & Equipment at Combined Chemical Test Facility, WDTC	[REDACTED]																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) TE7 / TEST & EVALUATION (OP SYS DEV)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
T&E UPGRAD - Enhance Instrumentation & Equipment at Chemical Biological (CB) Test Grids, WDTC	1	2015	4	2021
T&E UPGRAD - LSTF Instrumentation & Equip Upgrades, WDTC	1	2015	4	2021
T&E UPGRAD - Modernization of Major Test Chambers, WDTC	1	2015	4	2021
T&E UPGRAD - Revitalize & Upgrade Instrumentation & Equipment at Combined Chemical Test Facility, WDTC	1	2015	4	2021