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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2020 Army	<b>Date:</b> March 2019
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<b>Appropriation/Budget Activity</b>					<b>R-1 Program Element (Number/Name)</b>							
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					PE 0605036A / Combating Weapons of Mass Destruction (CWMD)							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020 Base</b>	<b>FY 2020 OCO</b>	<b>FY 2020 Total</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	-	6.650	11.297	10.000	-	10.000	0.000	0.000	0.000	0.000	0.000	27.947
EQ5: Combating Weapons of Mass Destruction (CWMD)	-	6.650	11.297	10.000	-	10.000	0.000	0.000	0.000	0.000	0.000	27.947

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

The Man-Portable Radiological Detection System (MRDS) capability will provide increased radiological and nuclear (RN) detection, localization, presumptive identification and field-confirmatory identification capabilities that are networked to provide situational awareness at the tactical level. The MRDS will support Countering Weapons of Mass Destruction (CWMD) Interdiction and Elimination operations, specifically RN Sensitive Site Assessments and Sensitive Site Exploitation. The MRDS program will replace low density legacy COTS equipment while providing new equipment to much of the Chemical Biological RN (CBRN) force. The Joint Personal Dosimeter (JPD-I) is intended to replace Army's legacy dosimeters (Army's PDR-75A reader with the DT-236 watch). The JPD-I will provide a sensor to record and retrieve a Service member's radiation exposure from occupational to tactical levels. Future capability may also support Reconnaissance and Surveillance across the full range of CWMD operations. This capability supports Radiological and Nuclear Interdiction (RNI) and Weapons of Mass Destruction - Elimination (WMD-E) operations to: systematically locate, secure, characterize, and disable WMD programs and related capabilities.

<b><u>B. Program Change Summary (\$ in Millions)</u></b>	<b><u>FY 2018</u></b>	<b><u>FY 2019</u></b>	<b><u>FY 2020 Base</u></b>	<b><u>FY 2020 OCO</u></b>	<b><u>FY 2020 Total</u></b>
Previous President's Budget	6.927	11.311	8.919	-	8.919
Current President's Budget	6.650	11.297	10.000	-	10.000
Total Adjustments	-0.277	-0.014	1.081	-	1.081
• Congressional General Reductions	-0.006	-0.014			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.271	-			
• Adjustments to Budget Years	-	-	1.081	-	1.081

**Change Summary Explanation**

FY 2020 increase in the amount of \$1.081M is attributable to accelerating the program to reach production 12 months earlier.

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0605036A / Combating Weapons of Mass Destruction (CWMD)				Project (Number/Name) EQ5 / Combating Weapons of Mass Destruction (CWMD)			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
EQ5: Combating Weapons of Mass Destruction (CWMD)	-	6.650	11.297	10.000	-	10.000	0.000	0.000	0.000	0.000	0.000	27.947
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Program transitioned to the Production and Deployment stage in FY19.

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

The Man-Portable Radiological Detection System (MRDS) capability will provide increased radiological and nuclear (RN) detection, localization, presumptive identification and field-confirmatory identification capabilities that are networked to provide situational awareness at the tactical level. The MRDS will support Countering Weapons of Mass Destruction (CWMD) Interdiction and Elimination operations, specifically RN Sensitive Site Assessments and Sensitive Site Exploitation. The MRDS program will replace low density legacy COTS equipment while providing new equipment to much of the Chemical Biological RN (CBRN) force. The Joint Personal Dosimeter (JPD-I) is intended to replace Army's legacy dosimeters (Army's PDR-75A reader with the DT-236 watch). The JPD-I will provide a sensor to record and retrieve a Service member's radiation exposure from occupational to tactical levels. This capability supports Radiological and Nuclear Interdiction (RNI) and Weapons of Mass Destruction - Elimination (WMD-E) operations to: systematically locate, secure, characterize, and disable WMD programs and related capabilities.

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

	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
<b>Title:</b> Program Management - MRDS	2.198	2.202	2.700
<b>Description:</b> Provide Program Management			
<b>FY 2019 Plans:</b> Continue Government program management and Integrated Product Team support.			
<b>FY 2020 Plans:</b> Continue Government program management and Integrated Product Team support.			
<b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> Projecting wage increase for cost of living and within-grade promotions			
<b>Title:</b> Test & Evaluation Planning - MRDS	0.278	0.398	0.419
<b>Description:</b> Provides test & evaluation support (ATEC/OTC).			
<b>FY 2019 Plans:</b>			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020
Conduct test and review/approve detail test plans				
FY 2020 Plans: Prepare Initial Operational Test & Evaluation (IOT&E) planning and review/approve detail test plans.				
FY 2019 to FY 2020 Increase/Decrease Statement: Increase due to more support from United States Army Operational Test Command for the IOT&E.				
Title: System Engineering - MRDS Description: Provide system engineering support to the MRDS program.		0.437	0.455	0.657
FY 2019 Plans: Provide system engineering support to the MRDS program.				
FY 2020 Plans: Provide system engineering support to the MRDS program				
FY 2019 to FY 2020 Increase/Decrease Statement: Manpower increases due to simultaneous field and test system in FY20 while preparing for FRP decision.				
Title: Cybersecurity/Integration - MRDS Description: Provides cybersecurity thru integration of COTS.		0.540	0.563	1.813
FY 2019 Plans: Continue work on the Situational Awareness Tool and Networking capability through validation testing				
FY 2020 Plans: Conduct updates to the software to address findings in validation test and conduct re-test as needed.				
FY 2019 to FY 2020 Increase/Decrease Statement: Software labor cost increases and need to conduct verification testing. Key Performance Parameter requirement of MRDS				
Title: Acquisition Logistics - MRDS Description: Provides Acquisition Logistics support to the MRDS program.		0.374	0.390	0.500
FY 2019 Plans: Continue work on the level of repair analysis, provisioning, Army standard training material and Army standard technical manuals.				
FY 2020 Plans:				

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020
Finalize work on Army training and technical manuals. Use final products in testing and update material. Complete Log Maintenance Demo (LMD).				
FY 2019 to FY 2020 Increase/Decrease Statement: LMD cost incurred with cost of updates				
Title: Analytical Support - MRDS Description: Provide analytical and technical support to the MRDS program.  FY 2019 Plans: Provide support to the test by the COTS vendor.  FY 2020 Plans: Provide IOT&E analytical support to the test by multiple vendors  FY 2019 to FY 2020 Increase/Decrease Statement: IOT&E incurs cost by multiple organizations		-	0.247	0.536
Title: Procure LRIP Prototypes -MRDS Description: Purchases the systems  FY 2019 Plans: Procure 12 COTS Systems (2 Types) to support operational testing and logistics evaluation.  FY 2019 to FY 2020 Increase/Decrease Statement: The program will not require prototypes in 2020 since they are bought in 2019.		2.573	2.233	-
Title: Test Execution - MRDS Description: Provides testing of the systems.  FY 2019 Plans: Continue radiological performance and environmental testing with LRIP prototypes.  FY 2020 Plans: Conduct Initial Operational Test & Evaluation (IOT&E) of the system  FY 2019 to FY 2020 Increase/Decrease Statement:		0.250	3.395	3.375

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<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605036A / <i>Combating Weapons of Mass Destruction (CWMD)</i>	<b>Project (Number/Name)</b> EQ5 / <i>Combating Weapons of Mass Destruction (CWMD)</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2018</b>	<b>FY 2019</b>
IOT&E is a single location event unlike testing in FY 2019 that were at multiple sites			<b>FY 2020</b>
<b>Title:</b> Program Management JPD - I		-	0.360
<b>FY 2019 Plans:</b> Provide Program Management - JPD-I			-
<b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> Program was funded for only one year's effort			
<b>Title:</b> Test & Evaluation Planning JPD- I		-	0.640
<b>FY 2019 Plans:</b> Conduct Final Operational Test and Evaluation - JPD-I			-
<b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> Program was funded for only one year's effort			
<b>Title:</b> FY 2019 SBIR / STTR Transfer		-	0.414
<b>Description:</b> FY 2019 SBIR / STTR Transfer			-
<b>FY 2019 Plans:</b> FY 2019 SBIR / STTR Transfer			
<b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> FY19 SBIR/STTR Transfer realized in the year of execution			
<b>Accomplishments/Planned Programs Subtotals</b>		6.650	11.297
<b>10.000</b>			
<b>C. Other Program Funding Summary (\$ in Millions)</b>			
N/A			
<b>Remarks</b>			
<b>D. Acquisition Strategy</b>			
Man-portable Radiological Detection System is a single step acquisition strategy starting at Milestone C to acquire Commercial-Off-The-Shelf equipment sets consisting of a Hands-Free search device, a Hand-Held Radioisotope Identification Device, an integrated tactical radio network, and a Situational Awareness tool in order to provide specialized Army units with a net-ready, rugged, and reliable system that can detect, identify, and characterize designated radionuclides and transmit that information securely to tactical, operational, and strategic command levels in near-real time. The contract approach will be a full and open fixed price contract for LRIP systems to support post Milestone C testing, and an indefinite delivery indefinite quantity fixed price contract for the full rate production task order. The level of			

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<p>technological maturity is such that MRDS entered the acquisition cycle from MDD at MS C (FY18). The program is working toward a Full Rate Production Decision in 4th Qtr FY20 concurrent with a Full Rate Production Contract Award.</p> <p>The Joint Personal Dosimeter - Individual (JPD-I) Program Office (PO) will leverage the Navy's market research, testing and down select to meet the Army's requirements. The level of technological maturity is such that JPD-I entered the acquisition cycle from MDD at MS C (FY18). A Full Rate Production Decision in 1st Qtr FY19 was made concurrent with a Full Rate Production Contract Award.</p>		
<p><b>E. Performance Metrics</b> N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0605036A / Combating Weapons of Mass Destruction (CWMD)				Project (Number/Name) EQ5 / Combating Weapons of Mass Destruction (CWMD)					
Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Allot	Various : Various	0.298	2.198	Dec 2017	2.202	Dec 2018	2.700	Dec 2019	-		2.700	0.000	7.398	-
Acquisition Document Development	Allot	Various : Various	0.180	-		-		-		-		-	0.000	0.180	-
Subtotal			0.478	2.198		2.202		2.700		-		2.700	0.000	7.578	N/A
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Award	C/FFP	TBD : TBD	-	2.573	Sep 2018	2.733	Feb 2019	-		-		-	0.000	5.306	-
Subtotal			-	2.573		2.733		-		-		-	0.000	5.306	N/A
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Cybersecurity	MIPR	Edgewood Chemical and Biological Center : Edgewood, Maryland	0.200	0.540	Jan 2018	0.563	Jan 2019	1.813	Jan 2020	-		1.813	0.000	3.116	-
Acquisition Logistics	MIPR	Communications-Electronics Command : Aberdeen Proving Ground, MD	0.300	0.374	Jan 2018	0.390	Jan 2019	0.500	Jan 2020	-		0.500	0.000	1.564	-
Analytical Support	MIPR	Various : Various	0.470	-		0.247	Jan 2019	0.536	Jan 2020	-		0.536	0.000	1.253	-
Systems Engineering	MIPR	Edgewood Chemical and Biological Center : Aberdeen Proving Ground, MD	0.470	0.437	Jan 2018	0.455	Jan 2019	0.657	Jan 2020	-		0.657	0.000	2.019	-
FY 2019 SBIR / STTR Transfer	TBD	Headquarters, Department of the	-	-		0.414	Jan 2019	-		-		-	0.000	0.414	-

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<b>Support (\$ in Millions)</b>				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		Army : Washington, DC													
<b>Subtotal</b>			1.440	1.351		2.069		3.506		-		3.506	0.000	8.366	N/A
<b>Test and Evaluation (\$ in Millions)</b>				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
T&E	MIPR	ATEC : Aberdeen Proving Ground, MD	0.090	0.278	Dec 2017	0.398	Dec 2018	0.419	Dec 2019	-		0.419	0.000	1.185	-
Component testing	MIPR	Various : Various	-	0.250	Feb 2018	3.895	Feb 2019	3.375	Feb 2020	-		3.375	0.000	7.520	-
<b>Subtotal</b>			0.090	0.528		4.293		3.794		-		3.794	0.000	8.705	N/A
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			2.008	6.650		11.297		10.000		-		10.000	0.000	29.955	N/A
<b>Remarks</b>															



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2020 Army</b>			<b>Date:</b> March 2019		
<b>Appropriation/Budget Activity</b> 2040 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0605036A / <i>Combating Weapons of Mass Destruction (CWMD)</i>		<b>Project (Number/Name)</b> EQ5 / <i>Combating Weapons of Mass Destruction (CWMD)</i>	

Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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
Acquisition Documentation Development - MRDS																												
Milestone C - MRDS																												
LRIP Contract Award - MRDS																												
LRIP- MRDS																												
Component Testing - MRDS																												
Log Demo and IOT&E - MRDS																												
FRP, NET, and Fielding -MRDS																												
LRIP Contract Award - JPD I																												
Component Testing - JPD I																												
Milestone C and FRP - JPD I																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2020 Army			<b>Date:</b> March 2019
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605036A / <i>Combating Weapons of Mass Destruction (CWMD)</i>	<b>Project (Number/Name)</b> EQ5 / <i>Combating Weapons of Mass Destruction (CWMD)</i>	

**Schedule Details**

<b>Events</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
Acquisition Documentation Development - MRDS	1	2017	2	2018
Developmental Testing - MRDS	3	2017	4	2017
Milestone C - MRDS	2	2018	2	2018
LRIP Contract Award - MRDS	4	2018	1	2019
LRIP- MRDS	4	2018	3	2020
Component Testing - MRDS	2	2019	4	2019
Log Demo and IOT&E - MRDS	4	2019	3	2020
FRP, NET, and Fielding -MRDS	4	2020	4	2026
LRIP Contract Award - JPD I	2	2018	2	2018
Component Testing - JPD I	2	2019	2	2020
Milestone C and FRP - JPD I	1	2019	1	2019