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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2021 Army **Date:** February 2020

<b>Appropriation/Budget Activity</b>					<b>R-1 Program Element (Number/Name)</b>							
2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i>					PE 0605036A / <i>Combating Weapons of Mass Destruction (CWMD)</i>							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	-	10.883	10.000	0.000	-	0.000	0.000	0.000	0.000	7.993	0.000	28.876
EQ5: <i>Combating Weapons of Mass Destruction (CWMD)</i>	-	10.883	10.000	0.000	-	0.000	0.000	0.000	0.000	7.993	0.000	28.876

**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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
Previous President's Budget	11.297	10.000	0.000	-	0.000
Current President's Budget	10.883	10.000	0.000	-	0.000
Total Adjustments	-0.414	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.414	-			
• SBIR/STTR Transfer	-	-			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Army										<b>Date:</b> February 2020		
<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>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
EQ5: <i>Combating Weapons of Mass Destruction (CWMD)</i>	-	10.883	10.000	0.000	-	0.000	0.000	0.000	0.000	7.993	0.000	28.876
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 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<p><b>Title:</b> Program Management - MRDS</p> <p><b>Description:</b> Provide Program Management</p> <p><b>FY 2020 Plans:</b> Continue Government program management and Integrated Product Team support.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Developmental funding end in FY 2020</p>	2.496	2.700	-
<p><b>Title:</b> Test &amp; Evaluation Planning - MRDS</p> <p><b>Description:</b> Provides test &amp; evaluation support (ATEC/OTC).</p> <p><b>FY 2020 Plans:</b> Prepare Initial Operational Test &amp; Evaluation (IOT&amp;E) planning and review/approve detail test plans.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b></p>	0.398	0.419	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
Developmental funding end in FY 2020				
<b>Title:</b> System Engineering - MRDS <b>Description:</b> Provide system engineering support to the MRDS program.  <b>FY 2020 Plans:</b> Provide system engineering support to the MRDS program  <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Developmental funding end in FY 2020		0.451	0.657	-
<b>Title:</b> Cybersecurity/Integration - MRDS <b>Description:</b> Provides cybersecurity thru integration of COTS.  <b>FY 2020 Plans:</b> Conduct updates to the software to address findings in validation test and conduct re-test as needed.  <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Developmental funding end in FY 2020		0.563	1.813	-
<b>Title:</b> Acquisition Logistics - MRDS <b>Description:</b> Provides Acquisition Logistics support to the MRDS program.  <b>FY 2020 Plans:</b> Finalize work on Army training and technical manuals. Use final products in testing and update material. Complete Log Maintenance Demo (LMD).  <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Developmental funding end in FY 2020		0.390	0.500	-
<b>Title:</b> Analytical Support - MRDS <b>Description:</b> Provide analytical and technical support to the MRDS program.  <b>FY 2020 Plans:</b> Provide IOT&E analytical support to the test by multiple vendors  <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b>		0.243	0.536	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Army		<b>Date:</b> February 2020		
<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 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
Developmental funding end in FY 2020				
<b>Title:</b> Procure LRIP Prototypes -MRDS <b>Description:</b> Procure Production representative MRDS LRIP Test systems		2.233	-	-
<b>Title:</b> Test Execution - MRDS <b>Description:</b> Operational Test and Evaluation of the MRDS Capability. <b>FY 2020 Plans:</b> Conduct Initial Operational Test & Evaluation (IOT&E) of the system <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Developmental funding end in FY 2020		3.109	3.375	-
<b>Title:</b> Program Management JPD - I		0.360	-	-
<b>Title:</b> Test & Evaluation Planning JPD- I <b>Description:</b> Conduct Operational Testing		0.640	-	-
<b>Accomplishments/Planned Programs Subtotals</b>		10.883	10.000	-
<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 technological maturity is such that MRDS entered the acquisition cycle from MDD at MS C (FY 2018). The program is working toward a Full Rate Production Decision in 4th Qtr of FY 2020 concurrent with a Full Rate Production Contract Award.				

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Army		<b>Date:</b> February 2020
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<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 (FY 2018). A Full Rate Production Decision in 1st Qtr of FY 2019 was made concurrent with a Full Rate Production Contract Award.</p>		

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army** **Date:** February 2020

<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>
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<b>Management Services (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Program Management	Allot	Various : Various	2.496	2.570	Dec 2018	2.700	Dec 2019	-		-		-	0.000	7.766	-
Acquisition Document Development	Allot	Various : Various	0.180	-		-		-		-		-	0.000	0.180	-
<b>Subtotal</b>			2.676	2.570		2.700		-		-		-	0.000	7.946	N/A

<b>Product Development (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Contract Award	C/FFP	TBD : TBD	2.573	2.233	Feb 2019	-		-		-		-	0.000	4.806	-
<b>Subtotal</b>			2.573	2.233		-		-		-		-	0.000	4.806	N/A

<b>Support (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Cybersecurity	MIPR	Edgewood Chemical and Biological Center : Edgewood, Maryland	0.740	0.563	Jan 2019	1.813	Jan 2020	-		-		-	0.000	3.116	-
Acquisition Logistics	MIPR	Communications-Electronics Command : Aberdeen Proving Ground, MD	0.674	0.390	Jan 2019	0.500	Jan 2020	-		-		-	0.000	1.564	-
Analytical Support	MIPR	Various : Various	0.470	0.243	Jan 2019	0.536	Jan 2020	-		-		-	0.000	1.249	-
Systems Engineering	MIPR	Edgewood Chemical and Biological Center : Aberdeen Proving Ground, MD	0.907	0.451	Jan 2019	0.657	Jan 2020	-		-		-	0.000	2.015	-
<b>Subtotal</b>			2.791	1.647		3.506		-		-		-	0.000	7.944	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army** **Date:** February 2020

<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>
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Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
T&E	MIPR	A TEC : Aberdeen Proving Ground, MD	0.368	1.038	Dec 2018	0.419	Dec 2019	-		-		-	0.000	1.825	-
Component testing	MIPR	Various : Various	0.250	3.395	Feb 2019	3.375	Feb 2020	-		-		-	0.000	7.020	-
<b>Subtotal</b>			0.618	4.433		3.794		-		-		-	0.000	8.845	N/A
<b>Project Cost Totals</b>			8.658	10.883		10.000		-		-		-	0.000	29.541	N/A

**Remarks**  
 FY 2019 Budget control is in correct. JPEO-CBRND received a total of \$10.883M in PE 6605036A. \$6M for the JPDI & MRDS ATP requirement. \$4.883M for the base program MRDS.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2021 Army</b>		<b>Date:</b> February 2020
<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 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	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
LRIP Contract Award - MRDS	█																											
LRIP- MRDS	█	█	█	█	█	█	█	█																				
Component Testing - MRDS		█	█	█																								
Log Demo and IOT&E - MRDS				█	█	█	█	█																				
FRP, NET, and Fielding -MRDS									█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
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 2021 Army		<b>Date:</b> February 2020
<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

Events	Start		End	
	Quarter	Year	Quarter	Year
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