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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army **Date:** April 2022

Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					PE 0605038A / Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) Sensor Suite							
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	4.669	7.618	-	-	-	0.000	0.000	0.000	0.000	0.000	12.287
EQ7: NBC Reconnaissance Vehicle (NBCRV) Sensor Suite	-	4.669	7.618	-	-	-	-	-	-	-	0.000	12.287

A. Mission Description and Budget Item Justification

The Nuclear, Biological, and Chemical Reconnaissance Vehicles (NBCRV) Sensor Suite Upgrade (SSU) provides maneuver formations the ability to conduct mounted reconnaissance and surveillance missions of CBRN named areas of interest (NAIs). The NBCRV SSU will answer the commander's priority intelligence requirements (PIR), and facilitate proactive risk-based decisions to ensure freedom of action and survivability. A modern and capable NBCRV SSU is a critical component for Joint Force success when operating in the complex CBRN environment. Operating with combat vehicles fighting against increasingly capable and determined enemies requires like capability with regard to protection, mobility, and lethality. The NBCRV SSU will accomplish this by integrating the capability for command and control of unmanned systems with CBRN payload. The NBCRV SSU will provide a CBRN detection, tipping and queueing to accomplish desired standoff distances to keep the warfighter out of harm's way and reduce sustainment costs over the current system. A Chemical Surface Detector (CSD) will be developed to replace the Dual Wheel Sampling System to increase maneuver speed when conducting NBC missions and increase reliability.

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	4.669	7.618	0.000	-	0.000
Current President's Budget	4.669	7.618	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Army										Date: April 2022		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0605038A / Nuclear Biological Chemical / Reconnaissance Vehicle (NBCRV) Sensor Suite				Project (Number/Name) EQ7 / NBC Reconnaissance Vehicle (NBCRV) Sensor Suite			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
EQ7: NBC Reconnaissance Vehicle (NBCRV) Sensor Suite	-	4.669	7.618	-	-	-	-	-	-	-	0.000	12.287
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Nuclear, Biological, and Chemical Reconnaissance Vehicles (NBCRV) Sensor Suite Upgrade (SSU) provides maneuver formations the ability to conduct mounted reconnaissance and surveillance missions of CBRN named areas of interest (NAIs). The NBCRV SSU will answer the commander's priority intelligence requirements (PIR), and facilitate proactive risk-based decisions to ensure freedom of action and survivability. A modern and capable NBCRV SSU is a critical component for Joint Force success when operating in the complex CBRN environment. Operating with combat vehicles fighting against increasingly capable and determined enemies requires like capability with regard to protection, mobility, and lethality. The NBCRV SSU will accomplish this by integrating the capability for command and control of unmanned systems with CBRN payload. The NBCRV SSU will provide a CBRN detection, tipping and queueing to accomplish desired standoff distances to keep the warfighter out of harm's way and reduce sustainment costs over the current system. In FY 2020, NBCRV SSU program developed a prototype of integrated sensors for demonstration in Joint Warfighter Assessment 2020. In FY 2021, NBCRV SSU program developed hardened and integrated sensors for development test in FY 2022. In FY 2022, the program is conducting component and system level testing.

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

	FY 2021	FY 2022	FY 2023
<p>Title: Product Development and Unmanned Platform Integration</p> <p>Description: Development of CSD, radiological detectors, standoff chemical vapor detector, unmanned platform identification and integration, Government strategic planning, system engineering, logistics, training, and Integrated Product Team (IPT) support.</p> <p>FY 2022 Plans: Complete CBRN sensor and integrated sensor suite prototype development, maturation, and procurement. Continue government strategic planning, systems engineering, logistics, training, test and evaluation, technical support, integration, and the bulk of component and system level developmental testing. Will conduct Limited User Test.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Program transitions to Procurement funding in FY22 and FY23</p>	4.341	6.780	-
<p>Title: Program Management and Oversight</p> <p>Description: Program Management and Oversight</p> <p>FY 2022 Plans:</p>	0.328	0.560	-

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605038A / <i>Nuclear Biological Chemical / Reconnaissance Vehicle (NBCRV) Sensor Suite</i>	Project (Number/Name) EQ7 / <i>NBC Reconnaissance Vehicle (NBCRV) Sensor Suite</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
Complete Government program management, system engineering, and Integrated Product Team (IPT) support.			
<i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> Program transitions to Procurement funding in FY22 and FY23.			
<i>Title:</i> FY22 SBIR/STTR Transfer	-	0.278	-
<i>FY 2022 Plans:</i> Funding transferred in accordance with Title 15 USC ?638			
<i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> Funding transferred in accordance with Title 15 USC ?638			
Accomplishments/Planned Programs Subtotals	4.669	7.618	-

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

N/A

Remarks

D. Acquisition Strategy

Nuclear Biological Chemical Reconnaissance Vehicle Sensor Suite Upgrade (NBCRV SSU) is an upgrade for the Stryker NBCRV. The acquisition strategy for the Stryker NBCRV SSU is to integrate mature sensors into the Stryker NBCRV in FY 2019 for demonstration in Joint Warfighting Assessment (JWA) 19 and system level testing. Following the testing and demonstration, the hardware and software will be fixed and updated for demonstration in JWA 20 and test starting in FY 2021. An In Progress Review will be held starting in FY 2022 to execute a Modification Work Order for fielding in FY 2023. This schedule was accelerated from the previous schedule based on the maturity of the sensor and guidance from the Chief of Staff of the Army. The NBCRV SSU program will conduct system level testing in FY 2021 through early FY 2023 using Defense Wide funding to inform the Modification Work Order In Process Review to ensure system performance.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army												Date: April 2022			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 5				PE 0605038A / Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) Sensor Suite				EQ7 / NBC Reconnaissance Vehicle (NBCRV) Sensor Suite							
Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Project Management Personnel	MIPR	JPEO-CBRND : Edgewood, MD	2.786	0.328	Nov 2020	0.560	Nov 2021	-		-		-	Continuing	Continuing	Continuing
FY22 SBIR/STTR Transfer	TBD	Various : Various	-	-		0.278	Apr 2022	-		-		-	0.000	0.278	-
Subtotal			2.786	0.328		0.838		-		-		-	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Product Development and Sensor Integration	C/Various	Various : Various	17.099	4.341	Nov 2020	4.952	Nov 2021	-		-		-	Continuing	Continuing	Continuing
Product Development (CSD) AGENTASE, LLC (TMRR)	Option/CPFF	AGENTASE, LLC : Elkridge, MD	2.945	-		-		-		-		-	0.000	2.945	-
Product Development (CSD) L3 (TMRR)	Option/CPFF	L-3 Communications Sonoma EO, Inc : Santa Rosa,, CA	2.627	-		-		-		-		-	0.000	2.627	-
Product Development (CSD) UTC (TMRR)	Option/CPFF	Hamilton Sundstand Space Systems : Pomona, CA	2.087	-		-		-		-		-	0.000	2.087	-
Product Development (CSD) Rad/Nuc (M2PRDS)	C/CPFF	Advanced Technologies International : Summerville, SC	1.942	-		-		-		-		-	0.000	1.942	-
Product Development (ECBC Matrix)	MIPR	CCDC CBC : Aberdeen Proving Ground	2.259	-		-		-		-		-	0.000	2.259	-
Subtotal			28.959	4.341		4.952		-		-		-	Continuing	Continuing	N/A

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2040 / 5				PE 0605038A / Nuclear Biological Chemical / Reconnaissance Vehicle (NBCRV) Sensor Suite				EQ7 / NBC Reconnaissance Vehicle (NBCRV) Sensor Suite							
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Integrated Logistics Support	MIPR	ECBC : Edgewood, MD	1.301	-		-		-		-		-	Continuing	Continuing	Continuing
Requirements Development Support	Various	Various : Various	0.629	-		-		-		-		-	0.000	0.629	-
Subtotal			1.930	-		-		-		-		-	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Test and Evaluation	MIPR	ECBC : Edgewood, MD	1.483	-		1.828	Nov 2021	-		-		-	Continuing	Continuing	Continuing
Subtotal			1.483	-		1.828		-		-		-	Continuing	Continuing	N/A
Project Cost Totals			35.158	4.669		7.618		-		-		-	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605038A / Nuclear Biological Chemical / Reconnaissance Vehicle (NBCRV) Sensor Suite	Project (Number/Name) EQ7 / NBC Reconnaissance Vehicle (NBCRV) Sensor Suite

Event Name	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
Design and Fabrication Phase 2 (Continued from PE0603627 E	██████████				██████████																							
Component Test					██████████																							
System Level Test 1					██████████																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605038A / <i>Nuclear Biological Chemical / Reconnaissance Vehicle (NBCRV) Sensor Suite</i>	Project (Number/Name) EQ7 / <i>NBC Reconnaissance Vehicle (NBCRV) Sensor Suite</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Design and Fabrication (Continued from PE0603627 E79)	2	2017	3	2019
Joint Warfighter Assessment 2019	3	2019	3	2019
Design and Fabrication Phase 2 (Continued from PE0603627 E79)	2	2019	1	2022
Component Test	4	2021	4	2022
System Level Test 1	1	2022	4	2022
Joint Modernization Command Focused Assessment	2	2020	2	2020