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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army	Date: May 2021
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605812A / <i>Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	-	7.119	1.678	2.564	-	2.564	-	-	-	-	-	-
VU9: <i>Joint Light Tactical Vehicle</i>	-	7.119	1.678	2.564	-	2.564	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The JLTV Family of Vehicles (FoV), to include a companion trailer, is a United States Army (USA) acquisition lead, joint program with the U.S. Marine Corps (USMC). The JLTV is capable of performing multiple mission roles and designed to provide protected, sustained, networked mobility for personnel and payloads across the full range of military operations. JLTV objectives include increased protection and performance over the current fleet; and, minimizing ownership costs by maximizing commonality, fuel efficiency, reliability, and maintaining effective competition throughout the life cycle. Commonality of components, maintenance procedures, training, etc., among vehicles is expected to be inherent in FoV solutions across mission variants to minimize total ownership cost. Unique service requirements have been minimized. The JLTV Trailer (JLTV-T) is the companion trailer to the JLTV and safely carries its payload while maintaining the same mobility characteristics of the prime mover. The trailer requirement as defined in the Capability Production Document (CPD), dated 21 November 2014 was validated on 7 June 2019 by the Army and required the JLTV and JLTV-T to be fielded as a system. On November 2019, Army Futures Command validated the JLTV-T Army Procurement Objective (APO) of 18,224. The Follow-on JLTV Contract is scheduled to be awarded in Q4 FY 2022. JLTV intends to competitively award the follow-on contract as a single award five year requirements contract with five one year options.

This program element supports modernization of the JLTV FoV by investigating technology insertions including, but not limited to: condition based maintenance, vetronics, Victory Architecture, autonomous operations and other emerging technologies. This program element also supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts.

The FY 2022 budget supports the development and continuation of engineering efforts including: Initiation of design, integration and testing for the Next Generation Powertrain which will consider parallel hybrid, series hybrid, and a full electric option; Cyber Scans to evaluate emerging threats and technologies; Integrated Tactical Network (ITN) rapid prototyping to support emerging characterization events; development and integration of Anti-Idle technology; and JLTV Utility Multipurpose Protected Shelter (JUMPS) to support emerging requirements such as Protected Ambulance, Protected Troop Transport, and Protected Command and Control.

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B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	7.232	1.742	1.799	-	1.799
Current President's Budget	7.119	1.678	2.564	-	2.564
Total Adjustments	-0.113	-0.064	0.765	-	0.765
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.113	-0.064			
• Adjustments to Budget Years	-	-	0.765	-	0.765

Change Summary Explanation

FY22 JLTV RDT&E increased by \$0.765M in support of Next Generation Powertrain effort

UNCLASSIFIED

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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
VU9: <i>Joint Light Tactical Vehicle</i>	-	7.119	1.678	2.564	-	2.564	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The JLTV Family of Vehicles (FoV), to include a companion trailer, is a United States Army (USA) acquisition lead, joint program with the U.S. Marine Corps (USMC). The JLTV is capable of performing multiple mission roles and designed to provide protected, sustained, networked mobility for personnel and payloads across the full range of military operations. JLTV objectives include increased protection and performance over the current fleet; and, minimizing ownership costs by maximizing commonality, fuel efficiency, reliability, and maintaining effective competition throughout the life cycle. Commonality of components, maintenance procedures, training, etc., among vehicles is expected to be inherent in FoV solutions across mission variants to minimize total ownership cost. Unique service requirements have been minimized. The JLTV Trailer (JLTV-T) is the companion trailer to the JLTV and safely carries its payload while maintaining the same mobility characteristics of the prime mover. The trailer requirement as defined in the Capability Production Document (CPD), dated 21 November 2014 was validated on 7 June 2019 by the Army and required the JLTV and JLTV-T to be fielded as a system. On November 2019, Army Futures Command validated the JLTV-T Army Procurement Objective (APO) of 18,224. The Follow-on JLTV Contract is scheduled to be awarded in Q4 FY 2022. JLTV intends to competitively award the follow-on contract as a single award five year requirements contract with five one year options.

This program element supports modernization of the JLTV FoV by investigating technology insertions including, but not limited to: condition based maintenance, vetronics, Victory Architecture, autonomous operations and other emerging technologies. This program element also supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts.

The FY 2022 budget supports the development and continuation of engineering efforts including: Initiation of design, integration and testing for the Next Generation Powertrain which will consider parallel hybrid, series hybrid, and a full electric option; Cyber Scans to evaluate emerging threats and technologies; Integrated Tactical Network (ITN) rapid prototyping to support emerging characterization events; development and integration of Anti-Idle technology; and JLTV Utility Multipurpose Protected Shelter (JUMPS) to support emerging requirements such as Protected Ambulance, Protected Troop Transport, and Protected Command and Control.

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

	FY 2020	FY 2021	FY 2022
Title: Evaluation and Assessment of current and future engineering efforts	7.119	1.678	2.564
Description: Funding is provided for the support of JLTV evaluation and assessment of current and future engineering efforts.			
FY 2021 Plans:			
Development and continuation of engineering efforts including: Survivability enhancements to optimize the JLTV system architecture and drastically reduce (O&S) costs; Ongoing development of Command, Control, Communications, Computers,			

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
and Intelligence (C4I) system packaging optimization efforts such as Integrated Tactical Network (ITN) and Integrated Vision Augmentation System (IVAS); Ongoing testing to ensure cyber vulnerabilities are considered and mitigated; development and integration of Anti-Idle technology; JLTV Utility Multipurpose Protected Shelter (JUMPS) to support emerging requirements such as Protected Ambulance, Protected Troop Transport, and Protected Command and Control; Field Service Representative (FSR) support; and Close Combat Weapons Carrier (CCWC) enhancements engineering change proposal.			
FY 2022 Plans: Development and continuation of engineering efforts including: Initiation of design, integration and testing for the Next Generation Powertrain which will consider parallel hybrid, series hybrid, and a full electric option; Cyber Scans to evaluate emerging threats and technologies; Integrated Tactical Network (ITN) rapid prototyping to support emerging characterization events; development and integration of Anti-Idle technology; and JLTV Utility Multipurpose Protected Shelter (JUMPS) to support emerging requirements such as Protected Ambulance, Protected Troop Transport, and Protected Command and Control.			
FY 2021 to FY 2022 Increase/Decrease Statement: Increase in funding due to initiation of design, integration and testing for the Next Generation Powertrain.			
Accomplishments/Planned Programs Subtotals	7.119	1.678	2.564

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022 Base</u>	<u>FY 2022 OCO</u>	<u>FY 2022 Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• D15603: JOINT LIGHT TACTICAL VEHICLE	972.407	-	-	-	-	-	-	-	-	-	-
• D15610: JOINT LIGHT TACTICAL VEHICLE FAMILY OF VEHICLES	-	884.414	574.562	-	574.562	-	-	-	-	-	-
• D15615: JOINT LIGHT TACTICAL VEHICLE (JLTV)	-	812.023	496.122	-	496.122	-	-	-	-	-	-
• D15618: JOINT LIGHT TACTICAL VEHICLE TRAILER (JLTV-T)	-	72.391	78.440	-	78.440	-	-	-	-	-	-
• D00929: JOINT LIGHT TACTICAL VEHICLE (JTLV) MOD-IN-SERVICE	-	-	7.190	-	7.190	-	-	-	-	-	-
• MC - 5095: JOINT LIGHT TACTICAL VEHICLE (JLTV) - USMC	555.648	368.675	322.013	-	322.013	-	-	-	-	-	-

UNCLASSIFIED

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

<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u> <u>Base</u>	<u>FY 2022</u> <u>OCO</u>	<u>FY 2022</u> <u>Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• MC - 0605813M: JOINT LIGHT TACTICAL VEHICLE (JLTV) - USMC	2.094	2.541	2.005	-	2.005	-	-	-	-	-	-

Remarks
JLTV is a Joint Program with the United States Marine Corps (USMC)

D. Acquisition Strategy
The JLTV Family of Vehicles (FoV), to include a companion trailer, is a United States Army (USA) lead, joint program with the U.S. Marine Corps (USMC).

The JLTV Program entered the Production and Deployment Phase with the Acquisition Decision Memorandum authorization on 25 August 2015. With Milestone C approval, the Low Rate Initial Production (LRIP) fixed price contract was awarded to Oshkosh Defense LLC on 25 August 2015. This contract consisted of a three year LRIP period with options for five additional years of Full Rate Production (FRP) deliveries. JPO JLTV procured the Technical Data Package (TDP) with appropriate data rights to allow for possible future competition for production vehicles and spares. Current contract options may be exercised through 30 November 2023. The Follow-on JLTV Contract is scheduled to be awarded in Q4 FY 2022. JLTV intends to competitively award the follow-on contract as a single award five year requirements contract with five one year options.

A split procurement will occur between the existing Oshkosh contract and the new competitively awarded contract based on the approved acquisition strategy. Program achieved a successful FRP decision in May 2019. The FRP Acquisition Decision Memorandum was signed in June 2019.

The trailer requirement as defined in the Capability Production Document (CPD), dated 21 November 2014 was validated on 7 June 2019 by the Army and required the JLTV and JLTV-T to be fielded as a system. In November 2019, Army Futures Command validated the JLTV-T Army Procurement Objective (APO) of 18,224. In June 2020, the 1st JLTV Trailer Production Contract was awarded to Oshkosh for 1,410 Army JLTV-Ts.

The JLTV program will continually monitor emerging technologies and capabilities through its partnerships with U.S. Army and Marine Corps science and technology organizations as well as through industry market research and partnerships. The JLTV program will look for opportunities to implement increased capabilities throughout the systems Life Cycle.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605812A / Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)	Project (Number/Name) VU9 / Joint Light Tactical Vehicle
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Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
Joint Light Tactical Vehicles (JLTV) Contract Service Support	SS/CPFF	Booz-Allen Hamilton, : McLean, VA	10.191	-		-		-		-		-	0.000	10.191	-
JLTV Contract Service Support for Cost Analysis for JLTV CARD	SS/CPFF	Camber Corporation, : Huntsville, AL	0.591	-		-		-		-		-	0.000	0.591	-
JLTV Service Support	MIPR	US Army Combined Arms Support Commands - CASCOM, : Ft. Lee, VA	0.200	-		-		-		-		-	0.000	0.200	-
Subtotal			10.982	-		-		-		-		-	0.000	10.982	N/A

Remarks
Funding for Management Services has shifted from RDT&E to Procurement and Operations and Maintenance - Army(OMA).

Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
JLTV Live Fire Test Support	C/FFP	Oshkosh Corporation : Oshkosh, WI	19.091	-		-		-		-		-	0.000	19.091	-
Evaluation and Assessment of current and future engineering efforts	C/Various	Various : Various	7.476	7.119	Jan 2020	1.678	Jan 2021	2.564	Jan 2022	-		2.564	Continuing	Continuing	Continuing
Subtotal			26.567	7.119		1.678		2.564		-		2.564	Continuing	Continuing	N/A

Remarks
Funding has increased in FY22 due to initiation of design, integration and testing for the Next Generation Powertrain.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army **Date:** May 2021

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Support (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
Joint Light Tactical Vehicles (JLTV) Program Management Support	Various	TACOM Life Cycle Management Command (LCMC), : Harrison Township, MI	31.919	-		-		-		-		-	0.000	31.919	-
GFE Management / GFE / Integration	MIPR	Various : TBD	19.436	-		-		-		-		-	0.000	19.436	-
JLTV EMD/LRIP phase.	MIPR	Tank-Automotive Research, Development, and Engineering Center - TARDEC : Warren, MI	14.245	-		-		-		-		-	0.000	14.245	-
JLTV Prototype EMD/LRIP - Budget	MIPR	TACOM Life Cycle Management Command (LCMC), : Warren, MI	12.383	-		-		-		-		-	0.000	12.383	-
Subtotal			77.983	-		-		-		-		-	0.000	77.983	N/A

Remarks
Funding for Support Costs has shifted from RDT&E to Procurement and Operations and Maintenance - Army(OMA).

Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
Complete Engineering and Manufacturing Development (EMD) Test - Limited User Test (LUT)	MIPR	Army Evaluation Center (AEC) : Aberdeen Proving Ground, MD	41.342	-		-		-		-		-	0.000	41.342	-
Development Testing, MOT&E and Live Fire T&E - Log demo, and corrosion.	Various	TBD : Various	42.994	-		-		-		-		-	0.000	42.994	-

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army		Date: May 2021
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Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	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
Evaluation and Assessment	[Redacted]																											
Close Combat Weapons Carrier (CCWC) ECP	[Redacted]																											
Survivability ECP	[Redacted]																											
Field Service Representative (FSR) support	[Redacted]																											
Integrated Vision Augmentation System (IVAS)	[Redacted]																											
Anti-Idle	[Redacted]																											
JLTV Utility Multipurpose Protected Shelter (JUMPS)	[Redacted]																											
Cyber Scans	[Redacted]																											
Integrated Tactical Network (ITN)	[Redacted]																											
Next Generation Powertrain	[Redacted]																											
Army Initial Operating Capability (IOC)	[Redacted] ▲ 1																											
Full Materiel Release (FMR)	[Redacted] ▲ 2																											
Competitive Follow-On Contract Award	[Redacted] ▲ 3																											

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army			Date: May 2021		
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Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	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
Follow-on Contract Live Fire and Survivability Testing																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army		Date: May 2021
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Evaluation and Assessment	3	2018	4	2026
Close Combat Weapons Carrier (CCWC) ECP	4	2018	3	2022
Survivability ECP	4	2019	2	2022
Field Service Representative (FSR) support	3	2020	2	2023
Integrated Vision Augmentation System (IVAS)	1	2021	3	2022
Anti-Idle	2	2021	2	2024
JLTV Utility Multipurpose Protected Shelter (JUMPS)	2	2021	2	2023
Cyber Scans	2	2021	2	2023
Integrated Tactical Network (ITN)	4	2021	4	2022
Next Generation Powertrain	2	2022	2	2023
Army Initial Operating Capability (IOC)	3	2020	3	2020
Full Materiel Release (FMR)	1	2022	1	2022
Competitive Follow-On Contract Award	4	2022	4	2022
Follow-on Contract Live Fire and Survivability Testing	3	2024	3	2024