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

<b>Appropriation/Budget Activity</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604604A / <i>Medium Tactical Vehicles</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	3.905	0.000	8.523	-	8.523	6.448	3.455	3.472	3.472	0.000	29.275
BX8: <i>Cold Weather All-Terrain Vehicle (CATV)</i>	-	0.000	0.000	6.294	-	6.294	1.998	0.000	0.000	0.000	0.000	8.292
H07: <i>Family Of Med Tac Veh</i>	-	3.905	0.000	2.229	-	2.229	4.450	3.455	3.472	3.472	0.000	20.983

**Note**  
 Cold Weather All-Terrain Vehicle (CATV) Project BX8 is a new start effort in FY 2021.  
 Family of Medium Tactical Vehicles (MTV) Project H07 is not a new start effort.

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

This Program Element (PE) supports continued modernization of the Army's Medium Tactical Wheeled Vehicle fleets by investigating technology insertions including, but not limited to: condition based maintenance, vetronics, vehicle electrification, Victory Architecture, autonomous operations and other emerging technologies. Furthermore, the PE supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts.

The Family of Medium Tactical Vehicles (FMTV) includes Cargo, Tractor, Load Handling System (LHS), Wrecker, Expandible Van, Shop Van, and Dump variants with payloads ranging from 2 1/2-tons to 10-tons and associated companion trailers. FMTV trucks perform over 55 percent of the Army's local haul, line haul, and unit resupply missions. It operates throughout theater as multi-purpose transportation vehicles in combat, combat support, and combat service support units.

Funding from this Program Element will be used to support the continued evolution of the future FMTV fleet as well as tech insertion opportunities to keep the current FMTV fleet relevant on today's battlefield. This includes upgrades in survivability and crew protection, improved safety by leveraging advancements in commercial active safety technologies, modernizing the aging Low Velocity Air Drop (LVAD) fleet of vehicles, improved utilization through modularity, integration of advanced high efficiency powertrains and fuel saving technologies, and insertion of autonomous vehicle capabilities that will change the way transportation missions are conducted around the world.

FY 2021 Project H07 Base funds in the amount of \$2.229 million will be used to conduct Operational Testing of the FMTVA2 truck and design and development of an LVAD Technical Demonstrator.

The Cold-weather All-Terrain Vehicle (CATV) is a tracked vehicle new start effort in FY 2021 that will provide transportation for up to a 10-Soldier element, emergency medical evacuation, command and control capability, and general cargo transportation on- and off-road in an Arctic environment under a wide range of otherwise impassable terrain, to include frozen ice, and extreme cold weather conditions to support year-round training as well as to conduct Homeland Defense (HD), Homeland Security (HS), and Defense support of Civil Authorities (DSCA) mission. The CATV will employ four carrier variants: General-purpose carrier variant capable of providing transport for not less than 9 Soldiers, plus the driver within a cab/enclosure (10 Soldiers) with equipment and supplies to sustain three days of combat

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<b>Appropriation/Budget Activity</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604604A / <i>Medium Tactical Vehicles</i>
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operations. Ambulance capable of transporting medical equipment, two caregivers, and not less than two litter patients or four ambulatory patients in addition to the driver within a cab/enclosure. Command and Control (C2) providing the space weight and power to hosting standard Joint communications and common operating picture (COP) platforms. The C2 and COP equipment should be able to be used enroute or with minimal setup upon halt by six Soldiers in addition to the driver within a cab/enclosure. Cargo/flatbed capable of carrying outsized equipment and cargo. The cargo variant should allow for loading cargo with a forklift from either side (i.e. dropside or flatbed configuration) and have a cab/enclosure for two Soldiers (driver and vehicle commander).

FY 2021 CATV budget activities in the amount of \$6.294 million include a contract award under an Other Transaction Authority (OTA) to evaluate the technical, manufacturing feasibility and military utility of the Cold- weather All-Terrain Vehicle (CATV) Prototypes.

<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	3.699	2.152	3.325	-	3.325
Current President's Budget	3.905	0.000	8.523	-	8.523
Total Adjustments	0.206	-2.152	5.198	-	5.198
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.152			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.206	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	5.198	-	5.198

**Change Summary Explanation**

FY 2021 MTV budget activities include Operational Testing of FMTVA2 truck and the design and development of a LVAD Technical Demonstrator.

FY 2021 increase of \$6.294M is for Cold weather All-Terrain Vehicle (CATV), new start effort in FY 2021.

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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 0604604A / <i>Medium Tactical Vehicles</i>				<b>Project (Number/Name)</b> BX8 / <i>Cold Weather All-Terrain Vehicle (CATV)</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>
BX8: <i>Cold Weather All-Terrain Vehicle (CATV)</i>	-	0.000	0.000	6.294	-	6.294	1.998	0.000	0.000	0.000	0.000	8.292
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

This is a new start in FY2021.

New start of Cold Weather All-Terrain Vehicle (CATV).

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

The Cold-weather All-Terrain Vehicle (CATV) is a tracked vehicle new start effort in FY 2021 that will provide transportation for up to a 10-Soldier element, emergency medical evacuation, command and control capability, and general cargo transportation on- and off-road in an Arctic environment under a wide range of otherwise impassable terrain, to include frozen ice, and extreme cold weather conditions to support year-round training as well as to conduct Homeland Defense (HD), Homeland Security (HS), and Defense support of Civil Authorities (DSCA) mission. The CATV will employ four carrier variants: General-purpose carrier variant capable of providing transport for not less than 9 Soldiers, plus the driver within a cab/enclosure (10 Soldiers) with equipment and supplies to sustain three days of combat operations. Ambulance capable of transporting medical equipment, two caregivers, and not less than two litter patients or four ambulatory patients in addition to the driver within a cab/enclosure. Command and Control (C2) providing the space weight and power to hosting standard Joint communications and common operating picture (COP) platforms. The C2 and COP equipment should be able to be used enroute or with minimal setup upon halt by six Soldiers in addition to the driver within a cab/enclosure. Cargo/flatbed capable of carrying outsized equipment and cargo. The cargo variant should allow for loading cargo with a forklift from either side (i.e. dropside or flatbed configuration) and have a cab/enclosure for two Soldiers (driver and vehicle commander).

FY 2021 CATV budget activities in the amount of \$6.294 million include a contract award under an Other Transaction Authority (OTA) to evaluate the technical, manufacturing feasibility and military utility of the Cold- weather All-Terrain Vehicle (CATV) Prototypes.

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

	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
<b>Title:</b> CATV Prototype	-	-	4.277	-	4.277
<b>Description:</b> Funding is provided for the procurement of the CATV Prototypes.					
<b>FY 2021 Base Plans:</b> Funding is provided for the procurement of the CATV Prototypes.					
<b>FY 2020 to FY 2021 Increase/Decrease Statement:</b>					

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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 0604604A / <i>Medium Tactical Vehicles</i>	<b>Project (Number/Name)</b> BX8 / <i>Cold Weather All-Terrain Vehicle (CATV)</i>

<b>B. Accomplishments/Planned Programs (\$ 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>
New start effort is FY 2021.					
<b>Title:</b> CATV Systems Engineering/Management Support <b>Description:</b> Funding is provided for Matrix personnel and Program Management (PM) support of the CATV program. <b>FY 2021 Base Plans:</b> Funding is provided for Matrix personnel and Program Management (PM) support of the CATV program. <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> New start effort in FY 2021.	-	-	1.017	-	1.017
<b>Title:</b> CATV Test and Evaluation <b>Description:</b> Funding is provided for endurance, performance, and production verification testing for CATV. <b>FY 2021 Base Plans:</b> Funding is provided for endurance, performance, and production verification testing for CATV. <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> New start effort is FY 2021.	-	-	1.000	-	1.000
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	6.294	-	6.294

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• D15620: <i>Family of Cold Weather All-Terrain Vehicle (CATV)</i>	-	-	0.999	-	0.999	16.648	23.307	28.857	39.956	0.000	109.767

**Remarks**

**D. Acquisition Strategy**

Cold Weather All-Terrain Vehicle (CATV): Per the Army Resource Oversight Committee (AROC) on 15 April 2019 the Army approved the procurement of 110 Cold-weather All-Terrain Vehicle (CATV).

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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 0604604A / <i>Medium Tactical Vehicles</i>	<b>Project (Number/Name)</b> BX8 / <i>Cold Weather All-Terrain Vehicle (CATV)</i>
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<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			
CATV Prototypes	TBD	TBD : TBD	-	-		-		4.277	Mar 2021	-		4.277	0.000	4.277	-
<b>Subtotal</b>			-	-		-		4.277		-		4.277	0.000	4.277	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			
CATV Engineering and Management Support	Various	Various : Various	-	-		-		1.017	Dec 2020	-		1.017	0.000	1.017	-
<b>Subtotal</b>			-	-		-		1.017		-		1.017	0.000	1.017	N/A

<b>Test and Evaluation (\$ 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			
CATV Test and Evaluation	MIPR	Various : Various	-	-		-		1.000	Jun 2021	-		1.000	0.000	1.000	-
<b>Subtotal</b>			-	-		-		1.000		-		1.000	0.000	1.000	N/A

			Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	-	0.000	6.294	-	6.294	0.000	6.294	N/A

**Remarks**

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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 0604604A / <i>Medium Tactical Vehicles</i>	<b>Project (Number/Name)</b> BX8 / <i>Cold Weather All-Terrain Vehicle (CATV)</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
CATV OTA Prototype Contract Award									1 Contract Award																			
CATV Endurance/Performance/Production Verification Testing									Testing																			

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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 0604604A / <i>Medium Tactical Vehicles</i>	<b>Project (Number/Name)</b> BX8 / <i>Cold Weather All-Terrain Vehicle (CATV)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CATV OTA Prototype Contract Award	2	2021	2	2021
CATV Endurance/Performance/Production Verification Testing	3	2021	4	2021

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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 0604604A / <i>Medium Tactical Vehicles</i>				<b>Project (Number/Name)</b> H07 / <i>Family Of Med Tac Veh</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>
H07: <i>Family Of Med Tac Veh</i>	-	3.905	0.000	2.229	-	2.229	4.450	3.455	3.472	3.472	0.000	20.983
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The FMTVA2 production and ECP modernization effort restores vehicle performance that was lost due to the addition of armor protection kits as the threat to tactical vehicles and the FMTV has increased. The FMTVA2 also addresses Space, Weight, Power, and Cooling (SWaP-C) constraints from having to host an increasing amount of C4ISR and Counter-IED equipment. PD MTV is executing the FMTVA2 effort documented in a signed Acquisition Decision Memorandum by the AAE on 16 November 2015. FY 2021 Project H07 Base funds in the amount of \$1.850 million will be used to conduct Operational Testing required per Chapter 141, Title 10 USC.

The FMTVA1P2 represents the FMTV model currently in production with over 40,000 vehicles fielded to date. The FMTVA1P2 will remain in the tactical vehicle fleet until 2040 and beyond. To keep the A1P2 fleet viable into the future and able to perform its mission in austere environments, upgrades to Survivability and Crew Protection Kits will be required as the threat on the battlefield evolves.

The three FMTV LVAD models (M1081, M1093, M1094) ended production in 2009 and represent the oldest vehicles in the FMTV fleet. Updates to the LVAD are needed to address obsolescence issues and bring the configuration up to today's standards. FY 2021 Project H07 Base funds in the amount of \$0.381 million will be used for testing of an LVAD Technical Demonstrator developed using FY 2019 Project H07 funds.

To ensure supportability of the FMTVA1P2 through FY 2040 and beyond, the PD MTV, as lifecycle managers for the system, shall address potential obsolescence issues with the powertrain and Material Handling Equipment used on the FMTV.

Increasing survivability and crew protection of the FMTVA1P2 comes at the expense of decreased vehicle mobility and performance in soft soil and winter environments. The A1P2 is being asked to carry more weight than what it was originally designed for. Low risk, highly commercial improvements to the A1P2 driveline, suspension, and tires can be made to minimize the loss in mobility performance.

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

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

	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
<b>Title:</b> FMTVA2 Production and ECP Modernization Effort	1.000	-	1.850	-	1.850
<b>Description:</b> Live Fire test assets are needed to support Live Fire Testing required per Chapter 139, Title 10 USC. Operational Testing required per Chapter 141, Title 10 USC.					

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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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<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604604A / <i>Medium Tactical Vehicles</i>	<b>Project (Number/Name)</b> H07 / <i>Family Of Med Tac Veh</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p><b><i>FY 2021 Base Plans:</i></b> Funding will be used to conduct Operational Testing of FMTVA2 truck.</p> <p><b><i>FY 2020 to FY 2021 Increase/Decrease Statement:</i></b> Budget adjustment of -\$1.850 FY 2021.</p>					
<p><b><i>Title:</i></b> Next Generation FMTV LVAD Model</p> <p><b><i>Description:</i></b> Analysis to determine updates to the FMTV Low Velocity Air Drop (LVAD) which are needed to address obsolescence issues and bring the configuration up to today?s standards.</p>	0.750	-	-	-	-
<p><b><i>Title:</i></b> FMTV Obsolescence Concerns</p> <p><b><i>Description:</i></b> Address potential obsolescence issues with the powertrain and Material Handling Equipment (MHE) used on the FMTV.</p>	0.500	-	-	-	-
<p><b><i>Title:</i></b> FMTV Armor Kit Testing</p> <p><b><i>Description:</i></b> Testing of the FMTV Armor Kit improvements to support Full Material Release.</p>	0.700	-	-	-	-
<p><b><i>Title:</i></b> FMTV LVAD Technical Demonstrator Vehicle Design and Build</p> <p><b><i>Description:</i></b> Updates to the Low Velocity Air Drop (LVAD) are needed to address obsolescence issues and bring the configuration up to today?s standards.</p> <p><b><i>FY 2021 Base Plans:</i></b> Funding will be used for design and development of the FMTV LVAD technical demonstrator.</p> <p><b><i>FY 2020 to FY 2021 Increase/Decrease Statement:</i></b> FY 2021 MTV budget activities include the design and development of a LVAD Technical Demonstrator.</p>	-	-	0.379	-	0.379
<p><b><i>Title:</i></b> FMTV LVAD/A1R Replacement Cab Redesign</p> <p><b><i>Description:</i></b> Develop concept, prototype and test of an LVAD/A1R replacement cab to support SLEP Sustainment</p>	0.630	-	-	-	-
<p><b><i>Title:</i></b> CBM+</p>	0.325	-	-	-	-

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

<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604604A / <i>Medium Tactical Vehicles</i>	<b>Project (Number/Name)</b> H07 / <i>Family Of Med Tac Veh</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<b>Description:</b> Demonstrate the collection, migration, integration, and analysis of high-fidelity vehicle CBM data in an operational environment, while also demonstrating improved efficiencies in vehicle maintenance and repair tasks. Integrated suite of CBM+ capabilities that can improve readiness of the TWV fleet.					
<b>Accomplishments/Planned Programs Subtotals</b>	3.905	-	2.229	-	2.229

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• D15500: <i>Family Of Medium Tactical Veh (FMTV)</i>	123.464	138.057	95.092	-	95.092	68.384	34.210	37.065	40.044	0.000	536.316
• D04016: <i>MEDIUM TACTICAL VEHICLE PROTECTION KITS</i>	36.017	44.019	17.527	27.066	44.593	13.371	1.108	1.310	1.680	0.000	142.098

**Remarks**

**D. Acquisition Strategy**

The strategy for the FMTVA2 Production and ECP Modernization Effort led to award of a Firm-Fixed Price Requirements contract that will have a base award of five years (two years for vehicle testing and three production years) with two, one-year option production periods and to conduct FMTVA2 Live Fire and Operational Testing. These efforts will utilize Government test facilities.

The strategy for the Next Generation FMTV LVAD Model Configuration is to address obsolescence issues and bring the configuration up to today's standards. This effort will utilize a System Technical Support contract with the current FMTV OEM.

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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 0604604A / <i>Medium Tactical Vehicles</i>	<b>Project (Number/Name)</b> H07 / <i>Family Of Med Tac Veh</i>
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<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			
FMTVA1P2 Underbody Armor Kit Improvement.	C/FFP	Oshkosh Defense Corp : Oshkosh, WI	2.874	-		-		-		-		-	0.000	2.874	-
FMTV LVAD Next Generation Model Analysis	TBD	TBD : TBD	-	0.750	Jan 2019	-		-		-		-	0.000	0.750	-
FMTV Obsolescence Concerns	TBD	TBD : TBD	-	0.500	Sep 2019	-		-		-		-	0.000	0.500	-
FMTVA1P2 Mobility Improvement Study	C/FFPLOE	NATC : Stagecoach, NV	1.556	-		-		-		-		-	0.000	1.556	-
FMTV LVAD/A1R Replacement Cab Redesign	TBD	TBD : TBD	-	0.630	Apr 2019	-		-		-		-	0.000	0.630	-
CBM+	TBD	TBD : TBD	-	0.325	Aug 2019	-		-		-		-	0.000	0.325	-
<b>Subtotal</b>			4.430	2.205		-		-		-		-	0.000	6.635	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			
System Engineering/ Program Management (SEPM)	MIPR	PM MTV : TACOM LCMC, Warren, MI	0.009	-		-		-		-		-	0.000	0.009	-
<b>Subtotal</b>			0.009	-		-		-		-		-	0.000	0.009	N/A

<b>Test and Evaluation (\$ 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			
FMTVA2 Live Fire Vehicle Test Assets	C/FFP	Oshkosh Defense : Oshkosh, WI	1.290	-		-		-		-		-	0.000	1.290	-
FMTVA2 Live Fire Testing	MIPR	ATC : Aberdeen Proving Ground, MD	-	1.000	Jul 2019	-		-		-		-	0.000	1.000	-



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**Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604604A / <i>Medium Tactical Vehicles</i>	<b>Project (Number/Name)</b> H07 / <i>Family Of Med Tac Veh</i>
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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
<b>FMTVA2</b>																												
FMTVA2 Delivery Order 2 (DO2)					▲ 1 DO2																							
FMTVA2 Production Validation Testing (PVT)	[Redacted]																											
FMTVA2 Live Fire Test & Evaluation (LFT&E)	[Redacted]																											
FMTVA2 Delivery Order 3 (DO3)					▲ 2 DO3																							
FMTVA2 Operational Testing (OT)									[Redacted] OT																			
FMTVA2 Type Classification and Material Release (TC/MR)													▲ 3 TC/MR															
FMTVA2 First Unit Equipped (FUE)																	▲ 4 FUE											
<b>FMTVA1P2</b>																												
FMTVA1P2 FY 2018 Vehicle Delivery	[Redacted]																											
<b>FMTVA1P2 UNDERBODY ARMOR KIT (UAK)</b>																												
FMTVA1P2 Underbody Armor Kit Improvement Development	[Redacted]				[Redacted]																							
FMTVA1P2 Underbody Armor Kit Improvement Test													[Redacted] UAK Test															

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**Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604604A / <i>Medium Tactical Vehicles</i>	<b>Project (Number/Name)</b> H07 / <i>Family Of Med Tac Veh</i>
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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
<b>FMTV LVAD NEXT GENERATION MODEL</b>																												
FMTV LVAD Next Generation Model																												
FMTV LVAD Technical Demonstrator Vehicle Design and Build																												
FMTV LVAD Technical Demonstrator Testing																												

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2021 Army **Date:** February 2020

<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604604A / <i>Medium Tactical Vehicles</i>	<b>Project (Number/Name)</b> H07 / <i>Family Of Med Tac Veh</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FMTVA2	1	2019	4	2024
FMTVA2 Contract Award/Delivery Order 1	2	2018	2	2018
FMTVA2 Allocated Baseline Review (ABR)	3	2018	3	2018
FMTVA2 Product Baseline Review (PBR)	4	2018	4	2018
FMTVA2 Delivery Order 2 (DO2)	2	2020	2	2020
FMTVA2 Production Validation Testing (PVT)	3	2019	2	2020
FMTVA2 Live Fire Test & Evaluation (LFT&E)	3	2019	4	2019
FMTVA2 Delivery Order 3 (DO3)	3	2020	3	2020
FMTVA2 Operational Testing (OT)	2	2021	2	2022
FMTVA2 Type Classification and Material Release (TC/MR)	1	2022	1	2022
FMTVA2 First Unit Equipped (FUE)	2	2022	2	2022
FMTVA1P2	1	2019	4	2019
FMTVA1P2 FY 2018 Vehicle Delivery	4	2018	4	2019
FMTVA1P2 UNDERBODY ARMOR KIT (UAK)	4	2018	4	2022
FMTVA1P2 Underbody Armor Kit Improvement Development	4	2018	3	2020
FMTVA1P2 Underbody Armor Kit Improvement Test	1	2021	3	2021
FMTV LVAD NEXT GENERATION MODEL	4	2019	4	2023
FMTV LVAD Next Generation Model	4	2019	1	2021
FMTV LVAD Technical Demonstrator Vehicle Design and Build	4	2020	1	2022
FMTV LVAD Technical Demonstrator Testing	2	2021	2	2022