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

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0607136A / Blackhawk Product Improvement Program							
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	-	8.300	14.773	-	-	-	0.000	0.000	0.000	0.000	Continuing	Continuing
ES3: Blackhawk Product Improvement Program	-	8.300	14.773	-	-	-	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

UH-60V:

The H-60L Digital Blackhawk, now designated as UH-60V, is designed to update the existing H-60L analog architecture to a digital infrastructure enabling the upgraded aircraft to have a similar Pilot-Vehicle Interface (PVI) to the H-60M. The program will address current capability gaps and meet operational requirements by employing an evolutionary acquisition approach to leverage mature technologies that have been successfully integrated on other military aircraft. The program will reduce obsolescence and increase commonality and interoperability by installing a digital cockpit, bussing and upgrading the communication/identification suite, improving navigation guidance, and integrating Aircraft Survivability Equipment (ASE), digital moving map, and Joint Variable Message Format (JVMF) messaging. Continuing funding will provide hardware and software development, training material development, as well as developmental and operational testing.

MEDEVAC:

Independent of the UH-60V Program of Record and Acquisition Program Baseline (APB), incremental RDT&E funding to support integration of a MEDEVAC capability on UH-60V is planned for FY 2019-2022. In accordance with AR 40-60, Medical Materiel Acquisition Policy, the Army's Aeromedical Evacuation capability is funded by two portfolio managers, Program Executive Office for Aviation (PEOAVN) and the Medical Research Development Command, (MRDC). PEOAVN is responsible for the integration of MEDEVAC Mission Equipment Package (MEP) on the UH-60V. MRDC is responsible for recurring costs to procure kits and resource the installation of MEP kits on UH-60V MEDEVAC helicopters.

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	8.300	4.773	0.000	-	0.000
Current President's Budget	8.300	14.773	0.000	-	0.000
Total Adjustments	0.000	10.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

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Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: ES3: *Blackhawk Product Improvement Program*
 Congressional Add: *Blade Improvement Blackhawk*

	FY 2021	FY 2022
	-	10.000
Congressional Add Subtotals for Project: ES3	-	10.000
Congressional Add Totals for all Projects	-	10.000

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Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0607136A / <i>Blackhawk Product Improvement Program</i>				Project (Number/Name) ES3 / <i>Blackhawk Product Improvement Program</i>			
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
ES3: <i>Blackhawk Product Improvement Program</i>	-	8.300	14.773	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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MEDEVAC:

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

	FY 2021	FY 2022	FY 2023
Title: UH-60V Support	0.350	-	-
Description: Support Costs include Systems Engineering/Program Management (SEPM) type activities performed at various test agencies.			
Title: UH-60V Test & Evaluation	4.610	-	-
Description: The Utility Helicopters Project Office (UHPO) is responsible for day-to-day test management activities to include execution of all developmental tests and support of operational tests for the UH-60V Program. The focal point for test management is the UH-60V Test Lead Engineer who is the chair for the UH-60V Test and Evaluation (T&E) Working-level Integrated Product Team. The UH-60 T&E team ensures integration and coordination of test and data requirements among all agencies involved in the test and acquisition of the UH-60V effort. T&E activities include: AFTD Baseline Flight Testing, IOTE, Cybersecurity and Interoperability tests.			

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Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0607136A / <i>Blackhawk Product Improvement Program</i>	Project (Number/Name) ES3 / <i>Blackhawk Product Improvement Program</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>Title: MEDEVAC MEP Integration Product Development</p> <p>Description: MEDEVAC MEP Integration Product Development.</p> <p>FY 2022 Plans: Finalize the Technical Data Package deliverables and close out the PIF contract task order.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: No RDT&E funding required beyond FY2022 for MEDEVAC. Funding will shift to OPA funds to support MEDEVAC MEP procurement and fielding efforts.</p>		0.842	2.886	-
<p>Title: MEDEVAC MEP Integration Support</p> <p>Description: Support the HW and SW Design Activities with Airworthiness and Technical data division support.</p> <p>FY 2022 Plans: Support the hardware and software Design Activities with Airworthiness and Technical data division support.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: No RDT&E funding required beyond FY2022 for MEDEVAC. Funding will shift to OPA funds to support MEDEVAC MEP procurement and fielding efforts.</p>		0.186	0.388	-
<p>Title: MEDEVAC MEP Management Services</p> <p>Description: Management Services includes all activities related to Government/Contractor SEPM to include the cost of Government and Contractor personnel supporting the H-60V MEDEVAC MEP Integration Program.</p> <p>FY 2022 Plans: Provide Management Services with Government / Contractor SEPM to include the cost of the Government and contractor personnel supporting the H-60V MEDEVAC MEP Integration Program.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: No RDT&E funding required beyond FY2022 for MEDEVAC. Funding will shift to OPA funds to support rescue hoist, IMMSS patient handling system and MEDEVAC Mission Sensor procurement and fielding efforts.</p>		1.565	0.658	-
<p>Title: MEDEVAC Test & Evaluation</p> <p>Description: The UHPO is responsible for day-to-day test management activities to include the execution of all developmental tests for the UH-60V MEDEVAC program. As part of this responsibility, UHPO manages the Test and Evaluation Working Group with a UH-60V MEDEVAC Test lead. He/she ensures the test agencies are coordinated, test plans are created, instrumentation</p>		0.747	0.667	-

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Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0607136A / <i>Blackhawk Product Improvement Program</i>	Project (Number/Name) ES3 / <i>Blackhawk Product Improvement Program</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
is developed and installed, and airworthiness approvals are obtained. He/she tracks status of the testing throughout the program, assists in resolving issues, and coordinates approval of the test data and test reports. For this effort, the UHPO will manage system-level testing necessary to receive a fielding AWR, including Electromagnetic Compatibility (EMC), Noise Floor, Electromagnetic Vulnerability (EMV), and ground system checkouts and flight testing of the MEDEVAC MEP.			
FY 2022 Plans: MEDEVAC plans to implement funding at RTC to continue execution of continued system-level testing and a delta operational test.			
FY 2022 to FY 2023 Increase/Decrease Statement: No RDT&E funding required beyond FY2022 for MEDEVAC. Funding will shift to OPA funds to support MEDEVAC MEP procurement and fielding efforts.			
Title: FY22 SBIR/STTR	-	0.174	-
FY 2022 Plans: SBIR/STTR amount in accordance with Title 15 USC 638			
FY 2022 to FY 2023 Increase/Decrease Statement: SBIR/STTR amount in accordance with Title 15 USC 638			
Accomplishments/Planned Programs Subtotals	8.300	4.773	-

	FY 2021	FY 2022
Congressional Add: Blade Improvement Blackhawk	-	10.000
FY 2022 Plans: Award contract for development and qualification of blade improvements		
Congressional Adds Subtotals	-	10.000

C. Other Program Funding Summary (\$ in Millions)											
Line Item	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
• A05009: <i>UH-60 Black Hawk L and V Models</i>	165.197	166.205	178.658	-	178.658	157.024	160.313	206.388	205.626	0.000	1,239.411
• Q13015: <i>MEDICAL EVACUATION</i>	-	12.314	32.164	-	32.164	16.617	23.178	26.447	25.476	0.000	136.196

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

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u> <u>Base</u>	<u>FY 2023</u> <u>OCO</u>	<u>FY 2023</u> <u>Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks
 Q13015000 MEDICAL EVACUATION provides procurement funding for MEDEVAC MEP capability on UH-60 helicopters. Per requirements, starting in FY 2022, Q13015000 will resource procurement of MEDEVAC MEP kits and installations at a rate of 15 aircraft per year through FY 2034, which is the estimated year the AAO of 200 UH-60V MEDEVAC is reached. Figures shown above reflect the full FL8D/Q13015000/OPA/MEDICAL EVACUATION funding line, which includes the production kits and MEP installation costs at CCAD as well as other non-MEDEVAC funding requirements. UH-60V MEDEVAC MEP Q13015000 OPA requirements are \$5.7 million in FY 2022, \$6.1 million in FY 2023, \$7.8 million in FY 2024, \$8.1 million FY 2025 and \$8.6 million FY2026. Total MEDEVAC MEP requirement in Q1301500 through FY 2034 is \$88.1M.

D. Acquisition Strategy

The UH-60V program plans to leverage various test agencies, to design, integrate and build three production representative aircraft. The GOGO facility uses a cost plus contract vehicle and conducted full and open competition for the selection of the avionics solution provider.

Independent of the UH-60V Program of Record and Acquisition Program Baseline (APB), the MEDEVAC MEP program plans to utilize the U. S. Army Development Command (DEVCOM) Aviation and Missile Center (AvMC) and Prototype Integration Facility (PIF) to design and integrate MEDEVAC capability into the UH-60V. By leveraging the same GOGO facility utilized by the UH-60V program, efficient design, software development, integration, and testing will occur by eliminating redundant tasks and employing experienced government resources already in possession of pertinent UH-60V technical data required to support the MEDEVAC MEP nonrecurring engineering (NRE) effort. Prototype, validation, and verification of technical publications, as well as airworthiness testing, will be accomplished following completion of the UH-60V IOT&E, at which time one UH-60V Engineering Development Model (EDM) and two Low-Rate Initial Production (LRIP) aircraft will be allocated to the MEDEVAC MEP program. Following completion of MEDEVAC MEP NRE, technical products will feed production and fielding contracts, which will be resourced by the U.S. Army Medical Department, AMEDD. Procurement funding is programmed on Q13015000 MEDICAL EVACUATION.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army **Date:** April 2022

Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0607136A / <i>Blackhawk Product Improvement Program</i>	Project (Number/Name) ES3 / <i>Blackhawk Product Improvement Program</i>
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Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
UH-60V - Organic	MIPR	Various : Redstone Arsenal, AL	12.791	-		-		-		-		-	0.000	12.791	-
UH-60V - Contractor	C/LH	Various : Redstone Arsenal, AL	10.060	-		-		-		-		-	0.000	10.060	-
MEDEVAC MEP Integration - Organic	MIPR	Various : Redstone Arsenal	2.032	0.208	Feb 2021	-		-		-		-	Continuing	Continuing	-
MEDEVAC MEP Integration - Contractor	C/LH	Various : Redstone Arsenal, AL	1.505	1.357	Feb 2021	0.658	Oct 2021	-		-		-	Continuing	Continuing	-
FY22 SBIR/STTR	TBD	TBD : TBD	-	-		0.174	Apr 2022	-		-		-	0.000	0.174	-
Subtotal			26.388	1.565		0.832		-		-		-	Continuing	Continuing	N/A

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
UH-60V Development Engineering	C/CPFF	CCDC AvMC : Redstone Arsenal, AL	170.456	-		-		-		-		-	0.000	170.456	-
MEDEVAC MEP Product Development and Integration	C/CPFF	DEVCOM AvMC, PIF : Redstone Arsenal AL	19.514	0.842	Feb 2021	2.886		-		-		-	0.000	23.242	-
SATCOM	MIPR	To Be Determined : Redstone Arsenal AL	9.926	-		-		-		-		-	0.000	9.926	-
Blade Improvement	TBD	To Be Determined : Redstone Arsenal AL	-	-		10.000		-		-		-	0.000	10.000	-
Subtotal			199.896	0.842		12.886		-		-		-	0.000	213.624	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army **Date:** April 2022

Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0607136A / <i>Blackhawk Product Improvement Program</i>	Project (Number/Name) ES3 / <i>Blackhawk Product Improvement Program</i>
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Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
UH-60V	MIPR	Various : Redstone Arsenal, AL	17.482	0.350	Feb 2021	-		-		-		-	0.000	17.832	-
MEDEVAC MEP Integration Support	MIPR	Various : Redstone Arsenal AL	1.110	0.186	Feb 2021	0.388	Oct 2021	-		-		-	Continuing	Continuing	-
Subtotal			18.592	0.536		0.388		-		-		-	Continuing	Continuing	N/A

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
UH-60V	MIPR	Redstone Test Center : Redstone Arsenal, AL	17.156	4.610	Oct 2021	-		-		-		-	0.000	21.766	-
MEDEVAC	MIPR	Redstone Test Center : Redstone Arsenal, AL	-	0.747	Feb 2021	0.667	Oct 2021	-		-		-	Continuing	Continuing	-
Subtotal			17.156	5.357		0.667		-		-		-	Continuing	Continuing	N/A

Remarks
Government Support

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	262.032	8.300	14.773	-	-	-	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 / 7	R-1 Program Element (Number/Name) PE 0607136A / <i>Blackhawk Product Improvement Program</i>	Project (Number/Name) ES3 / <i>Blackhawk Product Improvement Program</i>

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
UH-60V Support (RDTE)	Support																											
UH-60V Test and Evaluation (RDTE)	Test and Evaluation																											
MEDEVAC MEP Integration Management Services (RDTE)	MEDEVAC MEP Integration Management Services																											
MEDEVAC MEP Product Development and Integration (RDTE)	MEDEVAC MEP Product Development and Integration																											
MEDEVAC MEP Integration Support (RDTE)	MEDEVAC MEP Integration Support																											
MEDEVAC MEP Integration Test and Evaluation (RDTE)	MEDEVAC MEP Integration Test and Evaluation																											
Satellite Communications Integration Development	SATCOM Integration Development																											
Blade Improvement Blackhawk (RDTE)									Blade Improvement Blackhawk (Product Development)																			

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0607136A / <i>Blackhawk Product Improvement Program</i>	Project (Number/Name) ES3 / <i>Blackhawk Product Improvement Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
UH-60V Development (Research, Development, Test, and Evaluation (RDTE))	4	2014	4	2020
UH-60V Management Services (RDTE)	1	2014	4	2020
UH-60V Support (RDTE)	1	2014	4	2021
UH-60V Test and Evaluation (RDTE)	4	2015	4	2022
MEDEVAC MEP Integration Management Services (RDTE)	1	2019	4	2022
MEDEVAC MEP Product Development and Integration (RDTE)	1	2019	4	2022
MEDEVAC MEP Integration Support (RDTE)	4	2019	4	2022
MEDEVAC MEP Integration Test and Evaluation (RDTE)	2	2021	4	2022
Satellite Communications Integration Development	4	2020	4	2021
Blade Improvement Blackhawk (RDTE)	3	2022	3	2024