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

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0607145A / <i>Apache Future Development</i>
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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	-	52.502	10.067	10.074	-	10.074	10.770	0.000	0.000	0.000	0.000	83.413
FD5: <i>Apache Product Improvement</i>	-	52.502	10.067	10.074	-	10.074	10.770	-	-	-	0.000	83.413

A. Mission Description and Budget Item Justification

The Apache Capabilities Enhancements (ACE) prioritizes, informs, influences, matures, tracks, statuses, and packages technologies and/or material solutions to address known capability gaps, identified during real-world combat missions and associated with current/emerging threats; for transition to Apache development for integration and implementation to the AH-64E fleet to increase combat capability.

B. Program Change Summary (\$ in Millions)

	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023 Base</u>	<u>FY 2023 OCO</u>	<u>FY 2023 Total</u>
Previous President's Budget	52.502	10.067	0.000	-	0.000
Current President's Budget	52.502	10.067	10.074	-	10.074
Total Adjustments	0.000	0.000	10.074	-	10.074
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	10.074	-	10.074

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

Project: FD5: *Apache Product Improvement*

Congressional Add: *Program Increase - Crossbow*

	FY 2021	FY 2022
	5.000	-
Congressional Add Subtotals for Project: FD5	5.000	-
Congressional Add Totals for all Projects	5.000	-

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

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Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0607145A / Apache Future Development				Project (Number/Name) FD5 / Apache Product Improvement			
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
FD5: Apache Product Improvement	-	52.502	10.067	10.074	-	10.074	10.770	-	-	-	0.000	83.413
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Apache Capabilities Enhancements (ACE) prioritizes, informs, influences, matures, tracks, statuses, and packages technologies and/or material solutions to address known capability gaps, identified during real-world combat missions and associated with current/emerging threats; for transition to Apache development for integration and implementation to the AH-64E fleet to increase combat capability.

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

	FY 2021	FY 2022	FY 2023
Title: Product Development	2.245	9.700	10.074
Description: Future development of production program.			
FY 2022 Plans: Apache Program management Office (PMO) will continue to develop a phased approach to incorporate an Improved Tail Rotor Drive System (ITRDS) for the AH-64 platform. This second phase will build on the previous efforts that culminated in Preliminary Design Review (PDR). This phase will use the information gained previously and culminate in the Critical Design Review (CDR). Ultimately, these product improvements would increase performance from the legacy design, decrease the maintenance burden on the warfighter, and reduce overall O&S costs. These improvements would also build the infrastructure for an improved Drive system that will be able to handle increased performance upgrades, provide a positive impact to future sustainment, support Multi-Domain Operations, and ensuring the warfighter is not placed in a catastrophic situation when it is preventable. Additionally, As Joint Battle Spaces become more and more technically demanding, the need for greater processing power, hardware and software that supports Open System Architecture also increases. The Apache PMO needs to pursue trade studies and demonstrations on capabilities that support Open System Architecture and speeding insertions of technology. The funding would be utilized to conduct analysis, determine feasibility, identify integration			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
challenges and ultimately prove out these capabilities.				
<p>FY 2023 Plans: Apache Project Management Office (PMO) will continue a phased approach to develop an Improved Tail Rotor Drive System (ITRDS) for the AH-64 platform. Phase III will consist of pre-qualification and risk reduction efforts. During this Phase, the PMO will procure parts and will initiate manufacturing and prototyping efforts for the design. Test plans and procedures are generated and pre-tests conducted to ensure design is stable prior to qualification. Ultimately, these product improvements will increase performance and safety from the legacy design, decrease the maintenance burden on the warfighter, and reduce overall O&S costs. These improvements will also build the infrastructure for an improved Drive System that will support Multi-Domain Operations, able to handle increased performance upgrades, provide a positive impact to future sustainment, and increase operator safety margin.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: The increase in funding for Project FD5 Apache Product Improvement from FY22 to FY23 results from additional costs of development for the Improved Tail Rotor Drive System (ITRDS).</p>				
<p>Title: Spike NLOS (Non Line Of Sight)</p> <p>Description: Apache will Federate the Spike NLOS (Non Line Of Sight) missile system by providing Program Management, Systems Engineering, Development Test, Live Fire Test, Life Cycle Management and Integrated Logistics. This effort will support the directed requirement for the AH-64D/E interim Long Range Precision Munition (LRPM) solution. The Army will optimize the Aviation munitions portfolio as part of this strategy creating reinvestment opportunities to close existing lethality gaps by making the portfolio sufficiently lethal for both manned and unmanned platforms against a broad range of increasingly more sophisticated threats. The Spike NLOS Kit consists of a bus controller, video recorder, weapons controller panel, hand control grip, weapons processor, communication pod, power relay box and associated wiring harnesses. Final fielded configuration will include 18 kits and 3 spares.</p>		45.257	-	-
<p>Title: FY22 SBIR/STTR Transfer</p> <p>FY 2022 Plans: SBIR/STTR amount in accordance with Title 15 USC 638.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: SBIR/STTR amount in accordance with Title 15 USC 638.</p>		-	0.367	-
Accomplishments/Planned Programs Subtotals		47.502	10.067	10.074

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	FY 2021	FY 2022
Congressional Add: Program Increase - Crossbow	5.000	-
FY 2021 Accomplishments: This is for demonstration of the AH-64 dual-piloted portion of the CROSSBOW System		
Congressional Adds Subtotals	5.000	-

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
• A05111: AH-64 Apache Block IIIA Reman	961.487	661.366	693.879	-	693.879	824.847	583.309	41.967	41.789	6,118.130	9,926.774
• A05133: AH-64 Apache Block IIIB New Build	69.154	-	0.000	-	0.000	-	-	-	-	-	Continuing Continuing
• AA6605: AH-64 MODS	99.816	118.560	85.840	-	85.840	66.270	5.072	66.498	66.256	-	Continuing Continuing

Remarks

D. Acquisition Strategy

The NRE will encompass subsystem integration and will utilize existing test aircraft, incorporate the technical insertions, and initiate appropriate qualification and operational flight-testing. In FY 2014, a contract for Apache AH-64E Lot 3, initiating Full Rate Production, was awarded with options for Lot 4. Training device concurrency will be maintained with each technical insertion. The Engineering/Manufacturing Design (EMD) effort is managed as Cost Reimbursable. Production efforts will be awarded as Fixed Price Incentive (FPI) and include the Advance Procurement requirements. In FY 2013, FY 2014, and FY 2015 MRL NRE encompassed US Government (USG) design of the Hydra Launcher Electronics Assembly (LEA), modification of the M261 launcher, launcher fabrication, and launcher testing. In FY 2015 - FY 2019, Apache AH-64E Version 6 System Development and Demonstration (SDD) Contract. Multi-year production awarded March 15, 2017. FY 2020 - FY 2023, the Apache Capabilities Enhancements (ACE) delivers required capability enhancements supported by Apache's Modernization Strategy to ensure AH-64E maintains relevance and dominance throughout its expected service life.

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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 0607145A / Apache Future Development	Project (Number/Name) FD5 / Apache Product Improvement	

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
ITRDS Activities																												
Contract Award for SPIKE NLOS																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ITRDS Activities	4	2022	4	2028
Contract Award for SPIKE NLOS	3	2021	2	2024