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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Army **Date:** February 2018

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0607135A / Apache Product Improvement Program							
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	60.995	59.977	31.049	-	31.049	0.169	0.173	0.000	0.000	0.000	152.363
ES2: Apache Product Improvement Program	-	60.995	59.977	31.049	-	31.049	0.169	0.173	0.000	0.000	0.000	152.363

A. Mission Description and Budget Item Justification

The Fiscal Year (FY) 2019 budget request for Apache AH-64E, previously known as Apache Block III, will fund the non-recurring engineering (NRE), development, and testing work associated with the planned remanufacture and new build of 690 Apache aircraft in the AH-64E configuration (deliveries began in Oct 2011). The AH-64E program consists of two Major Defense Acquisition Programs (MDAP), AH-64E Remanufacture and AH-64E New Build. This project also addresses obsolescence and reliability challenges and provides increased combat capability to the aircraft. Upgrades include: Unmanned Aircraft System (UAS) Level III-IV Control, Improved Situational Awareness, Upgraded Communications Suite, Improved Drive and Propulsion Systems, Improved Targeting Capability, Increased Computer Processing Capability and Speed, Improved Navigation Systems, Improved Diagnostics and Maintainability, and Joint Air to Ground Missile (JAGM) integration. Upgrades are integrated as incremental block modifications. The program addresses operational shortfalls identified during real-world combat missions and meets Longbow Apache Capability Production Document (CPD) requirements for modernization.

B. Program Change Summary (\$ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	66.441	59.977	0.180	-	0.180
Current President's Budget	60.995	59.977	31.049	-	31.049
Total Adjustments	-5.446	0.000	30.869	-	30.869
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-2.000	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-1.512	-	30.869	-	30.869
• Other Adjustments 1	-1.934	-	-	-	-

Change Summary Explanation

Funding for FY19 moved from PE 677145, Project FD5 line. 1) Allows alignment with Joint Air to Ground Missile (JAGM) without requiring a future software insertion. 2) Improves efficiency and effectiveness of operational testing by conducting a combined OT event for JAGM and AH-64Ev6. 3) Reduces burden on FORSCOM and Soldiers by consolidating two test events into one event. 4) Allows further development and refinement of AH-64Ev6 software with user input prior to fielding.

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Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0607135A / Apache Product Improvement Program				Project (Number/Name) ES2 / Apache Product Improvement Program			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
ES2: Apache Product Improvement Program	-	60.995	59.977	31.049	-	31.049	0.169	0.173	0.000	0.000	0.000	152.363
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Fiscal Year (FY) 2019 budget request for Apache AH-64E, previously known as Apache Block III, will fund the non-recurring engineering (NRE), development, and testing work associated with the planned remanufacture and new build of 690 Apache aircraft in the AH-64E configuration (deliveries began in Oct 2011). The AH-64E program consists of two Major Defense Acquisition Programs (MDAP), AH-64E Remanufacture and AH-64E New Build. This project also addresses obsolescence and reliability challenges and provides increased combat capability to the aircraft. Upgrades include: Unmanned Aircraft System (UAS) Level III-IV Control, Improved Situational Awareness, Upgraded Communications Suite, Improved Drive and Propulsion Systems, Improved Targeting Capability, Increased Computer Processing Capability and Speed, Improved Navigation Systems, Improved Diagnostics and Maintainability, and Joint Air to Ground Missile (JAGM) integration. Upgrades are integrated as incremental block modifications. The program addresses operational shortfalls identified during real-world combat missions and meets Longbow Apache Capability Production Document (CPD) requirements for modernization.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2017	FY 2018	FY 2019	
Title: Product Development									51.105	55.316	22.325	
Description: Funding is provided for the following efforts by Boeing.												
FY 2018 Plans: Development, Integration & Testing work associated with the planned remanufacture and new build of Apache aircraft in the AH-64E Capability Version 6 configuration (cognitive decision aiding, soldier radio waveform, modernized dayside assembly, modernized radio frequency interferometer, maritime targeting, and radar upgrades) and to enhance operational capabilities, and JAGM integration.												
FY 2019 Plans: Development, Integration & Testing work associated with the planned remanufacture and new build of Apache aircraft in the AH-64E Capability Version 6 configuration (cognitive decision aiding, soldier radio waveform, modernized dayside assembly, modernized radio frequency interferometer, maritime targeting, and radar upgrades) and to enhance operational capabilities, and JAGM integration.												
FY 2018 to FY 2019 Increase/Decrease Statement: FY19 Funding is expected to complete efforts by Boeing.												
Title: Support Costs									1.129	-	-	

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B. Accomplishments/Planned Programs (\$ in Millions)									FY 2017	FY 2018	FY 2019
Description: Funding is provided for GFE supporting Apache AH-64E tests and government R&D Facilities.											
Title: Test and Evaluation									6.500	2.100	7.289
Description: Funding is provided for Development Testing and Evaluation and Operational Test and Evaluation.											
FY 2018 Plans: Funding is provided for Development Testing and Evaluation and Operational Test and Evaluation.											
FY 2019 Plans: Funds required for completion of FOT&E II											
FY 2018 to FY 2019 Increase/Decrease Statement: FY19 funding is expected to complete FOT&E II.											
Title: Management Services									2.261	2.561	1.435
Description: Funding is provided for the following effort: Payroll, Travel, Support Contractors, Matrix Support.											
FY 2018 Plans: Funding is provided for the following effort: Payroll, Travel, Support Contractors, Matrix Support.											
FY 2019 Plans: Funding is provided for the following effort: Payroll, Travel, Support Contractors, Matrix Support.											
FY 2018 to FY 2019 Increase/Decrease Statement: FY19 Funding is provided for Payroll, Travel, Support Contractors, and Matrix Support.											
Accomplishments/Planned Programs Subtotals									60.995	59.977	31.049
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• AA6605: AH-64 Mods	187.883	238.141	104.996	-	104.996	95.027	85.546	112.579	89.240	580.576	1,493.988
• A05111: AH-64 Apache Block IIIA Reman	852.112	765.016	753.248	-	753.248	808.514	789.701	707.777	509.487	Continuing	Continuing
• A05133: AH-64 Apache Block IIIB New Build	261.900	374.100	284.687	-	284.687	100.640	184.258	-	-	Continuing	Continuing

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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
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 FY14, a contract for Apache AH-64E Lot 3, initiating Full Rate Production, was awarded with options for Lot 4 and will continue to a total of 690 remanufactured and new build aircraft.											
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 FY13, FY14, and FY15 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 FY15-FY19, Apache AH-64E Version 6 System Development and Demonstration (SDD) Contract.											
Multi-year production awarded March 15, 2017.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 7						R-1 Program Element (Number/Name) PE 0607135A / Apache Product Improvement Program						Project (Number/Name) ES2 / Apache Product Improvement Program			
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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
Management Services (In-House, Travel, etc.)	MIPR	PMO AAH Matrix Support AMCOM Express : Redstone Arsenal, AL	6.030	2.261		2.561		1.435		-		1.435	0.000	12.287	-
Subtotal			6.030	2.261		2.561		1.435		-		1.435	0.000	12.287	N/A
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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
The Boeing Company	SS/CPIF	Boeing Contracts : Mesa, AZ	114.407	51.105		55.316		22.325		-		22.325	0.000	243.153	-
Longbow Limited Liability (LBL) Contracts	SS/CPIF	Longbow Limited Liability (LBL) Contracts : Orlando, FL	9.000	-		-		-		-		-	0.000	9.000	-
Ground Fire Acquisition Development (GFAD)	SS/CPIF	PM AVIATION SYSTEMS Various Activities : Various	12.000	-		-		-		-		-	0.000	12.000	-
Subtotal			135.407	51.105		55.316		22.325		-		22.325	0.000	264.153	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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
Program Support Activities	MIPR	Various : Various	2.726	1.129		-		-		-		-	0.000	3.855	-
Subtotal			2.726	1.129		-		-		-		-	0.000	3.855	N/A

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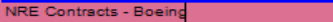



Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Assessments, Test Integration Working Group (TWIG), TEMP, etc.	MIPR	Various : Various	4.900	6.500		2.100		7.289		-		7.289	0.000	20.789	-
Subtotal			4.900	6.500		2.100		7.289		-		7.289	0.000	20.789	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	149.063	60.995		59.977		31.049		-		31.049	0.000	301.084	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army			Date: February 2018		
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Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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
NRE Contracts - Boeing																												
Force Develop Test & Evaluation (FDTE III)																												
Follow-On Test & Eval II																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NRE Contracts - Boeing	1	2011	3	2018
NRE Contracts - Longbow Limited Liability	1	2011	4	2016
MRL Design	3	2013	4	2014
Force Develop Test & Evaluation (FDTE III)	4	2017	4	2017
Follow-On Test & Eval II	3	2019	3	2019
MRL Integration and Test	2	2015	4	2015