Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Army											**Date:** March 2019	

Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 7: *Operational Systems Development*						R-1 Program Element (Number/Name) PE 0607145A *I Apache Future Development*						

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	5.448	-	5.448	7.252	9.032	11.606	10.495	0.000	43.833
FD5: *Apache Product Improvement*	-	0.000	0.000	5.448	-	5.448	7.252	9.032	11.606	10.495	0.000	43.833

Note

This Program Element is a New Start effort.

A. Mission Description and Budget Item Justification

The Apache Capabilities Enhancements (ACE) prioritizes, informs and influences, technologies and 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)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	5.448	-	5.448
Total Adjustments	0.000	0.000	5.448	-	5.448
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	5.448	-	5.448

Change Summary Explanation

This Program Element is a New Start effort.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army										Date: March 2019	
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 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
FD5: *Apache Product Improvement*	-	0.000	0.000	5.448	-	5.448	7.252	9.032	11.606	10.495	0.000	43.833
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note
 This RDT&E Project is a New Start effort.

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 2018**	**FY 2019**	**FY 2020**
Title: Product Development	-	-	5.448
Description: Future development of production program. *FY 2020 Plans:* Perform trade studies evaluating options for pursuing a family, i.e. large, medium, small, of common processors that are software and shop-level re-configurable and exploring options for sensor processing and fusion at the platform level processor or other dedicated processor. The Common Processor trade study supports Apache's approach for addressing the increasing demand for processing power while reducing logistical impact from both a maintenance and supply perspective. The sensor processing and fusion at a platform level processor or other upstream dedicated processor trade study will look at identifying upstream processing options for providing an optimized situational awareness picture of the operational environment and supporting enhanced target/threat identification utilizing multiple sensor inputs. *FY 2019 to FY 2020 Increase/Decrease Statement:* Funding in FY20 is for future development of production program.			
Accomplishments/Planned Programs Subtotals	-	-	5.448

Exhibit R-2A, **RDT&E Project Justification:** PB 2020 Army		**Date:** March 2019
Appropriation/Budget Activity 2040 *I* 7	**R-1 Program Element (Number/Name)** PE 0607145A *I Apache Future Development*	**Project (Number/Name)** FD5 *I Apache Product Improvement*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• A05111: *AH-64 Apache Block IIIA Reman*	905.326	927.798	997.719	-	997.719	962.446	706.243	799.500	806.301	6,118.130	12,223.463
• A05133: *AH-64 Apache Block IIIB New Build*	1,023.300	511.287	0.000	-	0.000	-	-	-	-	Continuing	Continuing
• AA6605: *AH-64 MODS*	238.141	104.996	58.172	-	58.172	85.475	84.505	82.166	64.682	580.576	1,298.713

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.

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.

FY 20, 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.

E. Performance Metrics

N/A

Exhibit R-3, **RDT&E Project Cost Analysis:** PB 2020 Army												**Date:** March 2019		
Appropriation/Budget Activity 2040 *I* 7					**R-1 Program Element (Number/Name)** PE 0607145A *I Apache Future Development*						**Project (Number/Name)** FD5 *I Apache Product Improvement*			

Product Development ($ in Millions)				FY 2018		FY 2019		**FY 2020 Base**		**FY 2020 OCO**		**FY 2020 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**
TBD	SS/CPIF	TBD : TBD	-	-		-		5.448	Mar 2020	-		5.448	0.000	5.448	-
Subtotal			-	-		-		5.448		-		5.448	0.000	5.448	N/A

	Prior Years	FY 2018		FY 2019		**FY 2020 Base**		**FY 2020 OCO**		**FY 2020 Total**	**Cost To Complete**	**Total Cost**	**Target Value of Contract**
Project Cost Totals	-	-		0.000		5.448		-		5.448	0.000	5.448	N/A

<u>**Remarks**</u>
 Funding for FY19 moved from PE 677145, Project FD5 line to PE 677135, Project ES2. 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.

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army		Date: March 2019
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 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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
Contract Award																												

Exhibit R-4A, **RDT&E Schedule Details:** PB 2020 Army		**Date:** March 2019
Appropriation/Budget Activity 2040 *I* 7	**R-1 Program Element (Number/Name)** PE 0607145A *I Apache Future Development*	**Project (Number/Name)** FD5 *I Apache Product Improvement*

Schedule Details

Events	**Start**		**End**	
	Quarter	**Year**	**Quarter**	**Year**
Contract Award	3	2020	3	2022