Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army

Date: February 2015

Appropriation/Budget Activity

R-1 Program Element (Number/Name)

2040: Research, Development, Test & Evaluation, Army I BA 7: Operational

PE 0203744A I Aircraft Modifications/Product Improvement Programs

Systems Development

,												
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	227.333	-	-	-	-	-	-	-	-	Continuing	Continuing
430: Impr Cargo Helicopter	-	18.616	-	-	-	-	-	-	-	-	Continuing	Continuing
504: Black Hawk Recapitalization/Modernization	-	94.527	-	-	-	-	-	-	-	-	Continuing	Continuing
D17: Apache Block III	-	112.419	-	-	-	-	-	-	-	-	-	112.419
D18: Fixed Wing Aircraft	-	1.771	-	-	-	-	-	-	-	-	-	1.771

## A. Mission Description and Budget Item Justification

Prior to FY 2015, this PE funded budget requests for aviation development of modifications and improvements for the Improved Cargo Helicopter, the UH-60L Black Hawk Recapitalization/Modernization, Apache Block III, and Fixed Wing Aircraft.

B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	239.696	264.887	256.677	-	256.677
Current President's Budget	227.333	-	-	-	-
Total Adjustments	-12.363	-264.887	-256.677	-	-256.677
<ul> <li>Congressional General Reductions</li> </ul>	-	-			
<ul> <li>Congressional Directed Reductions</li> </ul>	-	-			
<ul> <li>Congressional Rescissions</li> </ul>	-	-			
<ul> <li>Congressional Adds</li> </ul>	-	-			
<ul> <li>Congressional Directed Transfers</li> </ul>	-	-			
<ul> <li>Reprogrammings</li> </ul>	-	-			
SBIR/STTR Transfer	-	-			
Adjustments to Budget Years	-12.363	-264.887	-256.677	-	-256.677

Exhibit R-2A, RDT&E Project Ju	xhibit R-2A, RDT&E Project Justification: PB 2016 Army									Date: February 2015		
Appropriation/Budget Activity 2040 / 7							<b>t (Number/</b> ft Modification Programs	•	Project (Number/Name) 430 / Impr Cargo Helicopter			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
430: Impr Cargo Helicopter	-	18.616	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

#### Note

PE 273744 Project Number 430 was realigned starting in FY 15 to new PE 0607137A Project Number ES4.

## A. Mission Description and Budget Item Justification

The CH-47 Chinook is the only heavy lift helicopter for the Army and is an essential element of the current Army Aviation master plan. This program funds improvements to the CH-47F System that include: T55-GA-714A engine control and component upgrades to increase power to support emerging 6K/95 requirements, continued development and testing of the Advanced Chinook Rotor Blades (ACRB) which will provide increased lift in high/hot conditions and reduce O&S costs. Production of the ACRB will begin in FY 2017. Funding also initiates advanced flight control and drive train component improvements to improve aircraft performance. Development of requirements specifications, studies and risk reduction prototyping are also part of this effort.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
Title: 714 Engine Component Improvement Program	9.685	-	-
<b>Description:</b> Included in the Engine Component Improvement Program are improvements that address improved performance, reduced maintenance burden for better maintainability for the Soldier, improved safety, and increased reliability leading to reduced O&S costs. Improvements include improved component designs/updates and electronic control unit software.			
FY 2014 Accomplishments: Included in the Engine Component Improvement Program are improvements that address increased maintainability, improved safety, and increased reliability leading to reduced O&S costs. Improvements include component design/updates and related component design and improved electronic control unit software.			
Title: Airframe Component Improvement Program	8.931	-	-
<b>Description:</b> Included in the Airframe Component Improvement Program are the continued development and flight testing of the Advanced Chinook Rotor Blade (ACRB) and development of advanced flight control and drive train components. The ACIP will also assess potential improvements to the fuel system and structural modifications for improved aircraft performance, aircraft weight reduction, and reduction of O&S costs.			
FY 2014 Accomplishments: Included in these efforts are development and testing of the Advanced Chinook Rotor Blade (ACRB) that will result in significant performance improvements such as providing approximately 1,975 lbs of additional lift, improving erosion protection, and reducing			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army	Date: February 2015		
ļ · · · ·	, ,	, ,	umber/Name) Cargo Helicopter

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
O&S costs. Funding continues airframe weight reductions and component development of advanced flight controls, drive train, rotor system, and fuel system to increase aircraft performance, reduce aircraft weight, and reduce O&S costs.			
Total system, and red system to increase airdraft performance, reduce airdraft weight, and reduce Oxo costs.			
Accomplishments/Planned Programs Subtotals	18.616	-	-

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

			FY 2016	FY 2016	FY 2016					<b>Cost To</b>	
<u>Line Item</u>	FY 2014	FY 2015	<u>Base</u>	OCO	<u>Total</u>	FY 2017	FY 2018	FY 2019	FY 2020	<b>Complete</b>	<b>Total Cost</b>
<ul> <li>AA0252: CH-47 CARGO</li> </ul>	91.064	-	-	-	-	-	-	-	-	Continuing	Continuing
HELICOPTER MODS											
<ul> <li>A05105: CH-47 SLEP</li> </ul>	639.021	-	-	-	-	-	-	-	-	Continuing	Continuing
(Including Adv Proc)											
<ul> <li>A05008: CH-47 CARGO</li> </ul>	290.005	-	-	-	-	-	-	-	-	Continuing	Continuing
HELICOPTER NEW BUILD											

#### Remarks

## D. Acquisition Strategy

The CH-47F program replaces one for one, the aging CH-47D aircraft by FY2020, incorporates a new machined airframe, and includes a new Common Avionics Architecture System (CAAS) cockpit with digital communication/navigation capability allowing improved interoperability on the digital battlefield. The CH-47F program includes recapitalization of key dynamic components, bringing them to a near zero time.

## E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army	Date: February 2015	
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
2040 / 7	PE 0203744A I Aircraft Modifications/	430 I Impr Cargo Helicopter
	Product Improvement Programs	

Product Development (\$ in Millions)			FY 2014		FY 2015			2016 ase	FY 2016 OCO		FY 2016 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	Total Cost	Target Value of Contract
714 Engine Component Improvement Program	SS/CPFF	Honeywell : Phoenix, AZ	10.521	6.403		-		-		-		-	Continuing	Continuing	Continuing
Airframe Component Improvement Program	SS/CPFF	Boeing : Ridley Park PA	105.261	12.213		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	115.782	18.616		-		-		-		-	-	-	-
			Drior					EV.	2016	EV	2016	EV 2016	Cost To	Total	Target

												Target
	Prior				FY 2	2016	FY 2	2016	FY 2016	Cost To	Total	Value of
	Years	FY 2014	FY	2015	Ba	ase	00	CO	Total	Complete	Cost	Contract
Project Cost Totals	115.782	18.616	-		-		-		-	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 A	Army			Date: February 2	015	
Appropriation/Budget Activity 2040 / 7		PE 0203744	n Element (Number/Name) A I Aircraft Modifications/ rovement Programs	Project (Number/Name) 430 / Impr Cargo Helicopter		
Event Name	FY 2014	FY 2015	FY 2016 FY 2017	FY 2018 FY 2019	FY 2020	
	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	
ull Rate Production			Full Rate Production			
			<b>I</b>	<del> </del>	<del> </del>	

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army	Date: February 2015		
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203744A I Aircraft Modifications/ Product Improvement Programs	, ,	umber/Name) Cargo Helicopter

# Schedule Details

	Sta	art	End					
Events	Quarter	Year	Quarter	Year				
Full Rate Production	2	2005	2	2020				

Exhibit R-2A, RDT&E Project Ju	xhibit R-2A, RDT&E Project Justification: PB 2016 Army													
Appropriation/Budget Activity 2040 / 7					PE 020374		i <b>t (Number</b> i ft Modificati Programs	umber/Nar k Hawk Red tion	n/					
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost		
504: Black Hawk Recapitalization/Modernization	-	94.527			-	Continu								
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-				

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

The H-60L Digital BLACK HAWK, 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.

This line has been moved to the new PE 677135 starting in FY15 and out.

The Improved Turbine Engine Program (ITEP) develops, tests, and qualifies the next generation turboshaft engine. The Improved Turbine Engine (ITE) replaces the existing T700 engine design originated in the 1970's and meets the operational requirement of 6K/95. The ITE will fit inside the existing engine bays of the Black Hawk and Apache Helicopters and provides a significant power enhancement of up to fifty percent (total of 3,000 shaft horsepower) with increased fuel efficiency. Additional benefits include improved design life, enhanced reliability, lower maintenance cost and restored capability lost due to aircraft weight growth, without increasing the logistics footprint. The program consists of system engineering and program management, detailed design engineering, design assurance, hardware manufacturing and testing, component and module level development and testing, system level testing and qualification, as well as integration into the airframe.

FY 2014 ITEP (\$79.880M) funds system engineering/program management, continuing component testing, and initial airframe integration efforts. All funding for ITEP for FY 2015 and beyond is located in Project Element (PE) 0203744A - Project EB1. FY 2014 UH-60V (\$17.3M) funded within PE 0203744A. Funds required for systems engineering/program management and preliminary hardware and software development leading to up to program readiness for preliminary design review

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
Title: ITEP	94.527	-	-
<b>Description:</b> Improved Turbine Engine Program (ITEP) - a multi-platform turbine engine improvement required across existing Army aircraft to fill the capability gaps for Army Aviation Operations.			
FY 2014 Accomplishments:			

UNCLASSIFIED
Page 7 of 25

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: F	ebruary 2015	5
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203744A I Aircraft Modifications/ Product Improvement Programs		<b>Name)</b> Recapitalizati	on/
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
Systems Engineering/Program Management requirements. Continue preparation for Milestone entry, development of contractor requirements package, inital airframe integration efforts and continued engine component testing.			
Accomplishments/Planned Programs Subtotals	94.527	-	-

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

			FY 2016	FY 2016	FY 2016					Cost To	
Line Item	FY 2014	FY 2015	<b>Base</b>	OCO	<u>Total</u>	FY 2017	FY 2018	FY 2019	FY 2020	<b>Complete</b>	<b>Total Cost</b>
• N/A: <i>N/A</i>	-	_	_	_	_	_	_	_	_		

#### Remarks

Due to UH-60V RDTE funding being moved to another line (PE 0607136 Project ES3) no other program funding is dependent on this PE line.

## D. Acquisition Strategy

The UH-60V program plans to leverage a Government-owned Government-operated (GOGO) facility to design, integrate and build 3 production representative aircraft. The GOGO facility uses a cost plus vehicle and will conduct full and open competition for the selection of the avionics solution provider.

#### E. Performance Metrics

N/A

Exhibit R-3, RDT&E		<b></b>	2016 Arm	/							1		February	2015	
Appropriation/Budge 2040 / 7	et Activity	<i>!</i>				PE 020	ogram Ele 3744A / A t Improve	Aircraft Mo	odificatior	•		t (Numbe lack Hawk nization	,	alization/	
Management Service	es (\$ in M	lillions)		FY 2	2014	FY:	2015		2016 ase		2016 CO	FY 2016 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	Total Cost	Target Value of Contract
ITEP SEPM - Organic	Various	PMO : Huntsville, AL	3.707	3.400	Dec 2013	-		-		-		-	Continuing	Continuing	Continuin
ITEP SEPM - Contractor	Various	TBD : TBD	2.131	2.400	Dec 2013	-		-		-		-	Continuing	Continuing	Continuin
ITEP SEPM - OGA	Various	PMO : Huntsville, AL	4.430	9.300	Dec 2013	-		-		-		-	Continuing	Continuing	Continuin
UH-60V Digital - Organic	TBD	Various : Various	0.983	-		-		-		-		-	-	0.983	-
UH-60V Digital - Contractor	TBD	Various : Various	0.243	-		-		-		-		-	-	0.243	-
		Subtotal	11.494	15.100		-		-		-		-	-	-	-
Product Developme	nt (\$ in M	illions)		FY 2	2014	FY:	2015		2016 ase		2016 CO	FY 2016 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	Total Cost	Target Value of Contract
UH-60V Digital Development Engineering	C/CPFF	AMRDEC PIF : Redstone Arsenal	7.014	14.647	Jul 2014	-		-		-		-	Continuing	Continuing	Continuin
ITEP Air Vehicle Integration	SS/IDIQ	Various : Various	0.000	15.000	Sep 2014	-		-		-		-	-	15.000	-
		Subtotal	7.014	29.647		-		-		-		-	-	-	-
Support (\$ in Million	s)			FY 2	2014	FY:	2015		2016 ase		2016 CO	FY 2016 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	Total Cost	Target Value of Contract
oost oategory item	\	AMSAA : Huntsville,	1.328	-		-		-		-		-	Continuing	Continuing	Continuin
ITEP Other OGA - AoA Development Support	Various	AL	ı						1			1	1	1	1
ITEP Other OGA - AoA	Various	Huntsville, AL : Huntsville, AL	12.160	-		-		-		-		-	-	12.160	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203744A I Aircraft Modifications/ Product Improvement Programs	, ,	umber/Name) k Hawk Recapitalization/ tion

Test and Evaluation	(\$ in Milli	ons)		FY	2014	FY:	2015		2016 ase		2016 CO	FY 2016 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	Total Cost	Target Value of Contract
AATD/AATE Testing Support	Various	Various : Various	12.700	49.780	Dec 2013	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	12.700	49.780		-		-		-		-	-	-	-
			Prior Years	FY	2014	FY:	2015		2016 ase		2016 CO	FY 2016 Total	Cost To	Total Cost	Target Value of Contract
		Project Cost Totals	44.696	94.527		-		-		-		-	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																						Da	ate:	: Fe	ebr	uar	y 20	)15			
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203744A I Aircraft Modifications/ Product Improvement Programs											tions/ 504 I Black Hawk Recapitalization/																			
Event Name		FY 2	014		FY	20	15		F	Y 2	201	6		FΥ	20	17			FΥ	20	18		FY 2019						Y 2	202	:0
	1			- 1	1 2	:  ;	3 4	4	1	2	3	4	1	2	3	3	4	1	2	3	3	4	1	2	:   ;	3	4	1	2	3	4
Improved Turbine Engine Program Systems Engineering/Program Mana	a Syste	ems i	Eng/Pg	JITI M	<b>lgmt</b>																										

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
2040 / 7	PE 0203744A I Aircraft Modifications/	504 I Black Hawk Recapitalization/
	Product Improvement Programs	Modernization

# Schedule Details

	St	art	Eı	nd
Events	Quarter	Year	Quarter	Year
Improved Turbine Engine Program Systems Engineering/Program Management	1	2012	4	2014

Exhibit R-2A, RDT&E Project Ju	stification	: PB 2016 A	Army							Date: Feb	ruary 2015	
Appropriation/Budget Activity 2040 / 7							ft Modificati	•	Project (Number/Name) D17 I Apache Block III			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
D17: Apache Block III	-	112.419	-	-	-	-	-	-	-	-	-	112.419
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

#### Note

For FY 2014 and prior, all funding for AH-64E was contained in PE 0203744A – Aircraft Modifications/Product Improvement Programs, Project 504. FY 2015 funding has moved from PE 273744, Project D17 to PE 677135, Project ES2.

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

The FY 2016 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, and Improved Diagnostics and Maintainability. 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.

Funds will also provide for the development, integration and testing of the Modernized Rocket Launcher (MRL) with digital launcher electronics.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
Title: Product Development	97.106	-	-
Description: Funding is provided for the following efforts by Boeing, Longbow Limited Liability (LBL), and Lockheed Martin.			
FY 2014 Accomplishments:  Development, Integration & Testing work associated with the planned remanufacture and new build of Apache aircraft in the AH-64E Lot 4-6 configuration (joint interoperability, crashworthy fuel tank kits, embedded diagnotics, communications, mission processor, and navigation upgrades) and to enhance operational capabilities. Risk reduction for Lot 6 CPD capabilities to include cognitive decision aiding, soldier radio waveform, modernized dayside assembly, modernized radio frequency interferometer, maritime targeting, and radar upgrades.  - Provides NRE for design of the Hydra Launcher Electronics Assembly for development of the MRL.			
Title: Support Costs	2.376	-	-

Datas Calamians 2015

112.419

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: ⊦	ebruary 2015	Ò		
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203744A I Aircraft Modifications/ Product Improvement Programs	• •	ject (Number/Name) I Apache Block III				
B. Accomplishments/Planned Programs (\$ in Millions)		FY:	2014	FY 2015	FY 2016		
<b>Description:</b> Funding is provided for the following effort.							
FY 2014 Accomplishments: GFE supporting Apache AH-64E tests.							
Title: Test and Evaluation			7.780	-	-		
<b>Description:</b> Funding is provided for Development Testing and Evaluation	ion and Operational Test and Evaluation.						
FY 2014 Accomplishments: Development, Test & Evaluation, Operational Testing. Government test	t oversight, test ranges, flight hour costs for MRL tes	sting.					
Title: Management Services			5.157	-	-		
Description: Funding is provided for the following effort.							

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

Payroll, TDY, Support Contractors, Matrix Support.

Fullish B OA BBTSE Businest Investigations BB 0040 America

		·	FY 2016	FY 2016	FY 2016					Cost To	
<u>Line Item</u>	FY 2014	FY 2015	<u>Base</u>	OCO	<u>Total</u>	FY 2017	FY 2018	FY 2019	FY 2020	<b>Complete</b>	<b>Total Cost</b>
<ul> <li>AA6605: AH-64 MODS</li> </ul>	48.487	-	-	-	-	-	-	-	-	-	48.487
• A05111: <i>AH-64 APACHE</i>	752.600	-	-	-	-	-	-	-	-	-	752.600

#### Remarks

## D. Acquisition Strategy

**BLOCK IIIA REMAN** 

FY 2014 Accomplishments:

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, is planned with options for Lot 4 and will continue to a total of 690 remanufactured and new build aircraft.

**UNCLASSIFIED** 

PE 0203744A: Aircraft Modifications/Product Improveme... Army Page 14 of 25

R-1 Line #174

**Accomplishments/Planned Programs Subtotals** 

UN	NCLASSIFIED		
Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203744A I Aircraft Modifications/ Product Improvement Programs		lumber/Name) che Block III
Training device concurrency will be maintained with each technical insertion. Firm Fixed Price (FFP) and include the Advance Procurement requirements.	The EMD effort is managed as Cost Reimburs	able. Produ	iction efforts will be awarded as
In FY13, FY14, and FY15 MRL NRE will encompass US Government (USG) of launcher, launcher fabrication, and launcher testing.	design of the Hydra Launcher Electronics Asso	embly (LEA)	, modification of the M261
In FY15-FY18, Apache AH-64E Development & Integration (D&I) Contract.			
Multi-year authority may be requested for the out years.			
E. Performance Metrics N/A			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army

Date: February 2015

Appropriation/Budget Activity 2040 / 7

R-1 Program Element (Number/Name)
PE 0203744A / Aircraft Modifications/ Product Improvement Programs

Project (Number/Name) D17 I Apache Block III

Management Service	es (\$ in M	illions)		FY 2	2014	FY:	2015		2016 ise		2016 CO	FY 2016 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	Total Cost	Target Value of Contract
Management Services (In- House, Travel, etc.)	MIPR	PMO AAH, Matrix Support, AMCOM Express : Redstone Arsenal, AL	1.272	5.157		-		-		-		-	-	6.429	-
Management Services (In- House, Travel, etc)	MIPR	PEO Missiles & Space, Matrix Support, AMCOM Express, SETA: Huntsville, AL	0.811	0.811		-		-		-		-	-	1.622	-
		Subtotal	2.083	5.968		-		-		-		-	-	8.051	-

Product Developmer	nt (\$ in Mi	illions)	FY 2	2014	FY 2	FY 2015		FY 2016 Base		FY 2016 OCO					
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	Total Cost	Target Value of Contract
The Boeing Company	SS/CPIF	Boeing Contracts : Mesa, AZ	214.700	83.246	Dec 2013	-		-		-		-	-	297.946	-
Longbow Limited Liability (LBL) Contracts	SS/CPIF	Longbow Limited Liability (LBL) Contracts : Orlando, FL and Baltimore, MD	16.182	6.000		-		-		-		-	-	22.182	-
Lockheed Martin	SS/CPIF	Lockheed Martin Contracts : Orlando, FL	0.470	-		-		-		-		-	-	0.470	-
Modernized Rocket Launcher Development - USG	MIPR	Various USG Activities : Various	6.860	6.598		-		-		-		-	-	13.458	-
Boeing - MRL Platform SW and Integration	SS/CPIF	Boeing Company : Mesa, AZ	0.760	0.451		-		-		-		-	-	1.211	-
		Subtotal	238.972	96.295		-		-		-		-	-	335.267	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army Date: February 2015 **Appropriation/Budget Activity** R-1 Program Element (Number/Name) Project (Number/Name) PE 0203744A I Aircraft Modifications/ D17 I Apache Block III 2040 / 7 Product Improvement Programs FY 2016 FY 2016 FY 2016 Support (\$ in Millions) FY 2014 FY 2015 Base oco Total Contract Target Method Performing Prior Award Award Award Award **Cost To** Total Value of **Cost Category Item** Date & Type Activity & Location **Years** Cost Cost Date Cost Date Cost Date Complete Cost Contract Cost Various Activities : **Program Support Activities** MIPR 21.653 2.376 24.029 Various Subtotal 21.653 2.376 24.029 FY 2016 FY 2016 FY 2016 Test and Evaluation (\$ in Millions) FY 2014 FY 2015 Base oco Total Contract Target Performing Method Prior Award Award Award Award **Cost To** Total Value of **Cost Category Item** & Type Activity & Location Years Cost Date Cost Date Cost Date Cost Date Cost Complete Cost Contract Operational Assessments, Various Activities: Test Integration Working MIPR 28.355 5.940 34.295 Various Group (TWIG), TEMP, etc. MRL Weapon Integration AMRDEC: Lab. LFT. Qual Test. & MIPR 0.230 2.070 Huntsville, AL, Yuma 1.840 **Test Working Group** Proving Grounds, AZ Subtotal 28.585 7.780 36.365 Target Prior FY 2016 FY 2016 FY 2016 Cost To Total Value of oco Years FY 2014 FY 2015 Base Total Complete Cost Contract

Remarks

291.293

**Project Cost Totals** 

112.419

403.712

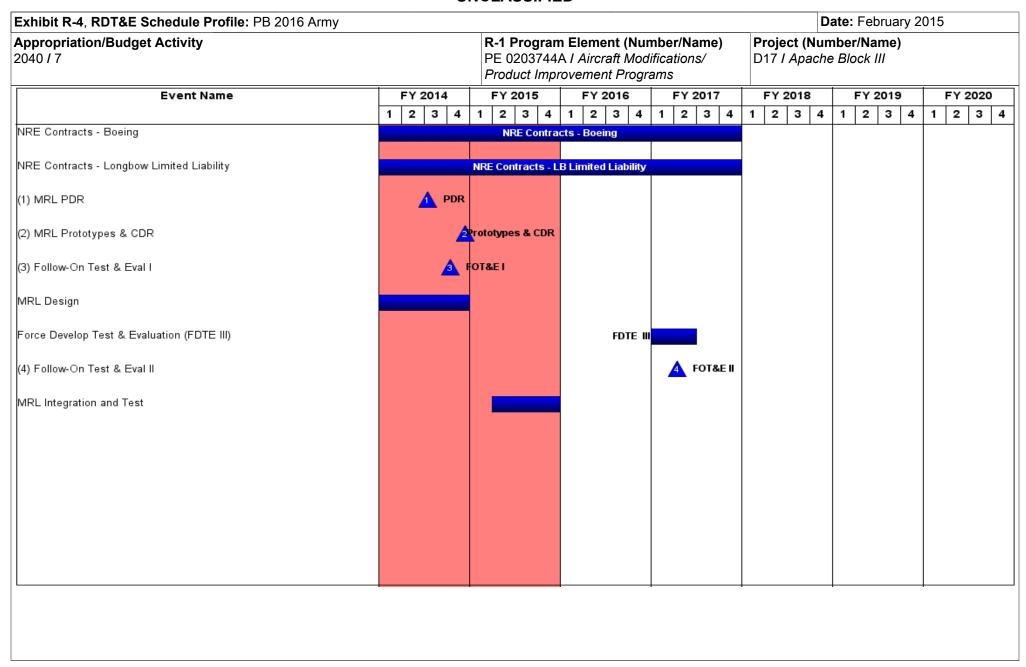


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
2040 / 7	1 3 1 1 1 1 1 1 1 1 1 1 1	- 3 (	umber/Name) che Block III

# Schedule Details

	St	art	E	nd
Events	Quarter	Year	Quarter	Year
NRE Contracts - Boeing	1	2011	4	2017
NRE Contracts - Longbow Limited Liability	1	2011	4	2017
MRL PDR	3	2014	3	2014
MRL Prototypes & CDR	4	2014	1	2015
Follow-On Test & Eval I	4	2014	4	2014
MRL Design	3	2013	4	2014
Force Develop Test & Evaluation (FDTE III)	1	2017	2	2017
Follow-On Test & Eval II	2	2017	2	2017
MRL Integration and Test	2	2015	4	2015

			-		T					
Appropriation/Budget Activity 2040 / 7	Activity				PE 020374	am Elemen 14A I Aircrai aprovement	ft Modificati	Project (Number/Name) D17 / Apache Block III		
Cost (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		
Program Termination Liability	-	112.419	-	-	-	-	-	-		

Exhibit R-2A, RDT&E Project Ju	stification	: PB 2016 <i>P</i>	Army							Date: Feb	ruary 2015	
Appropriation/Budget Activity 2040 / 7					PE 020374		i <b>t (Number</b> l ft Modificati Programs	,	Project (Number/Name) D18 / Fixed Wing Aircraft			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
D18: Fixed Wing Aircraft	-	1.771	-	-	-	-	-	-	-	-	-	1.771
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

#### Note

In FY 2015 funding moves to Program Element 607138.

## A. Mission Description and Budget Item Justification

The budget line provides for non-recurring engineering (NRE), development of supplemental type certificates and associated developmental testing, integration of all Army fixed wing aircraft to provide Communication, Navigation and Surveillance (CNS), Aircraft Survivability Equipment (ASE), and Department of Defense (DoD) mandated safety equipment to meet current and evolving international and Army standards.

Title: Non-recurring Engineering	1.723	-	-
<b>Description:</b> Non-recurring engineering efforts provide improved performance to Army fixed wing aircraft for communication, navigation, and surveillance equipment.			
FY 2014 Accomplishments:  Non-recurring engineering efforts provide improved performance to Army fixed wing aircraft for communication, navigation, and surveillance equipment.			
Title: Program Management	0.048	-	-
<b>Description:</b> Program Management of PM FW			
FY 2014 Accomplishments: Program Management of PM FW			
Accomplishments/Planned Programs Subtotals	1.771	-	-

	<b>7</b> \ \	<b>-</b>	FY 2016	FY 2016	FY 2016					Cost To	
<u>Line Item</u>	FY 2014	FY 2015	<b>Base</b>	OCO	<u>Total</u>	FY 2017	FY 2018	FY 2019	FY 2020	Complete	<b>Total Cost</b>
A11300: Utility Fixed Wing Aircraft	18.052	-	-	-	-	-	-	-	-	-	18.052
• AA0270: <i>Utility/</i>	11.500	-	-	-	-	-	-	-	-	_	11.500
Cargo Airplane Mods											

PE 0203744A: Aircraft Modifications/Product Improveme...

**UNCLASSIFIED** Page 21 of 25

R-1 Line #174

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army	Date: February 2015		
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (N	umber/Name)
2040 / 7	PE 0203744A I Aircraft Modifications/	ations/ D18 I Fixed Wing Aircraft	
	Product Improvement Programs		

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

 FY 2016
 FY 2016
 FY 2016
 FY 2017
 FY 2018
 FY 2019
 FY 2020
 Cost To

 Line Item
 FY 2014
 FY 2015
 Base
 OCO
 Total
 FY 2017
 FY 2018
 FY 2019
 FY 2020
 Complete
 Total Cost

#### Remarks

## D. Acquisition Strategy

The Army Fixed Wing acquisition and modernization strategy leverages commercial derivative aircraft through the use of supplemental type certificates (STC) and associated testing and includes modernization for civil and tactical upgrades of military unique equipment and integration of Intelligence, Surveillance and Reconnaissance (ISR) Mission Equipment Packages (MEP). Cockpit modernization upgrades include items such as dual Flight Management Systems, Terrain Area Warning Systems, transponder, Mode S/5 transponders, satellite communications, Traffic Alert and Collision Avoidance II, Flight Data Recorders, Cockpit Voice Recorders, communication radios, military Global Positioning System (GPS), Wide Area Augmentation System/Localizer Performance with Vertical Guidance, Automatic Dependence Surveillance Broadcast (ADS-B) Out, M-code GPS, Blue Force Tracker, and Smart books. ISR MEP upgrades include integration of multi-intelligence systems.

#### **E. Performance Metrics**

N/A

Exhibit R-3, RDT&E	Project C	ost Analysis: PB 2	2016 Army	y								Date:	February	2015	
Appropriation/Budge 2040 / 7	et Activity	1			R-1 Pro PE 020 Produc	(Number									
Management Services (\$ in Millions)			FY 2	2014	FY	2015		2016 ase		2016 CO	FY 2016 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	Total Cost	Target Value of Contract
Program Management Support	Various	PM Fixed Wing : Redstone Arsenal, AL	0.053	0.048	Dec 2013	-		-		-		-	Continuing	Continuing	Continuin
		Subtotal	0.053	0.048		-		-		-		-	-	-	-
Support (\$ in Million	s)			FY 2	2014	FY	2015		2016 ase	1	2016 CO	FY 2016 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	Total Cost	Target Value of Contract
Fixed Wing Non-recurring Engineering	Various	Various : Various	0.829	1.723		-		-		-		-	Continuing	Continuing	Continuin
		Subtotal	0.829	1.723		-		-		-		-	-	-	-
			Prior Years	FY 2	2014	FY	2015		2016 ase		2016 CO	FY 2016 Total	Cost To	Total Cost	Target Value of Contract
		Project Cost Totals	0.882	1.771		-		-		-		-	-	-	-

Remarks

						SIFIE																			
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Ar	my																	D	ate	: Fe	brua	ary 2	015		
Appropriation/Budget Activity 2040 / 7			R-1 Program Element (Number/Name) PE 0203744A I Aircraft Modifications/ Product Improvement Programs										)	Project (Number/Name) D18 I Fixed Wing Aircraft											
Event Name	FY 2014			FY 2015 FY 2016 F						FY 2017			FY 2018				FY 2019				FY 2020				
	1	2	3 4	1	2 3	3 4	1 2 3 4		4	1	2	2 3 4		1	2	3	4	1	2	3	4	1	2	3 4	
FW Non-recurring Engineering	FW Nor	ı-recur	ring Eng	ineeri	ng																				
1																									

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army	Date: February 2015		
	,		umber/Name) d Wing Aircraft

# Schedule Details

	St	art	End				
Events	Quarter	Year	Quarter	Year			
FW Non-recurring Engineering	1	2013	1	2015			