Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	121.084	149.469	280.247	-	280.247	337.363	354.663	311.992	291.466	Continuing	Continuing
430: *IMPR CARGO HELICOPTER*	10.509	48.862	71.563	-	71.563	61.453	59.188	43.830	44.569	Continuing	Continuing
504: *BLACK HAWK RECAPITALIZATION/ MODERNIZATION*	19.907	7.954	83.255	-	83.255	120.986	134.375	129.337	131.519	Continuing	Continuing
D17: *APACHE BLOCK III*	90.668	92.653	124.450	-	124.450	153.967	160.016	138.190	114.366	Continuing	Continuing
D18: *Fixed Wing Aircraft*	-	-	0.979	-	0.979	0.957	1.084	0.635	1.012	Continuing	Continuing

A. Mission Description and Budget Item Justification

FY 2011 budget request funds aviation development of modifications and improvements for the Guardrail Common Sensor/Aerial Common Sensor, the Improved Cargo Helicopter (ICH), the UH-60A/L Black Hawk Recapitalization/ Modernization.

B. Program Change Summary ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	134.999	163.205	256.600	-	256.600
Current President's Budget	121.084	149.469	280.247	-	280.247
Total Adjustments	-13.915	-13.736	23.647	-	23.647
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-	-	20.638	-	20.638
• Other Adjustments 2	-13.915	-13.736	3.009	-	3.009

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*	PROJECT 430: *IMPR CARGO HELICOPTER*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
430: *IMPR CARGO HELICOPTER*	10.509	48.862	71.563	-	71.563	61.453	59.188	43.830	44.569	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The CH-47 Chinook is a twin-turbine, tandem-rotor, heavy-lift transport helicopter with a useful load of up to 25,000 pounds. As the Army's only heavy lift helicopter, the CH-47 is an essential component of the Army Future Force. The CH-47F program fills the Army's Aviation Transformation Chinook requirement. This program funds improvements to the engines and airframe components. The T55-GA-714A engine improvements include a redesigned N1 drive line, a new torque system, and provides improvement to the engine control unit thru continuous software upgrades. The Airframe Component Improvement Program includes development of new rotor blades, drive train, aircraft power generation systems, and avionics solutions that will allow the Chinook to improve its performance by providing improved aircraft controls, increased payload capability, and advanced avionics capabilities. Early studies will be performed to identify largest areas of payback in fleet modernization.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: 714 Engine Component Improvement Program	2.400	5.500	5.955	-	5.955
Articles:	0	0			
Description: This funding supports the Engine Component Improvement Program and quality improvements that address safety, reliability, and readiness issues. Improvements include N1 Drive Line redesign, a new torque system, and improved electronic control unit software.					
FY 2011 Accomplishments: This funding continues to support the Engine Component Improvement Program and quality improvements that address safety, reliability, and readiness issues. Improvements include N1 Drive Line redesign and improved electronic control unit software.					
FY 2012 Plans: This funding will support the Engine Component Improvement Program and quality improvements that address safety, reliability, and readiness issues. Improvements include a new torque system and improved electronic control unit software.					
FY 2013 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
This funding supports the Engine Component Improvement Program and quality improvements that address safety, reliability, and readiness issues. Improvements include a new torque system and improved electronic control unit software.					
Title: Airframe Component Improvement Program ***Articles:*** ***Description:*** This funding supports airframe component improvement which includes development of new rotor blades that will result in significant performance improvement such as gaining an approximate 2000 lbs of lift, improving erosion protection, and reducing retreating blade stall. Develops an improved gun mount with double the ammunition capacity. Completes drive train improvement studies. Also funds the development of an advanced aircraft drive train improvement. ***FY 2011 Accomplishments:*** This funding provides development of new rotor blades that will result in significant performance improvement such as gaining an approximate 2000 lbs of lift, improving erosion protection, and reducing retreating blade stall. Continues development of the improved gun mount. ***FY 2012 Plans:*** This funding provides development of new rotor blades that will result in significant performance improvement such as gaining an approximate 2000 lbs of lift, improving erosion protection, and reducing retreating blade stall. Initiates drivetrain improvements to improve aircraft performance. Completes development and testing of the improved gun mount. ***FY 2013 Base Plans:*** This funding provides development of new rotor blades that will result in significant performance improvement such as gaining an approximate 2000 lbs of lift, improving erosion protection, and reducing retreating blade stall. Funds the continual development of an advanced aircraft drive train improvement.	7.625 0	41.035 0	62.200	-	62.200
Title: In-house and Program Management Administration ***Articles:*** ***Description:*** This funding provides support costs for various government agencies. ***FY 2011 Accomplishments:***	0.484 0	2.327 0	3.408	-	3.408

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
This funding will continue to provide support costs for various government agencies. ***FY 2012 Plans:*** This funding provides future support costs for various government agencies. ***FY 2013 Base Plans:*** This funding provides future support costs for various government agencies.					
Accomplishments/Planned Programs Subtotals	10.509	48.862	71.563	-	71.563

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• AA0252: *CH-47 CARGO HELICOPTER MODS (MYP) (Including Adv Proc and Initial Spares)*	66.207	79.712	38.633		38.633		61.183	84.428	480.214	6,612.220	7,595.341
• A05105: *CH-47 SLEP*	298.408	423.917	626.100		626.100		759.800	775.000	744.474	2,228.835	6,550.634
• A05008: *CH-47 CARGO HELICOPTER NEW BUILD (Including Adv Proc)*	860.641	936.399	518.400		518.400		154.700	398.900	518.329	0.000	3,608.469

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

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*	PROJECT 430: *IMPR CARGO HELICOPTER*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Rotary Wing Helicopter Crash Worthy Seating	Various	Boeing:Ridley Park PA	-	-		-		-		-	Continuing	Continuing	0.000
714 Engine Component Improvement Program	Various	Honeywell:Phoenix, AZ	2.400	5.500		5.955		-		5.955	Continuing	Continuing	Continuing
Airframe Component Improvement Program	Various	Boeing:Ridley Park PA	7.625	41.035		62.200		-		62.200	Continuing	Continuing	Continuing
		Subtotal	10.025	46.535		68.155		-		68.155			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO/OGA	Various	Various government:Redstone Arsenal AL	0.484	2.327		3.408		-		3.408	Continuing	Continuing	Continuing
		Subtotal	0.484	2.327		3.408		-		3.408			

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	10.509	48.862		71.563		-		71.563			

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012
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COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
504: *BLACK HAWK RECAPITALIZATION/ MODERNIZATION*	19.907	7.954	83.255	-	83.255	120.986	134.375	129.337	131.519	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The UH-60 Black Hawk is the workhorse of Army Aviation, flying more than 49% of the Army's annual flying hours. The system has been in production for over 30 years and provides a common platform with the versatility to perform multiple missions, ranging from air assault to command and control to medical evacuation/search and rescue. While the Black Hawk is the Army's newest helicopter, it was designed with a twenty-year service life. Today, two-fifths of the Army's Black Hawk fleet (721 aircraft) is comprised of H-60L aircraft with an average age of 13 years. The older H-60A models (918 aircraft) have an average age exceeding 23 years. To counter the older UH-60A's declining readiness rates, increased operations and support costs and to meet Future Force interoperability requirements, the Utility Helicopters Project Office established a program to replace existing UH-60 helicopters and provide capabilities needed on the future battlefield. The resulting configuration of the new UH-60M enhances the commander's ability to conduct non-linear, simultaneous, fully integrated operations in order to decisively mass the effects of the Army's warfighting assets. The UH-60M configuration provides digital connectivity for enhanced situational awareness and improved lift, range, deployability, and survivability to further increase the commander's ability to conduct operations across the entire spectrum of the battle space. An Operational Requirements Document (ORD) for recapitalization of the Black Hawk fleet was approved by the Joint Requirements Oversight Council (JROC) in March, 2001. The ORD described an evolutionary, block approach to transform the utility helicopter force to one that is more deployable, responsive, and less expensive to operate. A revised ORD was signed by the JROC on July 24, 2006, which updated key performance parameters for survivability and force protection. RDTE funds were required to develop, integrate, test and qualify the UH-60M Upgrade configuration. FY2005 funded the initial efforts to move the UH-60M program to an Upgrade configuration which included Fly-By-Wire (FBW) technology, Full Authority Digital Engine Control (FADEC) and the Common Avionics Architecture System (CAAS), which is the common cockpit to be used by UH-60M, CH-47 and Special Operations aircraft. Incorporation of CAAS will minimize future sustainment costs for these aircraft platforms. A successful UH-60M Upgrade IPR decision was obtained in January 2006. On May 18, 2007, the Office of the Secretary of Defense (OSD) Overarching Integrated Product Team (OIPT) approved the Army request for advanced procurement for seven UH-60M Upgrade aircraft and recommended a paper Defense Acquisition Board (DAB). On October 15, 2009, based on increasing demands for helicopters to support Army Force Generation Model (AFORGEN) requirements, the Configuration Steering Board (CSB) recommended a restructure of the UH-60 Modernization Program to the Defense Acquisition Executive (DAE). The recommendation included three parts: 1) produce UH-60M baseline aircraft only; 2) complete Development Test (DT) on FBW aircraft; and 3) migrate selected technologies from the upgrade development efforts to the baseline configuration. The recommendation was approved by the DAE on February 18, 2010, in a signed Acquisition Decision Memorandum (ADM). The ADM also directed the program to rebaseline.

The Improved Turbine Engine Program (ITEP) develops, tests and qualifies a nominal three thousand (3000) shaft horsepower (shp) class turboshaft engine with 25% better specific fuel consumption (SFC) as compared to other equivalent horsepower category engines. The engine will be designed to fit in the same engine envelope as a T700 engine for the Black Hawk and Apache aircraft. Other goals of the program are 65% greater horsepower to weight ratio, 35% less production and maintenance cost and 20% greater design life. The program consists of system engineering and program management, detailed design engineering, design assurance

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
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hardware manufacturing and testing, component and module level development and testing, system level testing and qualification, as well as, initial integration testing into the airframe.

The UH-60L Cockpit Digitization provides an integrated digital map, integrated performance planning, and commonality of hardware, software and training with UH-60M. Effectively, the UH-60L will have the same situational awareness as the UH-60M.

FY2013 funds ITEP Systems Engineering/Program Management Milestone Decision requirements, while FY2014 funds ITEP contract award and initial component design and fabrication. FY2013 also funds UH-60L Cockpit Digitization.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Fly-By-Wire Aircraft Development Testing ***Articles:*** ***Description:*** Supported the completion of the Fly-By-Wire technology. ***FY 2011 Accomplishments:*** Continued to fund Development Testing of Fly-By-Wire technology in a rotary wing flight environment.	19.907 0	-	-	-	-
Title: ITEP ***Articles:*** ***Description:*** 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 2012 Plans:*** Activity to support Material Development Decision (MDD), preparation for Milestone A entry, development of contractor requirements package, and support to Analysis of Alternatives (AoA). ***FY 2013 Base Plans:*** Systems Engineering/Program Management MS A requirements leading to contract award and initial component design and fabrication. Initial development contract award.	-	7.954 0	72.255	-	72.255
Title: UH-60L Cockpit Digitization ***Description:*** Three year program to upgrade UH-60L, digitization of cockpit. ***FY 2013 Base Plans:***	-	-	11.000	-	11.000

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Begin UH-60L cockpit digitation effort.					
Accomplishments/Planned Programs Subtotals	19.907	7.954	83.255	-	83.255

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• BLACK HAWK (MYP): *BLACK HAWK (MYP)*	1,391.598	1,597.447	1,346.760		1,346.760		1,237.183	1,456.871	1,549.788	Continuing	Continuing

D. Acquisition Strategy

The Utility Helicopters Project Manager Office (UH PMO) is planning and executing programs to acquire the capabilities described in the Operational Requirements Document (ORD) For Recapitalization Of The UH-60 Black Hawk Utility Helicopter Fleet. The ORD specifies a two block approach and cites firm requirements for both blocks of capability as well as a robust pre-planned product improvement (P3I) plan that includes the insertion of technology. To address the requirements in the ORD the Utility Helicopters Project Office developed a strategy that developed the UH-60M Baseline to meet the Block 1 requirements and initiated the development of the UH-60M Upgrade for technology insertion of Fly-By-Wire (FBW), Full Authority Digital Engine Control (FADEC), and Common Avionics Architecture System (CAAS). In February 2010, the Defense Acquisition Executive (DAE) supported an Army Configuration Steering Board (CSB) and Office of Secretary of Defense (OSD) Overarching Integrated Product Team (OIPT) recommendation to cease production of the UH-60M Upgrade integrated solution due to Army Force Generation (AFORGEN) requirements. Concurrence with this recommendation is captured in the 18 February 2010 Acquisition Decision Memorandum (ADM) directing the Army to rebaseline the UH-60 Modernization Program. The ADM directed the completion of the development and development test of the UH-60M Upgrade program, continued procurement of UH-60M aircraft, and migration of select technologies from the UH-60M Upgrade development to the UH-60M configuration. This migration does not include FBW or CAAS. As part of completing the development and development testing of the UH-60M Upgrade, the integration, qualification and testing will be documented and shelved awaiting a future decision directing production of UH-60M Upgrade. At the point the decision is made to restart the UH-60M Upgrade effort, the appropriate UH-60M acquisition and test documents will be updated.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army			DATE: February 2012
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ITEP SEPM - Core Organic	Various	PMO:Huntsville, AL	-	0.780		1.129		-		1.129	Continuing	Continuing	Continuing
ITEP SEPM - Core Contractor	Various	TBD:TBD	-	0.544		0.521		-		0.521	Continuing	Continuing	Continuing
ITEPSEPM - Marix Government	Various	PMO:Huntsville, AL	-	2.450		3.449		-		3.449	Continuing	Continuing	Continuing
ITEP SEPM - Marix Contractor	Various	TBD:TBD	-	0.088		0.091		-		0.091	Continuing	Continuing	Continuing
ITEP SEPM - OGA (AATD)	Various	TBD:Various	-	0.800		0.832		-		0.832	Continuing	Continuing	Continuing
ITEP SEPM - SSEB Support	Various	Various:Various	-	-		-		-		-	Continuing	Continuing	Continuing
ITEP OTHER	Various	TBD:Various	-	2.692		64.153		-		64.153	Continuing	Continuing	Continuing
		Subtotal	-	7.354		70.175		-		70.175			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Fly-By-Wire Aircraft Program	Various	TBD:TBD	19.907	-		-		-		-	Continuing	Continuing	Continuing
UH-60L Cockpit Digitization	C/CPAF	TBD:Various	-	-		11.000		-		11.000	Continuing	Continuing	Continuing
ITEP Development Engineering	Various	Various:Various	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	19.907	-		11.000		-		11.000			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ITEP Other OGA - AoA Development Support	Various	AMSAA:Huntsville, AL	-	0.600		2.080		-		2.080	Continuing	Continuing	Continuing
		Subtotal	-	0.600		2.080		-		2.080			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army		DATE: February 2012
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ITEP System Test & Evaluation	Various	Various:Various	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	-		-		-		-			

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	19.907	7.954		83.255		-		83.255			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
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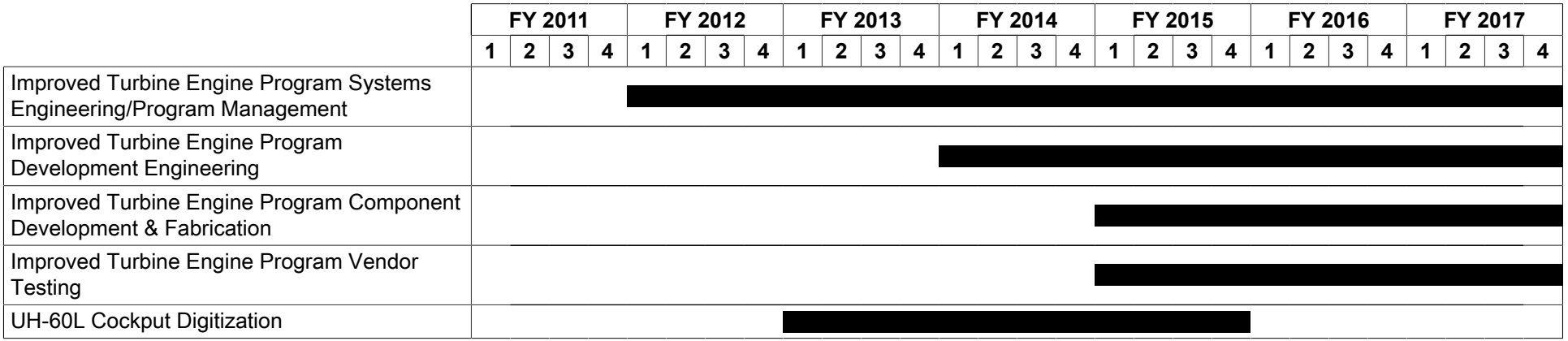

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Improved Turbine Engine Program Systems Engineering/Program Management	1	2012	4	2017
Improved Turbine Engine Program Development Engineering	1	2014	4	2017
Improved Turbine Engine Program Component Development & Fabrication	1	2015	4	2017
Improved Turbine Engine Program Vendor Testing	1	2015	4	2017
UH-60L Cockput Digitization	1	2013	4	2015

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012
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COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
D17: *APACHE BLOCK III*	90.668	92.653	124.450	-	124.450	153.967	160.016	138.190	114.366	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

Project D17, Apache Block III (AB3) funding is for the non-recurring engineering (NRE), development, and testing work associated with the planned remanufacture and new build of 690 Apache aircraft in the Block III configuration (deliveries began in Oct 2011). The AB3 program consists of two Major Defense Acquisition Programs (MDAP), AB3A Remanufacture and AB3B New Build. D17 program addresses obsolescence and reliability challenges as well as adds significant 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.

Funding also provides for the Modernized Rocket Launcher (MRL) to support the MIL-STD1760 digital AH-64D Apache and OH-58F Kiowa Warrior aircraft. MRL replaces the analog interface M260 and M261 Hydra-70 rocket launchers on Army Aviation aircraft that employ digital interfaces to address reliability shortcomings identified during combat missions. MRL is a fully-digitized launcher, which provides reduced weight, increased safety, reliability, flexibility, and improved accuracy and effectiveness while employing the Hydra-70 rocket system. MRL will eliminate weapon-unique aircraft equipment by providing a non-proprietary, open architecture standard MIL-STD-1760 interface and will improve reliability and maintainability through launcher and rocket Built-in-Test (BIT) and supports future growth.

FY2013 funding totals do not include any previously requested funding for current FY2013 Overseas Contingency Operations (OCO) requirements, and no FY2013 OCO funds have been previously requested in the RDTE Project D17.

FY2012 funding totals do not include any previously requested funding for current FY2012 Overseas Contingency Operations (OCO) requirements, and no FY2012 OCO funds have been previously requested in the RDTE Project D17.

FY2011 funding totals did not include any previously requested funding for current FY2011 Overseas Contingency Operations (OCO) requirements, and no FY2011 OCO funds have been previously requested in the RDTE Project D17.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Major Contracts	78.200	52.984	83.516	-	83.516

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*	PROJECT D17: *APACHE BLOCK III*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Articles:	0	0			
Description: Funding is provided for the following effort ***FY 2011 Accomplishments:*** Development & Testing work associated with the planned remanufacture and new build of Apache aircraft in the Block III Lot 1-3 configuration ***FY 2012 Plans:*** Development & Testing capabilities associated with planned remanufacture and new build of Apache aircraft for Block III Lot 4 & 6 configuration (joint interoperability, crashworthy fuel tanks, embedded diagnostics, communications, mission processor, and navigation upgrades). ***FY 2013 Base Plans:*** Development & Testing capabilities associated with planned remanufacture and new build of Apache aircraft for Block III Lot 4 & 6 configuration (joint interoperability, crashworthy fuel tanks, embedded diagnostics, communications, mission processor, and navigation upgrades).					
Title: Other Major Contracts	2.348	14.854	8.293	-	8.293
Articles:	0	0			
Description: Funding is provided for the following effort ***FY 2011 Accomplishments:*** Development & Testing associated with Block III Lot 1-3 aircraft. ***FY 2012 Plans:*** Development & Testing capabilities associated with Block III Lot 4 & 6 aircraft / future configurations that will enhance operational capabilities. ***FY 2013 Base Plans:*** Continue development & Testing capabilities associated with Block III Lot 4 & 6 aircraft / future configurations that will enhance operational capabilities. Follow on Development (RFI Passive Ranging, MTM, RFI Frequency Expansion). Prime contract to develop two (2) MRL configurations					
Title: Program Support Activities	3.320	11.471	20.460	-	20.460
Articles:	0	0			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*	PROJECT D17: *APACHE BLOCK III*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Description: Funding is provided for the following effort ***FY 2011 Accomplishments:*** GFE supporting AB3 tests ***FY 2012 Plans:*** GFE supporting AB3 tests ***FY 2013 Base Plans:*** GFE supporting AB3 tests					
Title: Government Participation, Operational Assessments ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2011 Accomplishments:*** Development Testing Operational T&E ***FY 2012 Plans:*** Development Testing Operational T&E ***FY 2013 Base Plans:*** Development Testing Operational T&E. Government test oversight, test ranges, flight hour costs for MRL testing.	6.800 0	12.855 0	10.596	-	10.596
Title: Management Services ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:*** Payroll, TDY, Support Contractors, Matrix Support ***FY 2013 Base Plans:*** Payroll, TDY, Support Contractors, Matrix Support	-	0.489 0	1.585	-	1.585
Accomplishments/Planned Programs Subtotals	90.668	92.653	124.450	-	124.450

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*	PROJECT D17: *APACHE BLOCK III*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• AH-64 MODS: *APA, SSN AA6606*	1,045.740	331.230	178.805		178.805		86.691	113.448	74.922	580.576	2,578.768
• AH-64 APACHE BLOCK IIIA REMAN: *APA, SSN A05111*	491.034	561.269	684.822		684.822		517.778	605.877	526.239	5,461.243	9,467.042
• AH-64 APACHE BLOCK IIIB NEW BUILD: *APA, SSN A05133*		104.263	300.114	71.000	371.114		385.147	95.643	391.868	0.000	1,823.271

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. The Low Rate Initial Production (LRIP) effort includes a total quantity of 51 aircraft, with deliveries completing in December 2013. These 51 LRIP aircraft will be used for operational testing, First Unit Equipped (FUE), and training base fielding.

In Oct 10, a contract for Apache Block III Lot 1 (8 aircraft) was awarded to initiate LRIP. Additional options for Lot 2a (16 aircraft), Lot 2b (19 aircraft) and Lot 2c (8 aircraft) are part of the LRIP Contract plan.

In early 2012, the existing Engineering Manufacturing Development (EMD) effort will be modified to incorporate development and testing to support the AB3 Lot 4 and Lot 6 production configurations.

In FY13, a contract for Apache Block III Lot 3, initiating Full Rate Production, will be awarded with options for Lot 4, Lot 5 and will continue to a total of 690 remanufactured and new build aircraft.

Training device concurrency will be maintained with each technical insertion. The EMD effort is managed as Cost Reimbursable. Production efforts will be awarded as Firm Fixed Price (FFP) and include the Advance Procurement requirements.

MRL Contract will be a full-and-open competition for launcher development. Government developed and controlled Performance Specification and Interface Control Documents will be used to ensure the MRL meets user requirements, utilizes open system architectures, addresses multi-service interoperability, provides a low-risk program, and supports future growth and integration for additional Hydra-70 digital platforms. Market research will be used to refine Government requirements and interfaces to ensure a robust, competitive environment. The request for proposal and ensuing proposal evaluations will emphasize Government data rights, technical data package delivery, and total life-cycle cost of the launcher as factors affecting contractor selection. This is emphasized to provide a best value solution to support the Soldier.

Multi-year authority may be requested for the out years.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*	PROJECT D17: *APACHE BLOCK III*

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*	PROJECT D17: *APACHE BLOCK III*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total 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	-	0.489		0.774		-		0.774	Continuing	Continuing	Continuing
Management Services (In-House, Travel, etc)	MIPR	PEO Missiles & Space, Matrix Support, AMCOM Express, SETA:Huntsville, AL	-	-		0.811		-		0.811	Continuing	Continuing	0.000
		Subtotal	-	0.489		1.585		-		1.585			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
The Boeing Company	SS/CPIF	Boeing Contracts:Mesa, AZ	78.200	52.984		83.516		-		83.516	Continuing	Continuing	Continuing
Longbow Limited Liability (LBL) Contracts	SS/CPIF	Longbow Limited Liability (LBL) Contracts:Orlando, FL and Baltimore, MD	2.348	14.854		1.810		-		1.810	Continuing	Continuing	Continuing
Lockheed Martin	SS/CPIF	Lockheed Martin Contracts:Orlando, FL	-	-		0.470		-		0.470	Continuing	Continuing	Continuing
Modernized Rocket Launcher Development - Prime	TBD	TBD:TBD	-	-		5.253		-		5.253	Continuing	Continuing	0.000
Boeing - MRL SW and Integration	TBD	Boeing Company:Mesa, AZ	-	-		0.760		-		0.760	Continuing	Continuing	0.000
		Subtotal	80.548	67.838		91.809		-		91.809			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*	PROJECT D17: *APACHE BLOCK III*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support Activities	MIPR	Various Activities:Various	3.320	11.471		20.460		-		20.460	Continuing	Continuing	Continuing
		Subtotal	3.320	11.471		20.460		-		20.460			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MRL Operational Assessments	MIPR	AMRDEC:Huntsville, AL, Yuma Proving Grounds, AZ	-	-		1.846		-		1.846	Continuing	Continuing	0.000
Operational Assessments, Test Integration Working Group (TWIG), TEMP, etc.	MIPR	Various Activities:Various	6.800	12.855		8.750		-		8.750	Continuing	Continuing	Continuing
		Subtotal	6.800	12.855		10.596		-		10.596			

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	90.668	92.653		124.450		-		124.450			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*	PROJECT D17: *APACHE BLOCK III*

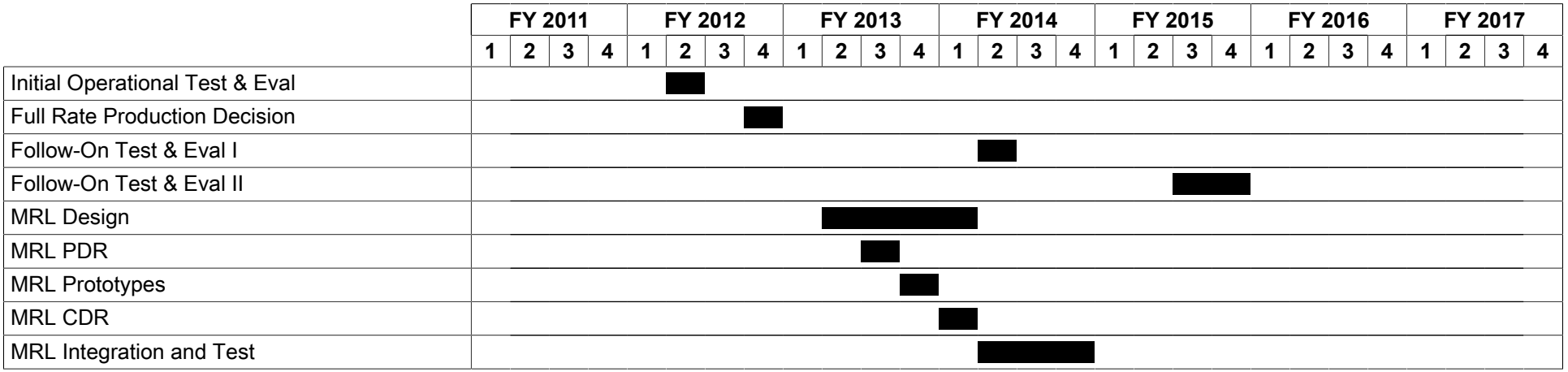

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0203744A: *Aircraft Modifications/Product Improvement Programs*	**PROJECT** D17: *APACHE BLOCK III*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Initial Operational Test & Eval	2	2012	2	2012
Full Rate Production Decision	4	2012	4	2012
Follow-On Test & Eval I	2	2014	2	2014
Follow-On Test & Eval II	3	2015	4	2015
MRL Design	2	2013	1	2014
MRL PDR	3	2013	3	2013
MRL Prototypes	4	2013	4	2013
MRL CDR	1	2014	1	2014
MRL Integration and Test	2	2014	4	2014

Exhibit R-5, RDT&E Termination Liability: PB 2013 Army							DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*			R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*			PROJECT D17: *APACHE BLOCK III*	
Cost ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**
Program Termination Liability	9.067	9.265	12.445	15.397	16.002	13.819	11.437

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*	PROJECT D18: *Fixed Wing Aircraft*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
D18: *Fixed Wing Aircraft*	-	-	0.979	-	0.979	0.957	1.084	0.635	1.012	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The budget line provides for Non-Recurring Engineering (NRE) and integration of all Army fixed wing aircraft such as C-31A, UV-18, UV-20, CE-182, CE-208, O-2, T-34, U-21, B-300, King Air 350, C-12, RC-12, UC-35, C-23, C-26, C-37, C-20, and EO-5 for aircraft communications, navigation, surveillance (CNS) and Department of Defense (DoD) mandated safety equipment to meet current and evolving international standards. FY13 Research, Development, Test, and Evaluation (RDT&E) dollars in the amount of $0.979 million provides funding for NRE of CNS equipment that meets current and future air traffic management requirements. The increased performance will permit the Army fixed wing aircraft to operate in compliance with other existing and emerging regulations. As requirements for new avionics equipment continue, aircraft delays and airspace exclusion are likely for aircraft not properly equipped. Upgrade of communication and navigation systems will improve aircraft performance and enhance reliability and maintainability, thereby improving aircraft availability for mission requirements. The associated aircraft modifications will assure worldwide deployability for those required to deploy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Non-recurring Engineering ***Description:*** Non-recurring engineering efforts provide improved performance to Army fixed wing aircraft for communication, navigation, and surveillance equipment. ***FY 2013 Base Plans:*** Initiate non-recurring engineering efforts in order to improve performance to Army fixed wing aircraft for communication, navigation, and surveillance equipment.	-	-	0.940	-	0.940
Title: Program Management ***Description:*** Program Management of PM FW ***FY 2013 Base Plans:*** Program Management of PM FW	-	-	0.039	-	0.039
Accomplishments/Planned Programs Subtotals	-	-	0.979	-	0.979

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*	PROJECT D18: *Fixed Wing Aircraft*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• AA0270: *AA0270 Utility/Cargo Airplane Mods*			24.842		24.842		15.167	22.612	23.833	0.000	115.351
• AA0703: *AA0703 GATM- Fixed Wing Aircraft*			17.179		17.179		12.569	19.063	19.065	0.000	82.448

D. Acquisition Strategy

The US Army Fixed Wing acquisition and modernization strategy leverages commercial derivative aircraft and includes cockpit modernization for civil and tactical upgrades of military unique equipment. These equipment upgrades include items such as dual Flight Management Systems, Terrain Area Warning Systems, AN/APX-119&123 transponder, Mode S/5 transponders, Satellite Communications, Traffic Alert and Collision Avoidance II, Flight Data Recorders, Cockpit Voice Recorders, AN/ARC-210/231 communication radios, TASMAN TA-24 military Global Positioning Sytem (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. The Research Development Test & Evaluation funding associated with this program provides for Non-Recurring Engineering and integration for installation of these required modernization efforts on Army fixed wing aircraft.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*	PROJECT D18: *Fixed Wing Aircraft*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	PM Fixed Wing:Redstone Arsenal, AL	-	-		0.039		-		0.039	Continuing	Continuing	Continuing
		Subtotal	-	-		0.039		-		0.039			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Fixed Wing Non-recurring Engineering	Various	Various:Various	-	-		0.940		-		0.940	Continuing	Continuing	Continuing
		Subtotal	-	-		0.940		-		0.940			

	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		0.979		-		0.979			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*	PROJECT D18: *Fixed Wing Aircraft*

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
FW Non-recurring Engineering																												

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203744A: *Aircraft Modifications/Product Improvement Programs*	PROJECT D18: *Fixed Wing Aircraft*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
FW Non-recurring Engineering	1	2013	4	2017