Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army											Date: February 2015	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0607137A / *Chinook Product Improvement Program*							
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	-	-	35.424	37.407	-	37.407	79.339	73.185	60.865	45.330	-	331.550
ES4: *Chinook Product Improvement Program*	-	-	35.424	37.407	-	37.407	79.339	73.185	60.865	45.330	-	331.550

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 2018. 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. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	35.424	37.407	-	37.407
Total Adjustments	-	35.424	37.407	-	37.407
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• PE & PROJECT 273744 430 realigned to 0607137A ES4	-	35.424	37.407	-	37.407

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 0607137A / *Chinook Product Improvement Program*	Project (Number/Name) ES4 / *Chinook Product Improvement Program*	

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
ES4: *Chinook Product Improvement Program*	-	-	35.424	37.407	-	37.407	79.339	73.185	60.865	45.330	-	331.550
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not applicable for this item.

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 2018. 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: Electronic Control Unit (ECU) Software Upgrade ***Description:*** This effort is to develop, generate, and qualify the latest software version of the T55-GA-714A Electronic Control Unit. Effort will correct any deficiencies noted in the field and/or incorporate upgrades as needed. ***FY 2015 Plans:*** This effort is to develop, generate, and qualify the latest software version of the T55-GA-714A Electronic Control Unit. Effort will correct any deficiencies noted in the field and/or incorporate upgrades as needed. ***FY 2016 Plans:*** This effort is to develop, generate, and qualify the latest software version of the T55-GA-714A Electronic Control Unit. Effort will correct any deficiencies noted in the field and/or incorporate upgrades as needed.	-	3.505	2.485
Title: Ratio Detector Power Supply (RDPS) ***Description:*** This effort will consist of design, development, and qualification of a replacement T55-GA-714A Engine Ratio Detector Power Supply (RDPS) and torque head to alleviate obsolescence issues with the current system. ***FY 2015 Plans:***	-	2.665	3.010

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 0607137A / *Chinook Product Improvement Program*	**Project (Number/Name)** ES4 / *Chinook Product Improvement Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
This effort will consist of design, development, and qualification of a replacement T55-GA-714A Engine Ratio Detector Power Supply (RDPS) and torque head to alleviate obsolescence issues with the current system. ***FY 2016 Plans:*** This effort will consist of design, development, and qualification of a replacement T55-GA-714A Engine Ratio Detector Power Supply (RDPS) and torque head to alleviate obsolescence issues with the current system.			
Title: Modernization Integration ***Description:*** The Modernization Integration effort is aimed at system engineering, associated programmatic activity, manufacturing and modification planning, integrated test planning, and associated logistics planning that will coordinate multiple independent engineering change proposals into a ground and flight test program. ***FY 2015 Plans:*** This effort provides the systems engineering approach to ensure successful integration of upgrades at the platform level to realize efficiencies and reduce costs. ***FY 2016 Plans:*** The Modernization Integration effort is aimed at system engineering, associated programmatic activity, manufacturing and modification planning, integrated test planning, and associated logistics planning that will coordinate multiple independent engineering change proposals into a ground and flight test program.	-	11.396	4.181
Title: Advanced Chinook Rotor Blade (ACRB) ***Description:*** This effort provides an Advanced Chinook Rotor Blade which is a redesign of the current rotor blade to provide increased hover lift in payload capability. It improves high/hot performance and is a Form, Fit, Function replacement for the legacy blade. ***FY 2015 Plans:*** This effort provides an Advanced Chinook Rotor Blade which is a redesign of the current rotor blade to provide increased hover lift in payload capability. It improves high/hot performance and is a Form, Fit, Function replacement for the legacy blade. ***FY 2016 Plans:*** This effort provides an Advanced Chinook Rotor Blade which is a redesign of the current rotor blade to provide increased hover lift in payload capability. It improves high/hot performance and is a Form, Fit, Function replacement for the legacy blade.	-	8.350	15.184
Title: Improved Drive Train	-	5.396	7.266

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 0607137A / *Chinook Product Improvement Program*	**Project (Number/Name)** ES4 / *Chinook Product Improvement Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Description: This effort addresses Operation and Support Cost reduction while simultaneously re-qualifying the combining, forward, and aft transmissions to a higher power level to utilize engine power available at sea-level conditions. The effort also supports the development of the MH-47 and CH-47 Active Parallel Actuator System effort that provides pilot tactical cueing and high accuracy torque measurement. Funding completes Preliminary Design Review and begins Phase II effort. ***FY 2015 Plans:*** The Improved Drive Train effort addresses Operation and Support cost reduction while simultaneously re-qualifying the combining, forward and aft transmissions to a higher power level to utilize engine power available at sea-level conditions. The effort also supports the development of the MH-47 and CH-47 Active Parallel Actuator System effort that provides pilot tactical cueing and high accuracy torque measurement. ***FY 2016 Plans:*** The Improved Drive Train effort addresses Operation and Support cost reduction while simultaneously re-qualifying the combining, forward and aft transmissions to a higher power level to utilize engine power available at sea-level conditions. The effort also supports the development of the MH-47 and CH-47 Active Parallel Actuator System effort that provides pilot tactical cueing and high accuracy torque measurement.			
Title: In-house and Program Management Administration ***Description:*** This funding provides support costs for various government agencies. ***FY 2015 Plans:*** This funding provides support costs for various government agencies. ***FY 2016 Plans:*** This funding provides support costs for various government agencies.	-	1.771	1.781
Title: Testing and Evaluation ***Description:*** This effort incorporates all testing requirements to integrate numerous Engineering Change Proposals (ECPs) into one system level requirement to include Advanced Chinook Rotor Blade (ACRB). ***FY 2015 Plans:*** This effort incorporates all testing requirements to integrate numerous Engineering Change Proposals (ECPs) into one system level requirement to include Advanced Chinook Rotor Blade (ACRB). ***FY 2016 Plans:***	-	2.341	3.500

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 0607137A / *Chinook Product Improvement Program*	**Project (Number/Name)** ES4 / *Chinook Product Improvement Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
This effort incorporates all testing requirements to integrate numerous Engineering Change Proposals (ECPs) into one system level requirement to include Advanced Chinook Rotor Blade (ACRB).			
Accomplishments/Planned Programs Subtotals	-	35.424	37.407

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• AA0252: *CH-47 CARGO HELICOPTER MODS*	91.064	32.092	86.330	-	86.330	103.672	144.866	90.339	90.582	Continuing	Continuing
• A05105: *CH-47 SLEP (Including Adv Proc)*	639.021	758.622	766.111	-	766.111	735.775	307.254	233.343	242.331	Continuing	Continuing
• A05008: *CH-47 CARGO HELICOPTER NEW BUILD*	290.005	236.243	357.820	-	357.820	0.197	268.764	-	-	-	1,153.029

Remarks

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.

D. Acquisition Strategy

N/A

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 0607137A / *Chinook Product Improvement Program*	Project (Number/Name) ES4 / *Chinook Product Improvement Program*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Electronic Control Unit (ECU) Software Upgrade	SS/CPFF	Honeywell : Phoenix, AZ	0.000	-		3.505	May 2015	2.485	Mar 2016	-		2.485	Continuing	Continuing	Continuing
Ratio Dectector Power Supply (RDPS)	SS/CPFF	Boeing Ridley : Park, PA	0.000	-		2.665	Jun 2015	3.010	Mar 2016	-		3.010	Continuing	Continuing	Continuing
Modernization Integration	SS/CPFF	Boeing Ridley : Park PA	0.000	-		11.396	May 2015	4.181	Mar 2016	-		4.181	Continuing	Continuing	Continuing
Advanced Chinook Rotor Blade (ACRB)	SS/CPFF	Boeing Ridley : Park PA	0.000	-		8.350	Jun 2015	15.184	Dec 2016	-		15.184	Continuing	Continuing	Continuing
Improved Drive Train	SS/CPFF	Boeing Ridley : Park, PA	0.000	-		5.396	May 2015	7.266	Jan 2016	-		7.266	Continuing	Continuing	Continuing
		Subtotal	0.000	-		31.312		32.126		-		32.126	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO/OGA	Various	Various Government : Redstone Arsenal AL	0.000	-		1.771	Mar 2015	1.781	Dec 2015	-		1.781	Continuing	Continuing	Continuing
		Subtotal	0.000	-		1.771		1.781		-		1.781	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing of configuration update ECPs to include the Advanced Chinook Rotor Blades	SS/CPFF	Boeing Ridley : Park PA	0.000	-		2.341	May 2015	3.500	Mar 2016	-		3.500	Continuing	Continuing	Continuing
		Subtotal	0.000	-		2.341		3.500		-		3.500	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army			Date: February 2015
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	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		35.424		37.407		-		37.407	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0607137A / *Chinook Product Improvement Program*	**Project (Number/Name)** ES4 / *Chinook Product Improvement Program*

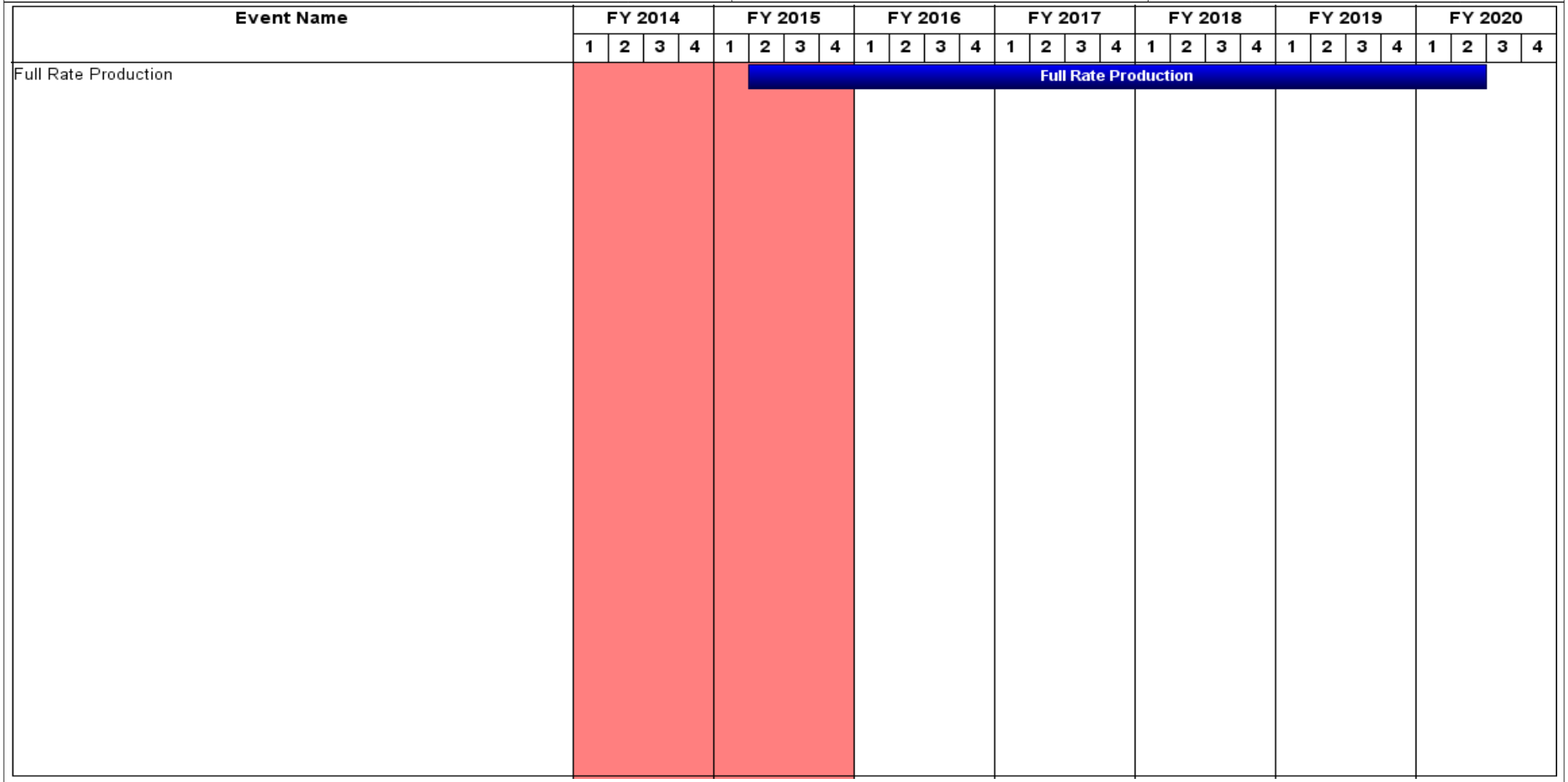

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0607137A / *Chinook Product Improvement Program*	**Project (Number/Name)** ES4 / *Chinook Product Improvement Program*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Full Rate Production	2	2015	2	2020