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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0401130F I C-17 Aircraft (IF)							
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	12.021	34.287	48.299	0.000	48.299	10.505	7.266	9.631	25.632	Continuing	Continuing
672569: C-17A Aircraft	-	12.021	34.287	48.299	0.000	48.299	10.505	7.266	9.631	25.632	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The C-17 can perform the entire spectrum of airlift missions and is specifically designed to operate effectively and efficiently in both strategic and theater environments. Airlift provides essential flexibility when responding to contingencies on short notice anywhere in the world. It is a major element of America's national security strategy and constitutes the most responsive means of meeting mobility requirements. Specific tasks associated with the airlift mission include deployment, employment, sustaining support, retrograde, and combat redeployment. Not only can the C-17 deliver outsize cargo to austere tactical environments, but it also reduces ground time during air/land operations. The C-17 will perform its airlift mission well into this century.

C-17 RDT&E funding efforts support, but are not limited to: Aircraft performance improvements and airspace access mandates (i.e., Communications/Navigation Improvements); flight test activities and facilities; development of solutions for obsolescence and safety of flight issues; systems engineering/program management administration support; support for avionics laboratories; software development, test and integration; block development/change management; proposal preparation for new projects; cost estimating and engineering/acquisition studies not related to requirements generation.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver C-17 weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.

In FY19 the efforts are: Roll-On Conference Capsule (ROCC), Fire Filter Mitigation, Beyond Line of Sight (BLOS), Real Time In Cockpit (RTIC), and Fixed Installation Satellite Antenna (FISA), which will be covered in more detail on subsequent pages.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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B. Program Change Summary (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget		12.430	34.287	49.547	0.000	49.547
Current President's Budget		12.021	34.287	48.299	0.000	48.299
Total Adjustments		-0.409	0.000	-1.248	0.000	-1.248
• Congressional General Reductions		0.000	0.000			
• Congressional Directed Reductions		0.000	0.000			
• Congressional Rescissions		0.000	0.000			
• Congressional Adds		0.000	0.000			
• Congressional Directed Transfers		0.000	0.000			
• Reprogrammings		0.000	0.000			
• SBIR/STTR Transfer		-0.409	0.000			
• Other Adjustments		0.000	0.000	-1.248	0.000	-1.248
Change Summary Explanation						
The FY19 reduction is due to program execution and inflation adjustments.						
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2017	FY 2018	FY 2019
Title: Replacement Heads-up Display				5.492	4.370	0.000
Description: The RHUD project develops, integrates and installs a new HUD providing supportability/improved reliability & maintainability while providing growth to support future planned capability improvements. RHUD was removed from the Common Configuration (CC) major thrust to allow management greater program visibility and oversight.						
FY 2018 Plans: Completes RHUD RDT&E effort. FY18 funds are for risk reduction support for second flight test and associated engineering design adjustments. Support for on-going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation are included in the overall program cost.						
FY 2019 Plans: RDT&E portion of the program completed in FY18						
FY 2018 to FY 2019 Increase/Decrease Statement: Funding decreased due to RDT&E portion of the program being completed in FY18.						
Title: Filter Fire Mitigation (formerly referred to as Onboard Inert Gas Generation System II Filter Fire)				-	-	0.862

UNCLASSIFIED

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019
Description: Filter Fire Mitigation is a program that redesigns the OBIGGS II shutoff valve and makes software changes to the Warning and Caution Computer (WCC). It includes support for on-going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation. FY 2019 Plans: Filter Fire program will be performing flight test in FY 2019. FY 2018 to FY 2019 Increase/Decrease Statement: Funding increased due to the development effort for Filter Fire being accomplished using FY 2016 funding. There was no FY 2017 or FY 2018 funding for this program and the FY 2019 funding is for flight test.				
Title: Beyond Line of Sight Description: Beyond Line-Of-Sight (BLOS) modernization modification is a development, integration, and retrofit program for C-17 communications. BLOS modifies and improves hardware and software for voice and data communications on the C-17. The program will modify both integrated aircraft avionics as well as back-end mission communications and could utilize both military and commercial satellite systems to extend communication ranges. The current efforts include but are not limited to Aero-I/Aero-H modernizations and Comm Mod. It includes support for on-going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation. FY 2018 Plans: BLOS efforts will include work on: Satellite communications; both Aero-I/Aero-H multi-channel voice and data upgrades; next-generation military GPS receiver (M-Code); upgrades for Ku/Ka band satellite communications; and upgrades to the ARC-210 radio. It will include support for on-going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation. FY 2019 Plans: In FY 2019, BLOS will be in the middle of development for the Aero I/H portion of the program and adding development for the Comm Mod portion. FY 2018 to FY 2019 Increase/Decrease Statement: Funding increased due to an updated bottoms up estimate that took into account changes to the acquisition schedule and updated pricing data.		6.529	16.592	38.750
Title: Roll-On Conference Capsule Description: ROCC is a program to replace current Silver Bullet Capsules and includes development/design. Effort will allow US Government senior leaders and staff to work, communicate, and rest in airworthy capsules during long range missions into threat		-	13.000	8.362

UNCLASSIFIED

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C. Accomplishments/Planned Programs (\$ in Millions) areas, with the protection of the C-17A Globemaster III's defensive systems capability. Specifically, the development phase of the ROCC, (formerly referred to as the Silver Bullet Replacement (SBR) program) will require non-recurring engineering, manufacture of the first article and testing. Support for flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation are included in the overall cost. FY 2018 Plans: ROCC development/design begins in FY18 and completes in FY20. It will include flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation. FY 2019 Plans: Continue development and testing for the ROCC program. FY 2018 to FY 2019 Increase/Decrease Statement: Funding decreased due to more up-front funding being needed given projected small business award.		FY 2017	FY 2018	FY 2019
Title: Real Time In Cockpit (RTIC) Description: RTIC Development of a Link-16 capability (air to air data transfer) and implementation/integration of upgraded ARC-210 radios. It includes support for on-going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation. FY 2018 Plans: RTIC Development of a Link-16 capability (air to air data transfer) and implementation/integration of upgraded ARC-210 radios. It includes support for on-going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation. FY 2019 Plans: Begin RTIC development effort including support for on-going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation.		-	0.125	0.125
Title: Fixed Installation Satellite Antenna (FISA) Description: FISA includes a SATCOM system which enables high bandwidth satellite communications, allowing for greater in flight situational awareness. It includes support for on-going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation. FY 2018 Plans:		-	0.200	0.200

UNCLASSIFIED

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C. Accomplishments/Planned Programs (\$ in Millions)								FY 2017	FY 2018	FY 2019	
Begin second-generation FISA development effort including support for on-going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation.											
FY 2019 Plans: Continue second-generation FISA development effort including support for on-going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation.											
Accomplishments/Planned Programs Subtotals								12.021	34.287	48.299	
D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• APAF 05 Line Item C01700: C-17A	17.455	152.372	102.121	-	102.121	129.637	99.740	96.030	97.775	Continuing	Continuing
• APAF 07 Line Item C01700: C-17A	83.859	12.028	10.114	-	10.114	0.000	0.000	0.001	0.000	0.000	106.002
• APAF 06 Line Item 000999: <i>Initial Spares/Repair Parts</i>	20.400	73.248	12.850	-	12.850	15.831	19.547	20.185	20.552	0.000	182.613
• APAF 03 Line Item 834070: <i>Mobility Command and Control</i>	-	-	-	-	-	10.817	-	-	-	0.000	10.817
Remarks											
E. Acquisition Strategy The C-17 Acquisition Strategy is based on several separate contracts to support the entire scope of the C-17 weapon system. Globemaster Operational Enhancement (GLOBE) is an indefinite delivery, indefinite quantity (IDIQ) contract used to purchase services and research articles (through delivery orders) to support all RDT&E with our prime contractor. In addition, purchase orders are used to support flight test activities within the projects at Edwards AFB. Additional contract vehicles could be utilized as required.											
F. Performance Metrics Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force												Date: February 2018			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0401130F / C-17 Aircraft (IF)				Project (Number/Name) 672569 / C-17A Aircraft					
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
C-17 RHUD- Replacement Heads Up Display	Various	Boeing : Long Beach, CA	-	5.492	Nov 2016	4.370	Nov 2017	-		-		-	Continuing	Continuing	23.983
C-17 Filter Fire Mitigation- (formerly referred to as Onboard Inert Gas Generating System II Filter Fire)	Various	Boeing : Long Beach, CA	-	-		-		0.862	May 2019	-		0.862	Continuing	Continuing	0.878
C-17 BLOS- Beyond Line of Sight	Various	Boeing : Long Beach, CA	-	6.529	Jul 2017	16.592	Aug 2018	22.282	Dec 2018	-		22.282	Continuing	Continuing	-
C-17 BLOS- Comm Mod	Various	Boeing : Long Beach, CA	-	-		-		16.468	Dec 2018	-		16.468	Continuing	Continuing	-
C-17 ROCC- Roll -On Conference Capsule (Formerly referred to as Silver Bullet Replacement)	C/FFP	Small Business : TBD	-	-		13.000	Nov 2018	8.362	Jun 2019	-		8.362	Continuing	Continuing	-
C-17 Real Time In Cockpit (RTIC)	C/TBD	TBD : TBD	-	-		0.125	Jun 2018	0.125	Jun 2019	-		0.125	Continuing	Continuing	-
C-17 Common Configuration- Fixed Installation Satellite Antenna (FISA)	Various	Boeing : Long Beach, CA	-	-		0.200	Jun 2018	0.200	Jun 2019	-		0.200	Continuing	Continuing	-
Subtotal			-	12.021		34.287		48.299		-		48.299	Continuing	Continuing	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	12.021		34.287		48.299		-		48.299	Continuing	Continuing	N/A
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force			Date: February 2018		
Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0401130F / C-17 Aircraft (IF)		Project (Number/Name) 672569 / C-17A Aircraft	

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
C-17																												
Beyond Line Of Sight (BLOS) (ACAT III)																												
- Aero-I/Aero-H																												
- Comm Mod																												
Filter Fire Mitigation (ACAT III) (formerly referred to as OBIGGS II Filter Fire- HW Fix)																												
RHUD (ACAT III)																												
Roll-On Conference Capsules (ROCC) (formerly referred to as Silver Bullet Replacement)																												
Real Time In Cockpit (RTIC)																												
Fixed Installation Satellite Antenna (FISA)																												
Studies and Modifications																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0401130F / C-17 Aircraft (IF)	Project (Number/Name) 672569 / C-17A Aircraft	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
C-17				
Beyond Line Of Sight (BLOS) (ACAT III)	4	2018	4	2021
- Aero-I/Aero-H	4	2018	4	2021
- Comm Mod	4	2018	4	2021
Filter Fire Mitigation (ACAT III) (formerly referred to as OBIGGS II Filter Fire- HW Fix)	2	2017	3	2019
RHUD (ACAT III)	1	2017	3	2018
Roll-On Conference Capsules (ROCC) (formerly referred to as Silver Bullet Replacement)	4	2018	4	2020
Real Time In Cockpit (RTIC)	3	2018	3	2019
Fixed Installation Satellite Antenna (FISA)	3	2018	3	2019
Studies and Modifications	1	2022	4	2023