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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force										Date: February 2019		
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	21.701	48.299	25.101	0.000	25.101	10.009	9.631	25.632	0.000	0.000	140.373
672569: C-17A Aircraft	-	21.701	48.299	25.101	0.000	25.101	10.009	9.631	25.632	0.000	0.000	140.373
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 Research, Development, Test & Evaluation (RDT&E) funding efforts support, but are not limited to: Aircraft performance improvements, aircraft mission execution 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 FY20 the efforts are: Roll-On Conference Capsule (ROCC)and Beyond Line of Sight (BLOS) which will be covered in more detail on subsequent pages.

This funding includes Rapid Global Mobility (RGM) platform-related rapid capability development process activities including early planning, analysis and systems engineering activities which provide linkages between operational needs, system performance requirements, technology needs and opportunities, potential lifecycle costs and enabling the technical foundation for material development.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget		34.287	48.299	10.505	0.000	10.505
Current President's Budget		21.701	48.299	25.101	0.000	25.101
Total Adjustments		-12.586	0.000	14.596	0.000	14.596
• Congressional General Reductions		0.000	0.000			
• Congressional Directed Reductions		-6.100	0.000			
• Congressional Rescissions		0.000	0.000			
• Congressional Adds		0.000	0.000			
• Congressional Directed Transfers		0.000	0.000			
• Reprogrammings		-5.640	0.000			
• SBIR/STTR Transfer		-0.846	0.000			
• Other Adjustments		0.000	0.000	14.596	0.000	14.596
Change Summary Explanation						
FY18 funding was reduced by \$6.1M for a Congressional mark for "Excess to need". \$5.64M was reprogrammed on the Omnibus. \$0.846M was reduced for SBIR transfer.						
FY20 funding was increased by \$14.6M for BLOS development and test.						
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2018	FY 2019	FY 2020
Title: Filter Fire Mitigation (formerly referred to as Onboard Inert Gas Generation System II Filter Fire)				0.000	0.862	-
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 2019 to FY 2020 Increase/Decrease Statement: No funding changes at this time						
Title: Replacement Heads-Up Display (RHUD)				4.380	0.000	-
Description: The RHUD project develops, integrates and installs a new Heads Up Display (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.						

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020
FY 2019 Plans: RDT&E portion of the program completed in FY18.				
FY 2019 to FY 2020 Increase/Decrease Statement: No funding changes				
Title: Beyond Line of Sight (BLOS) 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 2019 Plans: In FY 2019, BLOS effort continues with significant development activity occurring according to program schedule leading up to key program milestones. FY 2020 Plans: In FY 2020, BLOS effort continues with major design milestones occurring and continued development activities. FY 2019 to FY 2020 Increase/Decrease Statement: Funding stream based on scheduled tasks in current program schedule which reflects a shift in FY content.		12.288	38.750	19.530
Title: Roll-On Conference Capsule (ROCC) 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 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 2019 Plans:		5.033	8.687	5.571

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020
Significant development activities occur to include the start of contractor development, key milestones occurring and continued development efforts to support the build of the first article. FY 2020 Plans: Development activities begin to wind down with completion of design reviews and milestone testing. FY 2019 to FY 2020 Increase/Decrease Statement: Funding requirement decreased to reflect latest program schedule and the completion of the bulk of development activity in FY20.				
Title: Real Time In Cockpit (RTIC) Description: RTIC Development of an air to air data transfer capability 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: The RTIC requirement is now a non-development effort for C-17 and no longer requires FY19 R&D Funding FY 2020 Plans: None FY 2019 to FY 2020 Increase/Decrease Statement: The RTIC requirement is now a non-development effort for C-17 and no longer requires FY19 R&D Funding		0.000	0.000	0.000
Title: Fixed Installation Satellite Antenna (FISA) Description: FISA includes a Satellite Communication (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 2019 Plans: The FISA requirement is now a non-development effort for C-17 and no longer requires FY19 R&D Funding FY 2020 Plans: None FY 2019 to FY 2020 Increase/Decrease Statement: The FISA requirement is now a non-development effort for C-17 and no longer requires FY19 R&D Funding		0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals		21.701	48.299	25.101

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D. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• APAF 05 Line Item C01700: C-17A	96.352	77.221	60.244	-	60.244	104.403	96.030	108.331	79.508	0.000	622.089
• APAF 07 Line Item C01700: C-17A	12.028	10.105	124.805	-	124.805	0.000	0.000	0.000	-	0.000	146.938
• APAF 06 Line Item 000999: Initial Spares/Repair Parts	73.248	12.850	12.103	-	12.103	47.839	21.501	9.745	7.370	0.000	184.656
• OPAF 03 Line Item 834070: Mobility Command and Control	-	-	10.817	-	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 2020 Air Force												Date: February 2019			
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 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
C-17 RHUD- Replacement Heads up Display	Various	Boeing : Long Beach, CA	-	4.380	Nov 2016	-		-		-		-	Continuing	Continuing	-
C-17 Filter Fire Mitigation- (formerly referred to as Onboard Inert Gas Generating System II Filter Fire)	Various	Boeing : Long Beach, CA	-	-		0.862	Jul 2019	-		-		-	Continuing	Continuing	0.878
C-17 BLOS- Beyond Line of Sight	Various	Boeing : Long Beach, CA	-	11.963	Sep 2018	38.750	Dec 2018	19.530	Dec 2019	-		19.530	Continuing	Continuing	-
C-17 ROCC- Roll -On Conference Capsule (Formerly referred to as Silver Bullet Replacement)	C/Various	Small Business : TBD	-	5.033	Jun 2018	8.362	May 2019	5.571		-		5.571	Continuing	Continuing	-
C-17 Real Time In Cockpit (RTIC)	C/TBD	TBD : TBD	-	0.125		0.125	Jun 2019	-		-		-	Continuing	Continuing	-
C-17 Fixed Installation Satellite Antenna (FISA)	Various	Boeing : TBD	-	0.200		0.200	Jun 2019	-		-		-	Continuing	Continuing	-
Subtotal			-	21.701		48.299		25.101		-		25.101	Continuing	Continuing	N/A
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	21.701		48.299		25.101		-		25.101	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force	Date: February 2019
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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0401130F / C-17 Aircraft (IF)	Project (Number/Name) 672569 / C-17A Aircraft
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	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
C-17																												
Beyond Line of Sight (BLOS) (ACAT III)																												
Filter Fire Mitigation (ACAT III) (formerly referred to a OBIGGS II Filter Fire-HW Fix)																												
Roll-On Conference Capsules (ROCC) (formerly referred to as Silver Bullet Replacement)																												
Studies and Prototyping																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force		Date: February 2019
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
Filter Fire Mitigation (ACAT III) (formerly referred to a OBIGGS II Filter Fire-HW Fix)	1	2018	2	2020
Roll-On Conference Capsules (ROCC) (formerly referred to as Silver Bullet Replacement)	3	2018	4	2020
Studies and Prototyping	1	2018	4	2023