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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0401130F / <i>C-17 Aircraft (IF)</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	43.288	21.101	9.991	0.000	9.991	9.616	25.585	0.000	0.000	0.000	109.581
672569: <i>C-17A Aircraft</i>	-	43.288	21.101	9.991	0.000	9.991	9.616	25.585	0.000	0.000	0.000	109.581
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 element 0605831F.

In FY21 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.

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	48.299	25.101	10.009	0.000	10.009
Current President's Budget	43.288	21.101	9.991	0.000	9.991
Total Adjustments	-5.011	-4.000	-0.018	0.000	-0.018
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-4.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-3.296	0.000			
• SBIR/STTR Transfer	-1.715	0.000			
• Other Adjustments	0.000	0.000	-0.018	0.000	-0.018

Change Summary Explanation

FY19 funding reduced by \$3.296M for a below threshold reprogramming action and a \$1.715M reduction for Small Business Innovation Research (SBIR).

FY20 funding reduced by \$4.0M due to a congressional mark as "excess to need".

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
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Title: Filter Fire Mitigation (formerly referred to as Onboard Inert Gas Generation System II Filter Fire)	1.098	0.000	0.000
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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 2020 Plans:

N/A

FY 2021 Plans:

N/A

Title: Beyond Line of Sight (BLOS)	29.968	15.600	8.775
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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-

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
<p>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.</p> <p>FY 2020 Plans: BLOS effort continues with major design milestones occurring and continued development activities.</p> <p>FY 2021 Plans: BLOS effort continues with major design milestones occurring and completes development and test activities.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Funding decreased due to the level of effort for BLOS development efforts and test activities.</p>			
<p>Title: Roll-On Conference Capsule (ROCC)</p> <p>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.</p> <p>FY 2020 Plans: Development activities continue with design reviews and development testing.</p> <p>FY 2021 Plans: ROCC development effort completes in FY21. Funding of civilian manpower positions continue.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Funding decreased due to completion of ROCC development efforts in FY 2021; funding request to support other government costs to complete development process.</p>	12.222	5.501	1.216
Accomplishments/Planned Programs Subtotals	43.288	21.101	9.991

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• APAF 05 Line Item C01700: C-17A	70.679	46.874	59.663	-	59.663	85.441	73.783	48.254	102.612	0.000	487.306
• APAF 07 Line Item C01700: C-17A	10.114	124.805	0.000	-	0.000	0.000	0.000	-	-	0.000	134.919

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

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 06 Line Item 000999: <i>Initial Spares/Repair Parts</i>	11.175	12.103	47.774	-	47.774	21.479	9.731	7.361	30.760	0.000	140.383
• OPAF 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force **Date:** February 2020

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 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
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) (ACAT III)	
Studies and Prototyping	

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force **Date:** February 2020

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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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
C-17				
Beyond Line of Sight (BLOS) (ACAT III)	1	2019	4	2023
Filter Fire Mitigation (ACAT III) (formerly referred to a OBIGGS II Filter Fire-HW Fix)	2	2019	3	2020
Roll-On Conference Capsules (ROCC) (ACAT III)	3	2019	4	2021
Studies and Prototyping	1	2019	4	2023