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

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0208064F / <i>OPERATIONAL HQ - CYBER</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	-	0.000	7.602	5.527	0.000	5.527	2.263	2.303	14.781	0.000	Continuing	Continuing
676002: <i>Cyber Systems Modernization</i>	-	0.000	7.602	5.527	0.000	5.527	2.263	2.303	14.781	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Cyber Command and Control Mission System (C3MS) Mission Description: Provides the AFCYBER Commander with the tools necessary to effectively and efficiently plan, monitor, and execute missions in the cyber domain. This includes development and dissemination of Cyberspace Tasking Orders to ensure commander's intent is supported through the application of cyber forces using the latest intelligence. C3MS provides a common operational picture to maintain cyberspace threat activities and integrates cyberspace indications and warnings, analysis, and other actionable intelligence products into overall situational awareness, planning, and execution.

C3MS will continue modernization efforts based on a backlog of validated requirements to automate battle management capabilities and provide comprehensive cyber situational awareness. Developmental Activities include: machine-to-machine interfaces to dynamically interoperate with Air Operations Center (AOC) systems in order to quickly facilitate collaboration and mutual situational awareness; capabilities to present weapon system operators with force location, mission, effect, and linked information including a standardized, dynamic, map-based, situational awareness interface to display, manipulate, and manage units, missions, network elements, and effects; and multi-level security capabilities to support full-spectrum operations.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver C3MS weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F

In CY OPERATIONAL HQ - CYBER was a new start.

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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	
Previous President's Budget	0.000	7.602	5.537	0.000	5.537	
Current President's Budget	0.000	7.602	5.527	0.000	5.527	
Total Adjustments	0.000	0.000	-0.010	0.000	-0.010	
• 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	0.000	0.000				
• Other Adjustments	0.000	0.000	-0.010	0.000	-0.010	
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>				<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<b>Title:</b> Cyber Command and Control Mission System (C3MS) Modernization				0.000	7.602	5.527
<b>Description:</b> Perform development activities to automate processes and ingest & visualize data in support of Air Force specific cyber command and control requirements. Funding includes agile/continuous software development, test, and evaluation as well as support for architecture and modeling.						
<b>FY 2020 Plans:</b>						
- Develop automated battle management processes to define and provide cyber situational awareness to improve Air Force cyber command and control.						
- Develop multi-level security capabilities.						
- Develop man-to-machine interface to dynamically interoperate with Air Operations Center (AOC) systems.						
- Develop visualization tools for force location, mission, effect, and linked information.						
<b>FY 2021 Plans:</b>						
- Will continue development of automated battle management processes to define and provide cyber situational awareness to improve Air Force cyber command and control.						
- Will continue development of multi-level security capabilities.						

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2019	FY 2020	FY 2021
- Will continue development of man-to-machine interface to dynamically interoperate with Air Operations Center (AOC) systems.			
<b><i>FY 2020 to FY 2021 Increase/Decrease Statement:</i></b> Funding decreased from initial start up to stabilized software development activities.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	7.602	5.527

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<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 Complete</u>	<u>Total Cost</u>
• OPAF 03 831010: <i>Comsec Equipment</i>	11.705	5.113	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.818
• OPAF 03 834320: <i>C3 Countermeasures</i>	0.000	0.000	4.794	-	4.794	4.935	5.021	17.557	0.000	0.000	32.307

**Remarks**  
Beginning in FY21 associated OPAF realigned from COMSEC Equipment WSC to C3 Countermeasures WSC for clarity in reporting.

**E. Acquisition Strategy**  
The Cyber Command and Control Mission System (C3MS) weapon system program office will lead development of new capabilities to provide automated battle management capabilities to plan, monitor, and execute missions in the cyber domain. The program office will develop solutions based on a backlog of validated requirements. To meet these requirements, the C3MS program office will utilize various contractual vehicles when necessary, such as Government-Wide Acquisition Contract, Alliant, Encore II, Solutions for Enterprise-Wide Procurement IV, and General Services Administration Federal Supply Schedules, Network-Centric Solutions and competitive contract (if required). The use of multiple-award contractual vehicles will provide a wide range of commercially-available products and services that will be able to meet emerging requirements related to Air Force Cyber Command and Control.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0208064F / OPERATIONAL HQ - CYBER	<b>Project (Number/Name)</b> 676002 / Cyber Systems Modernization
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<b>Product Development (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
C3MS Software Development	Various	Multiple : Various	-	-		6.202	Jan 2020	4.211	Jan 2021	-		4.211	Continuing	Continuing	-
<b>Subtotal</b>			-	-		6.202		4.211		-		4.211	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
C3MS Architecture and Modeling Support	Various	FFRDC : JBSA	-	-		1.000	Jan 2020	1.000	Jan 2021	-		1.000	Continuing	Continuing	-
<b>Subtotal</b>			-	-		1.000		1.000		-		1.000	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
C3MS Software Test and Evaluation	Various	Multiple : Various	-	-		0.400	Apr 2020	0.316	Apr 2021	-		0.316	Continuing	Continuing	-
<b>Subtotal</b>			-	-		0.400		0.316		-		0.316	Continuing	Continuing	N/A

			Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	-	7.602	5.527	-	5.527	Continuing	Continuing	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2021 Air Force		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0208064F / OPERATIONAL HQ - CYBER	<b>Project (Number/Name)</b> 676002 / Cyber Systems Modernization

	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

<b>Automated Battle Management and Cyber SA</b>	
Architecture and Modeling Support	[REDACTED]
Software Development	[REDACTED]
Test and Evaluation	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Air Force		<b>Date:</b> February 2020
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Automated Battle Management and Cyber SA</i></b>				
Architecture and Modeling Support	2	2020	4	2025
Software Development	2	2020	4	2025
Test and Evaluation	3	2020	4	2025