

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification:** PB 2022 Air Force **Date:** May 2021

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technology Support</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	-	194.958	234.395	242.499	0.000	242.499	-	-	-	-	-	-
646008: <i>US Cyber Command Technology Development</i>	-	194.958	234.395	242.499	0.000	242.499	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY2020, elements of PE 0306250F, Cyber Operations Technology Development, Project Joint Common Services efforts were transferred to PE 0208097F, Joint Cyber Command and Control, in order to increase clarity and delineation from other activities.

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

US Cyber Command's (USCYBERCOM) mission is to deter or defeat strategic threats to US interests and infrastructure, provide mission assurance for the operations and defense of the Department of Defense information environment, and support the achievement of Joint Force Commander objectives.

USCYBERCOM in conjunction with the Services and National Agencies will develop and expand infrastructure architectures and capabilities/tools to support Cyber Mission Forces (CMF). Focus is on four broad program areas: Joint Common Services, Joint Access Platforms, Joint Weapons, and Joint Sensors.

The specific details and aspects of these cyber activities are classified and will be provided on a need-to-know basis. Please contact USCYBERCOM, 443-634-7769.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b><u>FY 2020</u></b>	<b><u>FY 2021</u></b>	<b><u>FY 2022 Base</u></b>	<b><u>FY 2022 OCO</u></b>	<b><u>FY 2022 Total</u></b>
Previous President's Budget	202.364	259.823	256.961	0.000	256.961
Current President's Budget	194.958	234.395	242.499	0.000	242.499
Total Adjustments	-7.406	-25.428	-14.462	0.000	-14.462
• Congressional General Reductions	0.000	-25.428			
• 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	-7.406	0.000			
• Other Adjustments	0.000	0.000	-14.462	0.000	-14.462

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**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 646008: *US Cyber Command Technology Development*  
 Congressional Add: *Cloud Communications Validation Pilot*

Congressional Add Subtotals for Project: 646008

Congressional Add Totals for all Projects

	FY 2020	FY 2021
	3.500	-
Congressional Add Subtotals for Project: 646008	3.500	-
Congressional Add Totals for all Projects	3.500	-

**C. Accomplishments/Planned Programs (\$ in Millions)**

**Title:** Joint Common Services

**Description:** Provides mission/business enabling IT infrastructures, business IT capabilities and life-cycle sustainment; supports internal mission/business operations for USCYBERCOM; and enables JCWA efforts across USCYBERCOM.

The origin, details, and specific aspects of these efforts are classified and will be provided on a need-to-know basis. Please contact USCYBERCOM, 443-479-2602.

**FY 2021 Plans:**  
 Continue the development of the JCWA as the common joint capability to enable split-based, offensive and defensive operations.

Continue development of USCYBERCOM cross-domain solutions that enable automated data flow from access platform to data repository and enable enrichment of data and reporting across security domains.

Continue development of technologies, policies, and processes needed to enable Intelligence and "indicator" sharing across the DODIN tiers and domains.

Provide enrichment of USCYBERCOM Title 10 data with additional Title 50 sources.

Drive standards and interoperability of JCWA.

Provide critical support to a developing and maturing Acquisition and Contracting entities and improve the efficiency and effectiveness of program management and acquisition processes.

Some aspects of the efforts are classified and will be provided on a need-to-know basis. For further information, please contact USCYBERCOM, 443-479-2602.

	FY 2020	FY 2021	FY 2022
	36.198	43.078	60.483

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>
<p>N/A</p> <p><b>FY 2022 Plans:</b>                      Will continue the development of the JCWA as the common joint capability to enable split-based, offensive and defensive operations. Continue sustainment of cyber operations capabilities in support of the CMF.</p> <p>Will continue development of USCYBERCOM cross-domain solutions that enable automated data flow from access platform to data repository and enable enrichment of data and reporting across security domains. Continue expansion, sustainment and compliance of fielded capabilities in support of cyber operations.</p> <p>Will continue development of technologies, policies, and processes needed to enable Intelligence and "indicator" sharing across the DODIN tiers and domains.</p> <p>Will continue to provide enrichment of USCYBERCOM Title 10 data with additional Title 50 sources.</p> <p>Will continue to drive standards and interoperability of JCWA.</p> <p>Will continue to provide critical support to a developing and maturing Acquisition and Contracting entities and improve the efficiency and effectiveness of program management and acquisition processes.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b>                      Funding increased due to program realignments from Joint Sensors to Joint Common Services related to Commercial Threat Data and Data Science Support Team efforts.</p>				
<p><b>Title:</b> Joint Access Platforms</p> <p><b>Description:</b> Delivers infrastructures and systems that enable access to networks through traditional and non-traditional means.</p> <p>The origin, details, and specific aspects of these efforts are classified and will be provided on a need-to-know basis. Please contact USCYBERCOM, 443-479-2602.</p> <p><b>FY 2021 Plans:</b>                      Continue development and deployment of on-net operations infrastructure.</p> <p>Continue to develop improvements for client/server platforms that delivers multiple mission-based cyber effects.</p>		61.495	60.199	48.055

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>
<p>Continue development of operational system that delivers distributed denial of service (DDoS) capabilities on the Department Of Defense Information Network (DODIN).</p> <p>Some aspects of the efforts are classified and will be provided on a need-to-know basis. For further information, please contact USCYBERCOM, 443-479-2602.</p> <p><b>FY 2022 Plans:</b> Will complete a technology refresh and upgrade of the Security Operations Center (SOC) to conduct advanced analytics of on-net operations infrastructure.</p> <p>Will continue to develop OpenCPI applications against strategic targets and expand the suite of supported hardware.</p> <p>Will scale the deployment of proven access enabling components across strategic target spaces and integrate resulting data feeds into Common Operating Pictures(s).</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> Funding decreased due transition from development to sustainment of cyber capabilities related to Missile Defense and Defeat Enhancement (MDDE) efforts.</p>				
<p><b>Title:</b> Joint Weapons</p> <p><b>Description:</b> Capabilities that are developed, tested, stored, and employed for cyberspace operations.</p> <p>The origin, details, and specific aspects of these efforts are classified and will be provided on a need-to-know basis. Please contact USCYBERCOM, 443-479-2602.</p> <p><b>FY 2021 Plans:</b> Continue to enhance and sustain exploitation frameworks supporting CMF operations based on evolving operations requirements.</p> <p>Continue the research, development, integration, and procurement of mission-focused exploit capabilities as a service to support CMF operations.</p> <p>Continue to update Personal Security Protection Testing Services to ensure they support current test needs.</p> <p>Continue to perform Operational Evaluation and Acceptance testing of Foundational Tools.</p>		87.026	116.287	116.351

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>
<p>Continue to develop and deliver additional foundational tools suites to incrementally achieve a full complement of required capabilities. The foundational tool suites will provide operational agility for CMF cyberspace operations.</p> <p>Continue to measure signatures on each spiral of delivered tools to verify uniqueness of tools.</p> <p>Continue to develop and deliver specialized tools and exploits to CMF.</p> <p>Some aspects of the efforts are classified and will be provided on a need to know basis. For further information, please contact USCYBERCOM, 443-479-2602.</p> <p><b>FY 2022 Plans:</b> Will continue to enhance and sustain common service exploitation frameworks supporting CMF operations based on evolving operational requirements.</p> <p>Will continue the research, development, integration, and procurement of mission-focused exploit capabilities as a common service to support CMF operations.</p> <p>Will continue to update Personal Security Protection Testing Services to ensure they support current test needs and facilitate delivered cyber weapons through operational acceptance.</p> <p>Will continue to perform Functional Acceptance Testing and deliver fully tested foundational cyber weapons into the Government's Development Evaluation (DE) and Operational Evaluation (OE) processes.</p> <p>Will continue to develop and deliver independently-tested foundational tools suites to incrementally achieve a full complement of required capabilities. The foundational tool suites will provide operational agility for CMF cyberspace operations.</p> <p>Will continue to measure signatures on each spiral of delivered tools to verify uniqueness of tools and diversity of source code.</p> <p>Will continue to develop and deliver specialized tools, exploits, and research to CMF that will enable access to "hard targets."</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> Funding increased due to inflationary adjustment.</p>				
<b>Title:</b> Joint Sensors		6.739	14.831	17.610

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>
<p><b>Description:</b> Development of capabilities to collect, process, analyze, and share data elements both on- and off-DoDIN environments. Includes both dynamically emplaced capabilities and static, enduring systems and applications.</p> <p>The origin, details and specific aspects of these efforts are classified and will be provided on a need-to-know basis. Please contact USCYBERCOM, 443-479-2602.</p> <p><b>FY 2021 Plans:</b> Continue development and sustainment of Advanced Frameworks and accompanying Data Analytics for cyber operations.</p> <p>Leverage findings of FY20 pilot activities to implement sensors, monitoring, and analytic capabilities to enable mission owners to rapidly gain situational awareness and direct defense of NC3 networks.</p> <p>Many aspects of the effort are classified and will be provided on a need-to-know basis. For further information, please contact USCYBERCOM at 443-479-2602.</p> <p><b>FY 2022 Plans:</b> Work towards consolidation of Advanced Frameworks for cyber operations, situational awareness, and risk assessment and mitigation into a multiple-purpose solution in Unified Platform.</p> <p>Incorporate new advanced risk management tool from research labs into risk assessment component of Unified Platform.</p> <p>Leverage new capabilities and analytics for countering malign influence campaigns to support operations in defense of 2022 midterm elections; document lessons learned.</p> <p>Implement automated anomaly detection and mitigation analytics for defense of critical DoD command and control communications infrastructures.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> Funding increased due to planned development of critical cyber defense capabilities in support of Nuclear Command, Control and Communications (NC3) networks.</p>				
<b>Accomplishments/Planned Programs Subtotals</b>		191.458	234.395	242.499
		<b>FY 2020</b>	<b>FY 2021</b>	
<b>Congressional Add:</b> Cloud Communications Validation Pilot		3.500	-	

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	<b>FY 2020</b>	<b>FY 2021</b>
<b>FY 2020 Accomplishments:</b> Funding acquires a capability to use transport layer identity management with non-interactive authentication at the first packet of a TCP/IP request to validate machine-to-machine communications. Such capability will "cloak" (i.e., render invisible) the existence of government networks and cloud deployments from our adversaries, while simultaneously authenticating the communication.		
<b>Congressional Adds Subtotals</b>	3.500	-

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

<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u> <u>Base</u>	<u>FY 2022</u> <u>OCO</u>	<u>FY 2022</u> <u>Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF 03 834320: C3 Countermeasures	-	11.986	9.981	-	9.981	-	-	-	-	-	-

**Remarks**

**E. Acquisition Strategy**

Facilitate the delivery of technology capabilities to the Cyber Mission Forces, by applying innovative solutions for existing and emerging technologies. Contracts are awarded under full and open competition whenever possible. Variations of both Fixed Price (FP) and Cost Plus (CP) contracting vehicles and the use of Other Transactional Authority (OTA) will be implemented leveraging USCYBERCOM Acquisition authorities. USCYBERCOM will also rely on various Service Component, Combatant Command and National Security Agency contracting offices for procurement of cyber capabilities and contractor support.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force** **Date:** May 2021

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technol ogy Support</i>	<b>Project (Number/Name)</b> 646008 / <i>US Cyber Command Technology Development</i>
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<b>Product Development (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
Product Development	C/Various	Not specified. : NV	-	0.000		0.000		0.000		-		0.000	-	-	-
Joint Common Services	Various	Multiple Agencies : Various	-	35.607	Jan 2020	42.122	Apr 2021	59.202	Apr 2022	-		59.202	-	-	-
Joint Access Platforms	Various	Multiple Agencies : Various	-	60.491	Jan 2020	58.863	Apr 2021	47.037	Apr 2022	-		47.037	-	-	-
Joint Tools	Various	Multiple Agencies : Various	-	85.606	Jan 2020	113.706	Apr 2021	113.886	Apr 2022	-		113.886	-	-	-
Joint Sensors	Various	Multiple Agencies : Various	-	6.629	Jan 2020	14.502	Apr 2021	17.237	Apr 2022	-		17.237	-	-	-
Cloud Communication Validation Pilot	TBD	TBD : TBD	-	3.500	Dec 2020	-		-		-		-	-	-	-
<b>Subtotal</b>			-	191.833		229.193		237.362		-		237.362	-	-	N/A

<b>Management Services (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
Management Services	C/CPAF	Not specified. : TBD	-	0.000		0.000		0.000		-		0.000	-	-	-
PMA	Various	Various : Various	-	3.125	Jan 2020	5.202	Apr 2021	5.137	Apr 2022	-		5.137	-	-	-
<b>Subtotal</b>			-	3.125		5.202		5.137		-		5.137	-	-	N/A

			Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	194.958	234.395	242.499	-	242.499	-	-	N/A

**Remarks**



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2022 Air Force		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technology Support</i>	<b>Project (Number/Name)</b> 646008 / <i>US Cyber Command Technology Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Cyber Operations Technology Development</i></b>				
Scalable resilient infrastructure (Joint Common Services)	1	2020	4	2022
CYBERCOM access platform build out capacity (Joint Access Platforms)	1	2020	4	2022
Mission-based platform FOC (Joint Access Platforms)	1	2020	3	2022
DDoS for DODIN spiral development (Joint Access Platforms)	1	2020	4	2022
Cyber UCAP spiral development - 1 (Joint Weapons)	3	2020	2	2021
Exploitation framework spiral development (annual) - (Joint Weapons)	1	2020	4	2022
Foundational tool suites (spirals annual) (Joint Weapons)	1	2020	4	2022
Analytics development (Joint Sensors)	1	2020	4	2022
Cloud Communication Validation Pilot	1	2021	2	2022