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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2023 Air Force **Date:** April 2022

<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 0304369F / <i>Cyber Capabilities Support Office (CCSO)</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	19.964	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
646008: <i>US Cyber Command Technology Development</i>	-	19.964	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

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

Mission Description.

The Cyber Capabilities Support Office (CCSO) within the Air Force Concepts, Development, and Management (SAF/CDM) Office is partnered with the New Mexico Institute of Mining and Technology (NMT) to develop the Playas Training and Research Environment (PTRE) at the NMT. This team will: develop a vision and strategy for Multi Domain Operations at the PTRE, facilitate build-out of a research and experimentation environment supporting evaluation and development of Full-Spectrum Multi-Domain Operations from Cyber, Cognitive, Supervisory control and data acquisition (SCADA), to include Terrestrial and airspace through space domains. The development team will also design and develop an "Operator in the Loop" research methodology enabling researchers to evaluate research hypotheses via access to operational platforms to simultaneously conduct integrated training and exercise events. Additionally, the team will establish and re-engineer business processes and usher programs/projects from conceptualization through transition to operational and Service components. Detachment (Det) 1, HQ 55th Wing (WG) provides Information Warfare integration and organizational oversight for operations, training, and infrastructure build-up of PTRE.

Budget Item Justification

The NMT in conjunction with the Cyber Capabilities Support Office, and Det 1 HQ 55th Wing is developing an environment at the Playas Training and Research Environment (PTRE) to advance DoD Information Dominance capabilities and effectiveness in support of the National Defense Strategy by replicating a multi-domain, information warfare combat environment for simultaneous operations, cyber enabled kinetic operations, or physically enabled cyber operations, while reducing the research-to-operational fielding timeline.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program 0304369F. In PY \$0.0448 M was expended for civilian pay expenses in this program element, and in CY \$0.1796 M is forecasted for civilian pay expenses in this program element

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.

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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	19.964	0.000	0.000	0.000	0.000
Total Adjustments	19.964	0.000	0.000	0.000	0.000
• Congressional General Reductions	-0.036	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	20.000	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	0.000	0.000	0.000

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

**Project:** 646008: *US Cyber Command Technology Development*

Congressional Add: *U Cyber Command Technology Development*

	<b>FY 2021</b>	<b>FY 2022</b>
	19.964	0.000
Congressional Add Subtotals for Project: 646008	19.964	0.000
Congressional Add Totals for all Projects	19.964	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Air Force										<b>Date:</b> April 2022		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0304369F / <i>Cyber Capabilities Support Office (CCSO)</i>				<b>Project (Number/Name)</b> 646008 / <i>US Cyber Command Technology Development</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
646008: <i>US Cyber Command Technology Development</i>	-	19.964	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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Budget Item Justification

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

<b>Congressional Add:</b> U Cyber Command Technology Development	<b>FY 2021</b>	<b>FY 2022</b>
	19.964	0.000
<b>FY 2021 Accomplishments:</b> Developed a vision and strategy for Multi Domain Operations at the Playas Training and Research Environment (PTRE)		
- Facilitated the build-out of a research and experimentation environment that supports evaluation and development of Full-Spectrum Multi-Domain Operations, from Cyber, Cognitive, Supervisory control and data acquisition (SCADA), Terrestrial, Airspace through Space domains		

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Air Force	<b>Date:</b> April 2022
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0304369F / <i>Cyber Capabilities Support Office (CCSO)</i>	<b>Project (Number/Name)</b> 646008 / <i>US Cyber Command Technology Development</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>
<ul style="list-style-type: none"> <li>- Developing an "Operator in the Loop" research methodology that enables researchers to evaluate research hypotheses utilizing access to operational platforms to simultaneously develop and conduct integrated training and exercise events</li> <li>- Establishing and re-engineering business processes, ushering programs/projects from conceptualization through transition to operational and Service components</li> </ul> <p><b>FY 2022 Plans:</b> N/A</p>		
<b>Congressional Adds Subtotals</b>	19.964	0.000

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**

The Cyber Capabilities Support Office utilizes a tailorable acquisition strategy that facilitates rapid delivery of material and non-material solutions to solve operational Offensive Cyber Operations requirements. This approach allows flexibility for solutions to enter the acquisitions process at any phase of the acquisition life cycle. All plans contain sufficient information for the Milestone Decision Authority to determine readiness to enter into the applicable phase of the acquisition process. CCSO, in conjunction with the Air Force Research Lab (AFRL) and the New Mexico Institute of Mining and Technology (NMT), provides the direction, equipment, research and development, developmental testing, operational test and evaluation, necessary facilities, legal and associated costs supporting cyber innovation leveraging cyber kinetic combat environment funding. In FY21 funds primarily utilize the Playas Electronic Attack & Cyber Environment (PEACE) contract held by AFRL. The PEACE contract provides acquisition of the infrastructure, material and services necessary to implement the strategic vision and assist in the transition of operations to ACC in FY23. In addition, GSA contracts will provide MAJCOM Liaison, SME Program Management Support and SME SETA support.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force												Date: April 2022			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 4				PE 0304369F / Cyber Capabilities Support Office (CCSO)				646008 / US Cyber Command Technology Development							
Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Develop vision and strategy; build-out of a research and experimentation environment; Develop "Operator in the Loop" research methodology; Establish and re-engineer business processes	SS/ Various	New Mexico Tech : NM	-	16.309	Apr 2021	-		-		-		-	0.000	16.309	16,877.000
<b>Subtotal</b>			-	16.309		-		-		-		-	0.000	16.309	N/A
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Air Combat Command Liaison ,Subject Matter Expert Program Support - Smartronix 47QFCA19F0003	C/CPAF	Smartronic : California, MD	-	1.877	May 2021	-		-		-		-	0.000	1.877	1,877.000
Systems Engineering and Technical Assistance (SETA) Support - GSA Noblis 47QFNA19F0075	SS/CPAF	Noblis : Reston, VA	-	0.370	Sep 2021	-		-		-		-	0.000	0.370	0.370
Information Warfare integration and organizational oversight for operations, training, and infrastructure build-up the PTRE - Detachment (Det) 1, HQ 55th Wing (WG)	MIPR	USAF 55 Wing : Offutt, NE	-	0.250	Jun 2022	-		-		-		-	0.000	0.250	0.250
Intergovernmental Personnel Act (IPA) support from UMD Applied Research Laboratory for	SS/FP	UMD ARLIS : Baltimore, MD	-	0.318	Jun 2021	-		-		-		-	0.000	0.318	0.318



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2023 Air Force		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0304369F / <i>Cyber Capabilities Support Office (CCSO)</i>	<b>Project (Number/Name)</b> 646008 / <i>US Cyber Command Technology Development</i>

FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
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><i>Cyber Kinetic Combat Environment</i></b>	
Develop a vision and strategy for Multi Domain Operations at the Playas Training and Research Environment (PTRE)	████████████████████
Facilitate the build-out of a research and experimentation environment	████████████████████
Develop an "Operator in the Loop research methodology	████████████████████
Establishing and re-engineering business processes	████████████████████

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2023 Air Force		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0304369F / <i>Cyber Capabilities Support Office (CCSO)</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 Kinetic Combat Environment</i></b>				
Develop a vision and strategy for Multi Domain Operations at the Playas Training and Research Environment (PTRE)	3	2021	4	2022
Facilitate the build-out of a research and experimentation environment	3	2021	4	2022
Develop an "Operator in the Loop research methodology	3	2021	4	2022
Establishing and re-engineering business processes	3	2021	4	2022