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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Army **Date:** March 2024

<b>Appropriation/Budget Activity</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305251A / <i>Cyberspace Operations Forces and Force Support</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	55.599	-	2.270	-	2.270	2.142	1.984	1.931	1.981	0.000	65.907
DD3: <i>Joint Cyber Warfighting Architecture Cyber Train</i>	-	55.599	-	-	-	-	-	-	-	-	0.000	55.599
FA8: <i>Cyberspace Operations Forces and Force Support</i>	-	-	-	2.270	-	2.270	2.142	1.984	1.931	1.981	0.000	10.308

**Note**

Project FA8 / Cyberspace Operations Forces and Force Support is a new start within the Cyberspace Operations Forces and Force Support program in FY 2025

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

U.S. Army Cyber Command (ARCYBER) is the supporting Army Headquarters under United States Cyber Command to operate and defend Army networks and deliver cyberspace effects against adversaries to defend the nation. ARCYBER pursues research and development of cyber-peculiar capabilities across ARCYBER's lines of effort in coordination with other cyber acquisition and research entities to satisfy ARCYBER's time-sensitive operational requirements.

This funding supports pilot and prototype capabilities to enter into Cooperative Research and Development Agreements (CRADAs) and Educational Partnership Agreements (EPAs) to provide rapid solutions to cyber via Technology Transfer (T2) mechanism. T2 enables ARCYBER to "SPIN OUT" its research and development advancements to industry and "SPIN IN" the best solutions from the private sector for the purpose of transitioning new capabilities to our warfighter. Will also have the authority for "Dual use" technologies that have both military and commercial markets to be transferred and transitioned. ARCYBER Technology and Innovation Center (ArCTIC) T2 fosters an environment where numerous promising approaches and solutions are able to be assessed in parallel to influence future capabilities. T2 provides ARCYBER the ability to influence future programs of record by prototyping solutions and assessing them against real-world environments to determine operational impact if transitioned and scaled. T2 activities will extend and promote this culture across all Army and partner scientific research and prototype endeavors. The ArCTIC capability and research areas are narrow enough to ensure that ArCTIC is remaining true to its core competencies, and broad enough so that the lab can accelerate development efforts across various technology readiness levels (TRLs) and capability categories.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Army	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305251A / <i>Cyberspace Operations Forces and Force Support</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	55.599	0.000	0.000	-	0.000
Current President's Budget	55.599	0.000	2.270	-	2.270
Total Adjustments	0.000	0.000	2.270	-	2.270
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	2.270	-	2.270

**Change Summary Explanation**

Funding increase to initiate Agile Solutions Pursuit Program within project FA8.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Army										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 2040 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0305251A / <i>Cyberspace Operations Forces and Force Support</i>				<b>Project (Number/Name)</b> DD3 / <i>Joint Cyber Warfighting Architecture Cyber Train</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
DD3: <i>Joint Cyber Warfighting Architecture Cyber Train</i>	-	55.599	-	-	-	-	-	-	-	-	0.000	55.599
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Persistent Cyber Training Environment (PCTE) supports the United States Cyber Command (USCC) by enabling the critical need for the DoD Cyber Mission Force (CMF) to train at the individual, team, and force level. PCTE provides the DoD CMF with a standardized training capability that maximizes shared content across the Services to include emulated network environments and has the ability to connect to other range environments and cyber training assets. The PCTE platform is aligned to the outputs of the Office of the Under Secretary of Defense for Acquisition & Sustainment OUSD (A&S) and Chairman of the Joint Chiefs of Staff (CJCS) J6 led, "Cyber Range Evaluation of Alternatives (EOA) Findings and Issue Paper Deliberations," dated 17 November 2015. The Program Executive Office for Simulation, Training, and Instrumentation (PEO STRI) was designated as the DoD Acquisition Lead for the PCTE and the program is directed by the 2016 National Defense Authorization Act, Section 1645. With the Joint Requirements Oversight Council (JROC) validation of the Information System - Capability Development Document (ISCDD)

on 4 November 2019, the PCTE program quickly achieved Milestone B on 6 December 2019. Through ongoing rapid prototyping efforts, the PCTE platform has fulfilled the critical need for a CMF standardized training capability upon release of PCTE Version 2 in Fourth Quarter Fiscal Year 2020, and continues to do so with ongoing version releases.

FY 2023 PCTE funding will focus on United States Cyber Command (USCC) priorities within platform releases to include enhancing current capability fidelity while introducing additional features. Areas of planned feature updates and enhancements include CMF learning management system, assessment and readiness capabilities, cloud based cyber terrain replication, distributed platform consolidation, cloud migration, and infrastructure consumption model implementation. The PCTE platform will continue collaboration with all stakeholders within the Joint Cyber Warfighting Architecture (JCWA), and continue initial integration efforts across the JCWA portfolio as prioritized through USCC. The PCTE platform will maintain accreditations at all required classification levels to serve DoD CMF user training at the Unclassified, Secret, and Top Secret data classification levels. Platform infrastructure and licensing will be maintained to support the full DoD CMF user base.

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

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Event Management for Persistent Cyber Training Environment (PCTE)	43.543	-	-
<b>Description:</b> Design, build and iterate PCTE capabilities; build upon individual training features supporting operational force training requirements; develop improved readiness functions, event scheduling, allocation and management for PCTE, to include event design, planning and execution, supported by standardized training assessment tools and capabilities.			
<b>Title:</b> Environment Operations and Management for Persistent Cyber Training Environment (PCTE)	4.814	-	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Army		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 2040 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0305251A / <i>Cyberspace Operations Forces and Force Support</i>	<b>Project (Number/Name)</b> DD3 / <i>Joint Cyber Warfighting Architecture Cyber Train</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Description:</b> Develop PCTE with mission-relevant terrain and realistic vignettes/scenarios as part of a system (syllabus) of individual and collective training that includes certification and real-world mission rehearsals.			
<b>Title:</b> Physical and Virtual Connectivity for the Persistent Cyber Training Environment (PCTE) <b>Description:</b> PCTE has procured, installed and is maintaining Regional Compute and Storage (RCS) nodes which enable on demand, reliable, and secure virtual access from wherever participants are geographically located. Additionally, the PCTE RCS infrastructure create a core cyber exercise network and event management platform to support Cyber Mission Force (CMF) training at the Unclassified, Secret, and Top Secret data classification levels.	5.510	-	-
<b>Title:</b> Persistent Cyber Training Environment (PCTE) Test and Evaluation <b>Description:</b> Persistent Cyber Training Environment (PCTE) integration, development, and operational testing that will include validation and verifications (V&V), operational assessments (OA), and testing in association with cyber training exercises and incorporated throughout the Product Manager (PM) Development Operations (DevOps) process. An Operational Test Authority (OTA) has been incorporated, in coordination with the Director, Operational Test and Evaluation (DOT&E), to conduct operational testing leveraging DevOps testing processes.	1.732	-	-
<b>Accomplishments/Planned Programs Subtotals</b>	55.599	-	-

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

N/A

**Remarks**

**D. Acquisition Strategy**

The Persistent Cyber Training Environment (PCTE) program employs an incremental acquisition strategy leveraging the use of existing cyber contracts and Other Transaction Authority (OTA) vehicles to provide specified capabilities that will be integrated into a cohesive training platform. The next step in the acquisition strategy is developing a long term contract vehicle that will continue enabling the PCTE platform to achieve scalability, optimization, innovation, and quality standards to meet the dynamic needs of the Cyber Mission Force (CMF) user base. The Product Manager awarded an integration focused Single Award Indefinite Delivery/Indefinite Quantity (ID/IQ) contract to serve PCTE as well as other cyber community customers called the Cyber Training, Readiness, Integration, Delivery, and Enterprise Technology (TRIDENT) contract on Q1 FY2022. The Cyber TRIDENT contract enables PCTE to provide iterative capability provided to the Cyber Mission Forces (CMF) in Capability Drops (CDs) that either improve or add features. These CDs will be based on requirements contained and further developed as part of the PCTE Information System - Capability Development Document (IS-CDD). This is a major capability acquisition that will continue to deliver capability in line with Information Technology (IT) Box requirements strategy.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 2040 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0305251A / <i>Cyberspace Operations Forces and Force Support</i>	<b>Project (Number/Name)</b> DD3 / <i>Joint Cyber Warfighting Architecture Cyber Train</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
PCTE Development and Integration Support	C/IDDQ	Various : Various	181.750	1.764	Feb 2023	-		-		-		-	0.000	183.514	-
PCTE Cyber Training, Readiness, Integration, Delivery, and Enterprise Technology (TRIDENT) Contract	C/IDDQ	Various : Various	24.581	13.363	Mar 2023	-		-		-		-	0.000	37.944	-
PCTE Development and Integration - Other Contracts	Option/ FFP	various : various	72.097	38.740	Mar 2023	-		-		-		-	0.000	110.837	-
<b>Subtotal</b>			278.428	53.867		-		-		-		-	0.000	332.295	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
PCTE Government Test and Evaluation	Option/ Various	various : various	13.111	1.732	Mar 2023	-		-		-		-	0.000	14.843	-
<b>Subtotal</b>			13.111	1.732		-		-		-		-	0.000	14.843	N/A

**Remarks**  
Validation and Verification tests at CMF existing training events will be conducted with every capability drop utilizing Cyber Mission Force operators

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	291.539	55.599	-	-	-	-	0.000	347.138	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Army</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 2040 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0305251A / <i>Cyberspace Operations Forces and Force Support</i>	<b>Project (Number/Name)</b> DD3 / <i>Joint Cyber Warfighting Architecture Cyber Train</i>

Event Name	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	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
Platform Releases (v1.0 - v8.0) - (IS-CDD 1)	Platform Releases (v1.0 - v8.0) - (IS-CDD 1)																											
PCTE v6.0	1																											
PCTE v7.0		2																										
PCTE v8.0			3																									
Platform Releases (v9.0 - vX.0) - (IS-CDD 2)					Platform Releases (v9.0 - vX.0) - (IS-CDD 2)																							
PCTE v9.0					4																							
PCTE v10.0									5																			
PCTE v11.0										6																		
PCTE v12.0											7																	
PCTE v13.0												8																

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<b>Exhibit R-4A, RDT&amp;E Schedule Details: PB 2025 Army</b>		<b>Date: March 2024</b>
<b>Appropriation/Budget Activity</b> 2040 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0305251A / <i>Cyberspace Operations Forces and Force Support</i>	<b>Project (Number/Name)</b> DD3 / <i>Joint Cyber Warfighting Architecture Cyber Train</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Platform Releases (v1.0 - v8.0) - (IS-CDD 1)	2	2022	2	2024
PCTE v4.0	2	2022	2	2022
PCTE v5.0	4	2022	4	2022
PCTE v6.0	2	2023	2	2023
PCTE v7.0	4	2023	4	2023
PCTE v8.0	2	2024	2	2024
Platform Releases (v9.0 - vX.0) - (IS-CDD 2)	4	2024	4	2026
PCTE v9.0	4	2024	4	2024
PCTE v10.0	2	2025	2	2025
PCTE v11.0	4	2025	4	2025
PCTE v12.0	2	2026	2	2026
PCTE v13.0	4	2026	4	2026

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<b>Appropriation/Budget Activity</b> 2040 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0305251A / <i>Cyberspace Operations Forces and Force Support</i>				<b>Project (Number/Name)</b> FA8 / <i>Cyberspace Operations Forces and Force Support</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
FA8: <i>Cyberspace Operations Forces and Force Support</i>	-	-	-	2.270	-	2.270	2.142	1.984	1.931	1.981	0.000	10.308
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Cyberspace Operations Forces and Force Support is a new start within the Cyberspace Operations Forces and Force Support program in FY 2025.

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

This project funding supports pilot and prototype capabilities to enter into Cooperative Research and Development Agreements (CRADAs) and Educational Partnership Agreements (EPAs) to provide rapid solutions to cyber via Technology Transfer (T2) mechanism. T2 enables ARCYBER to "SPIN OUT" its research and development advancements to industry and "SPIN IN" the best solutions from the private sector for the purpose of transitioning new capabilities to our warfighter. Will also have the authority for "Dual use" technologies that have both military and commercial markets to be transferred and transitioned.

ARCYBER Technology and Innovation Center (ArCTIC) T2 fosters an environment where numerous promising approaches and solutions are able to be assessed in parallel to influence future capabilities. T2 provides ARCYBER the ability to influence future programs of record by prototyping solutions and assessing them against real-world environments to determine operational impact if transitioned and scaled. T2 activities will extend and promote this culture across all Army and partner scientific research and prototype endeavors. The ArCTIC capability and research areas are narrow enough to ensure that ArCTIC is remaining true to its core competencies, and broad enough so that the lab can accelerate development efforts across various technology readiness levels (TRLs) and capability categories.

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

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Agile Solutions Pursuit Program	-	-	2.270
<b>Description:</b> ARCYBER Technology and Innovation Center (ArCTIC) T2 fosters an environment where numerous promising approaches and solutions are able to be assessed in parallel to influence future capabilities. T2 provides ARCYBER the ability to influence future programs of record by prototyping solutions and assessing them against real-world environments to determine operational impact if transitioned and scaled. T2 activities will extend and promote this culture across all Army and partner scientific research and prototype endeavors. The ArCTIC capability and research areas are narrow enough to ensure that ArCTIC is remaining true to its core competencies, and broad enough so that the lab can accelerate development efforts across various technology readiness levels (TRLs) and capability categories.			
<b>FY 2025 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Army		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 2040 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0305251A / <i>Cyberspace Operations Forces and Force Support</i>	<b>Project (Number/Name)</b> FA8 / <i>Cyberspace Operations Forces and Force Support</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>FY 2025 Base dollars in the amount of \$2.270 will be used to support the Line of Effort (LOE): Design, build, and deliver integrated capabilities for the future fight. Funds will initiate up to 3 different prototypes per year with the goal of focusing on internal R&amp;D and external partnerships on the broad classes of ARCYBER capabilities based on operational requirements.</p> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> This effort is a new start in FY25.</p>				
<b>Accomplishments/Planned Programs Subtotals</b>		-	-	2.270
<b>C. Other Program Funding Summary (\$ in Millions)</b>				
N/A				
<b>Remarks</b>				
<b>D. Acquisition Strategy</b>				
Not identified yet.				





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<b>Exhibit R-4A, RDT&amp;E Schedule Details: PB 2025 Army</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 2040 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0305251A / <i>Cyberspace Operations Forces and Force Support</i>	<b>Project (Number/Name)</b> FA8 / <i>Cyberspace Operations Forces and Force Support</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Prototype Releases (A-C) - (Risk Reduction Efforts)	4	2018	4	2019
PCTE vA	4	2018	4	2018
PCTE vB	2	2019	2	2019
PCTE vC	4	2019	4	2019
Platform Releases (v1.0 - v8.0) - (IS-CDD 1)	2	2020	4	2025
PCTE v1.0	2	2020	2	2020
PCTE v2.0	4	2020	4	2020
PCTE v3.0	2	2021	2	2021
PCTE v4.0	2	2022	2	2022
PCTE v5.0	4	2022	4	2022