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

<b>Appropriation/Budget Activity</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</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	-	33.796	50.662	28.544	-	28.544	5.198	5.353	5.475	5.608	0.000	134.636
CY5: <i>CYBER Situational Understanding</i>	-	0.000	20.183	23.892	-	23.892	0.000	0.000	0.000	0.000	0.000	44.075
EV5: <i>Defensive CYBER Operations</i>	-	33.796	30.479	4.652	-	4.652	5.198	5.353	5.475	5.608	0.000	90.561

**Note**

Defensive Cyber Operations (DCO) programs were selected as a candidate for the BA8 Software RDT&E Appropriation Pilot Program in FY 2021. These efforts have been transferred to PE 0608041A beginning in FY 2021. Cyber Situational Understanding (SU), DCO Development Environment (DCODE) (formerly Forge), and non-software Army Cyber Command (ARCYBER) Rapid Cyber Prototyping are not part of the Software Pilot and remain within this budget line item.

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

Defensive Cyber Operations (DCO) and Cyber Situational Understanding (SU) supports the Army Network Modernization Strategy Line of Effort (LOE) Key Enabler for Unified Network. Efforts are aligned to support the Network-Cross Functional Team capability set approach to achieve the network modernization strategy. The DCO budget line includes funding for Program Executive Office Command Control and Communications - Tactical (PEO C3T) Cyber SU and Tactical DCO Infrastructure (TDI); Program Executive Office Enterprise Information Systems (PEO EIS) Defensive Cyber Operations; and Army Cyber Command (ARCYBER) Rapid Cyber Prototyping.

Platforms/Levels:

- \* DCO - Tactical DCO Infrastructure (TDI) // (FY21 funds transferred to the Pilot program) // (PEO C3T)
- \* DCO - Cyberspace Analytics // (FY21 funds transferred to the Pilot program) // (PEO EIS)

Defensive Cyber Tools and Analytics:

- \* DCO - Mission Planning // (FY21 funds transferred to the Pilot program) // (PEO EIS)
- \* DCO - User Activity Monitoring // (FY21 funds transferred to the Pilot program) // (PEO EIS)
- \* DCO - DCO Development Environment (formerly Forge) (PEO EIS)
- \* DCO - Rapid Cyber Prototyping (ARCYBER)

655041CY5:

- Cyber SU provides tactical commanders at Brigade to Army Service Component Command (ASCC) with a broad understanding of Cyber Electromagnetic Activity (CEMA) threats by informing the commander of any cyber related impacts to physical domains, unified land operations, and the overall mission. Cyber SU allows for the visualization and understanding of physical (geographical), logical (at a specific network internet protocol), and cyber persona layers (bad actors, from individuals to nation states) of cyberspace. This is based on data/information from multiple sources and sensors that produce a CEMA overlay on the commander's Common

**UNCLASSIFIED**

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Operational Picture (COP) within the Command Post Computing Environment (CPCE). Supporting CEMA, Cyber SU synchronizes and integrates blue (friendly) cyberspace data, red (enemy), and grey (commercial/private sector), and enables collaboration at the tactical echelon. (PEO C3T)

655041EV5:  
- Tactical DCO Infrastructure (TDI) is a software-only program, which consists of pre-configured DCO tools residing on the Tactical Server Infrastructure (TSI). The TDI capability will reside within the Command Post at echelon Corps through Brigade for both organic Cyber Network Defenders as well as remote access by Cyber Protection teams (CPT) to support defense of the Tactical Network. (PEO C3T)

- Defensive Cyber Operations (DCO) consists of platform and software programs which are key elements of the DCO Maneuver Baseline infrastructure, platform, and tools. The employment of defensive capabilities creates specific effects in cyberspace through actions that allow commanders to achieve the following objectives: deter, destroy, and defeat enemy offensive cyberspace operations; gain time; economy of force; control key terrain; protect tasked critical assets and infrastructure; and develop intelligence. DCO supports the Army Cyber Command (ARCYBER), Army Cyberspace Operations and Integration Center (ACOIC), (5) Regional Cyber Centers (RCCs), Cyber Warfare Battalion (CWB), Multi-Domain Task Force (MDTF), Cyber Protection Brigade (CPB), and (41) Cyber Protection Teams (CPTs) in COMPO 1/2/3. (PEO EIS)

- ARCYBER Rapid Cyber Prototyping provides capabilities that can quickly respond to emerging cyber threats and keep up with threat technology. ARCYBER identifies potential development and prototyping efforts via Cyber Needs Forms (CNFs) based on operational feedback, changes in tactics techniques and procedures (TTPs), and trends of adversarial activity. These are separate and distinct from DCO programs identified and are used to rapidly address a network threat/vulnerability. (ARCYBER)

<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	33.796	62.262	29.738	-	29.738
Current President's Budget	33.796	50.662	28.544	-	28.544
Total Adjustments	0.000	-11.600	-1.194	-	-1.194
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-11.600			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-1.194	-	-1.194

**Change Summary Explanation**

EV5 FY20 Base funding in the amount of \$11.600 million was Congressional marks for Restoring Acquisition Accountability (Contract Delays) and Improving Funds Management: Excess Growth

**UNCLASSIFIED**

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<b>Appropriation/Budget Activity</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</i>	
<p>CY5 FY21 Base funding in the amount of \$23.892 million was aligned for Cyber SU. EV5 FY21 Base funding in the amount of \$1.194 million was reduced due to Army priorities.</p>		

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Army										<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 2040 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</i>				<b>Project (Number/Name)</b> CY5 / <i>CYBER Situational Understanding</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
CY5: <i>CYBER Situational Understanding</i>	-	0.000	20.183	23.892	-	23.892	0.000	0.000	0.000	0.000	0.000	44.075
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Defensive Cyber Operations (DCO) programs were selected as a candidate for the BA8 Software RDT&E Appropriation Pilot Program in FY21. These efforts are a continuation and transferred to PE 0608041A. Cyber Situational Understanding (SU) is not part of the Software Pilot and remain within this budget line item.

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

Cyber Situational Understanding (SU) funding line supports the Army Network Modernization Strategy LOE 1, Unified Network. Efforts are aligned to support the Network-Cross Functional Team capability set approach to achieve the network modernization strategy. This funding will be executed by Program Executive Office Command Control and Communications - Tactical (PEO C3T).

655041CY5:

Cyber SU is a software-only program hosted on the Tactical Server Infrastructure (TSI) at Brigade to ASCC echelons continually integrating Commercial-Off-The-Shelf (COTS)/Non-Developmental Item (NDI) capabilities into the Common Operating Environment (COE) to produce a Cyber Electromagnetic Activity (CEMA) overlay on the commander's Common Operational Picture (COP) within the Command Post Computing Environment (CPCE). Cyber SU enables the commander and staff to concurrently defend the network/information systems, identify and target cyberspace threats, manage risks and aid in increasing operational success.

Cyber SU will allow the tactical commander to see themselves, see their battlespace and understand their battlespace; this will be accomplished with three capability drops. Cyber SU provides the visualization and understanding of physical (geographical), logical (at a specific network internet protocol), and cyber persona layers (bad actors, from individuals to nation states) of tactical cyberspace data. Cyber SU ingests existing data sources, synchronizing and integrating blue (signal, cyberspace (DCO), electronic warfare and mission command data), red (intelligence data), and grey (commercial/private sector data) and enables collaboration at the tactical edge. Cyber SU provides tactical commanders with a thorough understanding of CEMA threats by informing the commander of any cyber related impacts to physical domains, unified land operations, and the overall mission.

Cyber SU FY 2021 funding will support continued prototyping, engineering, testing, training development and program management to establish the Cyber SU initial capability in support of First Unit Equipped (FUE) 1Q22. The initial COTS/NDI system will be integrated into CPCE, and will ingest, correlate, analyze and display cyberspace data to include network health and status into useful and actionable warfighter information that can be shared with the CEMA Work Group.

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

	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<b>Title:</b> Development Engineering	-	15.148	17.273

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Army		<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</i>	<b>Project (Number/Name)</b> CY5 / <i>CYBER Situational Understanding</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<p><b>Description:</b> Cyber SU requirements will be defined at the lowest level and synchronized with multiple Program of Record (PoRs) that will feed data to inform COTS/ NDI product evaluation and integration.</p> <p><b>FY 2020 Plans:</b> FY 2020 funding will develop the necessary systems engineering/architecture products, middleware and back-end services required to establish an integration environment. In addition, FY 2020 funds will support software procurement and prototyping of candidate GOTS/COTS products to establish an initial Cyber SU capability to achieve Limited Deployment in FY 2020. Program Executive Office Command, Control and Communications-Tactical (PEO C3T) will execute these funds.</p> <p><b>FY 2021 Plans:</b> FY21 funding supports the completion of development, prototyping and testing of systems engineering/architecture products, middleware and back-end services required to establish of the initial Cyber SU capability. In addition, FY21 funds support incorporation of Cyber effects of the Command Post Computing Environment (CPCE) applications and critical warfighting functionality into the Cyber SU framework in order to achieve FUE in 1Q22. PEO C3T will execute these funds.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Increase allows for incorporation of additional Cyber effects of CPCE applications into the Cyber SU framework as well as the addition of test hardware.</p>				
<p><b>Title:</b> Systems Test and Evaluation</p> <p><b>Description:</b> T&amp;E efforts include the planning and execution of T&amp;E events including Developmental Test, Interoperability Testing, Software Acceptance Testing, Integration Events, Risk Reduction Events, and Initial User Test and Evaluation.</p> <p><b>FY 2020 Plans:</b> FY 2020 funding will provide developmental testing and initial operational test support in preparation for a limited deployment in FY 2020. PEO C3T will execute these funds.</p> <p><b>FY 2021 Plans:</b> FY 2021 funding will allow for the completion of developmental testing (DT), user testing (UT) and user assessments (UA) for the initial Cyber SU capability, in order to gain user feedback to inform an operational assessment in 3Q21. PEO C3T will execute these funds.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Supports increased scope of DT/UT/UA events, such as DEVOPS/Risk Reduction events.</p>		-	2.444	4.136
<p><b>Title:</b> Training</p>		-	0.118	0.501

**UNCLASSIFIED**

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<p><b>Description:</b> The development of training support products, including coordination with US Army Training and Doctrine Command (TRADOC) Capability Managers (TCM), US Army Cyber Command, PORs, and related organizations to develop applicable program of instruction.</p> <p><b>FY 2020 Plans:</b> FY 2020 funding will provide the initial development for training philosophy, methods, and associated products to support a limited deployment in FY 2020. PEO C3T will execute these funds.</p> <p><b>FY 2021 Plans:</b> FY 2021 funding provides for completion of the development and verification/validation of the New Equipment Training (NET) training support package to support FUE in 1Q22. PEO C3T will execute these funds.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Increase supports verification and validation of the NET support package.</p>				
<p><b>Title:</b> Systems Engineering/Management</p> <p><b>Description:</b> Systems Engineering/Management includes business, technical and logistical staff support and overall management of program execution, major events and reporting.</p> <p><b>FY 2020 Plans:</b> FY 2020 funding will provide funding for program office staff (matrix and contractor) to perform duties necessary to develop, acquire/procure, have a milestone decision review and field Limited Deployment in FY 2020. PEO C3T will execute these funds.</p> <p><b>FY 2021 Plans:</b> FY 2021 funding provides for program office staff (matrix and contractor) continued program execution support and to perform duties necessary to plan and execute activities and milestone events. PEO C3T will execute these funds.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Decrease due to leveraged efficiencies in system engineering/management support across the PM Mission Command product portfolio.</p>		-	2.473	1.982
<b>Accomplishments/Planned Programs Subtotals</b>		-	20.183	23.892
<b>C. Other Program Funding Summary (\$ in Millions)</b>				
N/A				

**UNCLASSIFIED**

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

**Remarks**

N/A

**D. Acquisition Strategy**

The Cyber SU IS ICD was approved on 9 Mar 18 by the Joint Requirements Oversight Council (JROC) and on 4 Feb 19 by the Army Requirements Oversight Council (AROC). The Requirements Definition Package (RDP) was approved on 19 Mar 19 by the AROC Requirements Board. The Cyber SU program is under an IT Box construct with a five (5) year term (FY20-24) which aligns with the current RDP.

The Program Executive Office, Command, Control and Communications-Tactical, Milestone Decision Authority (MDA), approved the Materiel Development Decision on 20 Jun 18, designating Cyber SU as an ACAT III AIS program. The program is currently scheduled for a Milestone B decision review 2Q20.

The program is employing a tailored acquisition model for Agile Software Development, under which Cyber SU will develop a series of testable, integrated subsets of capability to meet the overall full functional values of the RDP through the use of Capability Drops (CDs). Subsequent CDs are to be approved by the U.S. Army Cyber Center of Excellence in collaboration with U.S. Army Forces Command. To that end, the program office intends to evaluate and leverage COTS/NDI products to the greatest extent and leverage cyber solutions from science and technology efforts (e.g., Cyber Mission Impact Tool (CMIT), as well as ingest data from related programs (e.g, DCO, TDI, CPCE, EWPM, UNO, DCGS-A). Prototyping and development will employ a combination of Government entities and commercial vendors via an Other Transaction Authority (OTA) contract vehicle. Coordination and integration with complimentary programs and systems (sources of cyber data feeds) will be an integral part of the program to ensure the data is made available to be consumed by the Cyber SU solution. Cyber SU will be hosted on the Tactical Server Infrastructure (TSI) and will be fielded by the CPCE/TSI program in accordance with their fielding schedule.

**UNCLASSIFIED**

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 5				PE 0605041A / Defensive CYBER Tool Development				CY5 / CYBER Situational Understanding							
Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Systems Engineering/Management	C/FFP	CACI : APG, MD	-	-		2.473		1.982		-		1.982	0.000	4.455	-
<b>Subtotal</b>			-	-		2.473		1.982		-		1.982	0.000	4.455	N/A
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Cyber SU Development/Prototyping	C/TBD	TBD : Warren, MI	-	-		15.148		17.273		-		17.273	0.000	32.421	-
<b>Subtotal</b>			-	-		15.148		17.273		-		17.273	0.000	32.421	N/A
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Training Development	C/TBD	TBD : TBD	-	-		0.118		0.501		-		0.501	0.000	0.619	-
<b>Subtotal</b>			-	-		0.118		0.501		-		0.501	0.000	0.619	N/A
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Developmental/Interoperability Test	C/TBD	TBD : TBD	-	-		0.883		2.127		-		2.127	0.000	3.010	-
ATEC Support	MIPR	ATEC : APG, MD	-	-		0.731		1.821		-		1.821	0.000	2.552	-
Accreditation/Certification	C/FFP	CACI : APG, MD	-	-		0.830		0.188		-		0.188	0.000	1.018	-
<b>Subtotal</b>			-	-		2.444		4.136		-		4.136	0.000	6.580	N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2021 Army</b>								<b>Date:</b> February 2020				
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	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>		<b>FY 2021 Base</b>		<b>FY 2021 OCO</b>		<b>FY 2021 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	-	-	20.183		23.892		-		23.892	0.000	44.075	N/A

**Remarks**  
Contract award dates are TBD.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2021 Army</b>		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</i>	<b>Project (Number/Name)</b> CY5 / <i>CYBER Situational Understanding</i>

Event Name	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
RDP Approval	▲ 1 RDP																											
Milestone B Decision					▲ 2 MS B																							
DEVOPS									▲ 3 LD																			
Prototype/Development/Integration and Testing-Initial Capability																												
Limited Deployment Decision (Initial Capability)																												
First Unit Equipped																	▲ 4 LDD											
																					▲ 5 FUE							

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Army		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</i>	<b>Project (Number/Name)</b> CY5 / <i>CYBER Situational Understanding</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
RDP Approval	2	2019	2	2019
Milestone B Decision	2	2020	2	2020
DEVOPS	4	2020	4	2020
Prototype/Development/Integration and Testing-Initial Capability Drop	2	2020	4	2021
Limited Deployment Decision (Initial Capability)	1	2022	1	2022
First Unit Equipped	1	2022	1	2022

**UNCLASSIFIED**

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<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
<i>EV5: Defensive CYBER Operations</i>	-	33.796	30.479	4.652	-	4.652	5.198	5.353	5.475	5.608	0.000	90.561
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Defensive Cyber Operations (DCO) programs were selected as a candidate for the BA8 Software RDT&E Appropriation Pilot Program in FY 2021. These efforts have been transferred to PE 0608041A Project CD1 beginning in FY 2021. DCO Development Environment (DCODE) (formerly Forge) and non-software Army Cyber Command (ARCYBER) Rapid Cyber Prototyping are not part of the Software Pilot and remain within this budget line item.

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

Defensive Cyber Operations (DCO) supports the Army Network Modernization Strategy Line of Effort (LOE) Key Enabler for the Unified Network. Efforts are aligned to support the Network-Cross Functional Team capability set approach to achieve the network modernization strategy. The DCO budget line includes funding for Program Executive Office Command Control and Communications - Tactical (PEO C3T) Tactical DCO Infrastructure (TDI); Program Executive Office Enterprise Information Systems (PEO EIS) Defensive Cyber Operations; and Army Cyber Command (ARCYBER) Rapid Cyber Prototyping.

Platforms/Levels:

- \* DCO - Tactical DCO Infrastructure (TDI) // (FY21 funds transferred to the Pilot program) // (PEO C3T)
- \* DCO - Cyberspace Analytics // (FY21 funds transferred to the Pilot program) // (PEO EIS)

Defensive Cyber Tools and Analytics:

- \* DCO - Mission Planning // (FY21 funds transferred to the Pilot program) // (PEO EIS)
- \* DCO - User Activity Monitoring // (FY21 funds transferred to the Pilot program) // (PEO EIS)
- \* DCO - DCO Development Environment (formerly Forge) (PEO EIS)
- \* DCO - Rapid Cyber Prototyping (ARCYBER)

655041EV5:

- Tactical DCO Infrastructure (TDI) is a software-only program, which consists of pre-configured DCO tools residing on the Tactical Server Infrastructure (TSI). The TDI capability will reside within the Command Post at echelon Corps through Brigade for both organic Cyber Network Defenders as well as remote access by Cyber Protection teams (CPT) to support defense of the Tactical Network.

- Defensive Cyber Operations (DCO) consists of platform and software programs which are key elements of the DCO Maneuver Baseline infrastructure, platform, and tools. The employment of defensive capabilities creates specific effects in cyberspace through actions that allow commanders to achieve the following objectives:

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<p>deter, destroy, and defeat enemy offensive cyberspace operations; gain time; economy of force; control key terrain; protect tasked critical assets and infrastructure; and develop intelligence. DCO supports the Army Cyber Command (ARCYBER), Army Cyberspace Operations and Integration Center (ACOIC), (5) Regional Cyber Centers (RCCs), Cyber Warfare Battalion (CWB), Multi-Domain Task Force (MDTF), Cyber Protection Brigade (CPB), and (41) Cyber Protection Teams (CPTs) in COMPO 1/2/3.</p> <p>- ARCYBER Rapid Cyber Prototyping provides capabilities that can quickly respond to emerging cyber threats and keep up with threat technology. ARCYBER identifies potential development and prototyping efforts via Cyber Needs Forms (CNFs) based on operational feedback, changes in tactics techniques and procedures (TTPs), and trends of adversarial activity. These are separate and distinct from DCO programs identified and are used to rapidly address a network threat/vulnerability.</p>				
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<p><b>Title:</b> DCO - Tactical DCO Infrastructure (TDI) (PEO C3T)</p> <p><b>Description:</b> DCO Tactical DCO Infrastructure is a software-only program which consists of pre-configured DCO Tools on the Tactical Server Infrastructure (TSI) residing within the Command Post, at Brigade through Corps, for both organic Cyber Network Defenders as well as remote access by Cyber Protection Teams (CPTs) to support defense of the tactical network.</p> <p><b>FY 2020 Plans:</b> FY 2020 funding will support the development engineering, integration and testing of Capability Drop 1 (CD1). CD1 will upgrade the DCO tools integrated on the TSI, expand the sensor architecture to more command post applications, thus increasing the tactical commander's defensive cyber posture. This effort's funding will be executed by PEO C3T.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> FY 2021 funds transferred to the BA8 Software RDTE Appropriation Pilot Program PE 0608041A Project CD1.</p>		6.339	4.794	-
<p><b>Title:</b> DCO - Cyberspace Analytics (PEO EIS)</p> <p><b>Description:</b> DCO Cyberspace Analytics Big Data Platform (BDP) is a scalable software based capability hosted in the cloud, called Gabriel Nimbus (GN), which offers interfaces and visualization accessible by cyberspace defenders at all levels to facilitate counter-reconnaissance activities meant to discover the presence of advanced or sophisticated cyber threats and vulnerabilities.</p> <p><b>FY 2020 Plans:</b> FY 2020 funding supports development engineering, integration, and testing of quarterly capability releases. Key priorities are the standup of Secret Internet Protocol Router Network (SIPR) and Joint Worldwide Intelligence Communications System (JWICS) enclaves, the extension of capabilities to the Regional Cyber Centers (RCC), and development of applications deployable across DCO platforms such as Big Data Platform (BDP). Key to mission success is the collection of data on our platforms and the integration with Gabriel Nimbus (GN) through the Lower Echelon Analytic Platform (LEAP) which are vital to achieve this vision.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b></p>		14.090	14.296	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Army		<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</i>	<b>Project (Number/Name)</b> EV5 / <i>Defensive CYBER Operations</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
FY 2021 funds transferred to the BA8 Software RDTE Appropriation Pilot Program PE 0608041A Project CD1.				
<p><b>Title:</b> DCO - Mission Planning (PEO EIS)</p> <p><b>Description:</b> DCO Mission Planning (DCOMP) solution acts as the lead application integrator for the Army's Big Data Platform. It is a software application-based, scalable warfighting capability for Army DCO mission command and planning at the tactical and strategic levels.</p> <p><b>FY 2020 Plans:</b> FY 2020 funding supports development engineering, integration, and testing of capability drops 2, 3, 4, and 5. It supports hosting efforts on Gabriel Nimbus (GN) to support Initial Operational Capability (IOC) of PhalanX use for operational use. This includes prioritizing development requirements to include integrating use with the Garrison DCO Platform (GDP) and Deployable DCO System (DDS) that are fielded.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> FY 2021 funds transferred to the BA8 Software RDTE Appropriation Pilot Program PE 0608041A Project CD1.</p>		8.133	2.000	-
<p><b>Title:</b> DCO - User Activity Monitoring (PEO EIS)</p> <p><b>Description:</b> DCO User Activity Monitoring is the primary capability within the Army's overall Insider Threat program. UAM is primarily a software-based, scalable solution (some hardware in the on-premise solution) that proactively identifies and mitigates internal risks associated with the theft or misuse of critical, mission essential data. It utilizes an integrated approach with a centralized UAM cell sending data to a core Insider Threat Hub.</p> <p><b>FY 2020 Plans:</b> FY 2020 funding supports development engineering, integration, and testing of capability drops 1 and 2. It will achieve Initial Operational Capability (IOC) by 2Q20. It provides protection against insider threat through the deployment of capability in defense of our most critical networks. Proactively identifies and mitigates internal risks associated with the theft or misuse of critical, mission essential data. Assists with the establishment of the Army's Insider Threat (InT) Protection Program that utilizes full-spectrum solutions to assess, deter, deny, defend, defeat, and evolve against the insider threat. Facilitates the ability to identify insiders threats based on policy violations, as well as the capturing of certain risk behaviors that rate the likelihood of an incident caused by a trusted insider. Integrates behavioral based analysis capability through the use of GN. The Army will implement UAM for all Soldiers, civilians, and contractors with access to JWICS and SIPRNet.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> FY 2021 funds transferred to the BA8 Software RDTE Appropriation Pilot Program PE 0608041A Project CD1.</p>		-	1.434	-
<p><b>Title:</b> DCO - Threat Emulation (PEO EIS)</p>		0.761	-	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Army		<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</i>	<b>Project (Number/Name)</b> EV5 / <i>Defensive CYBER Operations</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<p><b>Description:</b> DCO Threat Emulation capability is a software based suite of tools used to gain access to evaluated networks and through multi-vectors of unknown, partially known, or known access methods. Threat Emulation will enable the implementation of real world threat tactics techniques and procedures (TTPs) against risk areas such as web services, endpoints, passwords and identities, phishing and social engineering, mobile devices, and wired/wireless network systems in order to reveal critical security exposures.</p>				
<p><b>Title:</b> DCO - Development Environment (formerly Forge) (PEO EIS)</p> <p><b>Description:</b> DCO Development Environment (DCODE) (formerly Forge) is a world class facility that provides continual integration, upgrade/test, optimization and Soldier operational environment. It is designed to provide centralized lifecycle management and consists of the following capabilities: (1) Forge - physical or virtual asset that provides integration and assessment capabilities during the development and integration phases of operations (centrally managed patching and security); (2) Armory - authoritative source for capabilities within the approved baseline at ten locations (eight regional and two mobile); and (3) Mission Network - provides the capability to remove into multiple networks (provides save and secure infrastructure framework for Cyber Protection Teams).</p> <p><b>FY 2020 Plans:</b> DCODE Requirements Definition Package (RDP) is slated to be approved by the Army Requirements Board 2Q20. DCODE continues to assess new cyber technologies within controlled environment, test capabilities in integrated environment, provide virtual training access 24/7 worldwide, and test/push approved enhancement remotely.</p> <p><b>FY 2021 Plans:</b> FY 2021 funding continues assessment of new cyber technologies within controlled environment, test capabilities in integrated environment, provide virtual training access 24/7 worldwide, and test/push approved enhancement remotely.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Funds increase to support development.</p>		2.747	0.900	3.143
<p><b>Title:</b> DCO - Rapid Cyber Prototyping (ARCYBER)</p> <p><b>Description:</b> DCO Rapid Cyber Prototyping provides software based capabilities that can quickly respond to emerging cyber threats and keep up with threat technology. Cyber Needs Forms (CNF) identify potential development and prototyping efforts based on operational feedback, changes in TTPs and trends of adversarial activity. It is used when gaps identified in the CNF are non-program of record cyber operations-peculiar equipment and capabilities to rapidly address a network threat/vulnerability.</p> <p><b>FY 2020 Plans:</b></p>		-	1.000	0.999

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Army		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</i>	<b>Project (Number/Name)</b> EV5 / <i>Defensive CYBER Operations</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
FY 2020 funding supports development engineering and prototyping software based Emerging Threat Response Development. <b>FY 2021 Plans:</b> FY 2021 funding supports development engineering and prototyping software based Emerging Threat Response Development. <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Minor change to economic adjustment.			
<b>Title:</b> DCO - Management Services (PEO EIS) <b>Description:</b> Program management services consists of System Engineering and Technical Assistance (SETA) contractors and government/contract matrix support from Software Engineering Center (SEC), Information Systems Engineering Command (ISEC), and Army Test and Evaluation Command (ATEC) for development engineering, integration, and testing of software based DCO capabilities. <b>FY 2020 Plans:</b> FY 2020 funding provides continued program management services and support. <b>FY 2021 Plans:</b> FY 2021 funds program management services and support for DCODE (formerly Forge) sites. <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Majority of DCO efforts transferred to the Software RDTE Pilot program in FY 2021. Remaining management services support DCODE (formerly Forge).	1.726	6.055	0.510
<b>Accomplishments/Planned Programs Subtotals</b>	33.796	30.479	4.652

<b>C. 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</u> <u>Complete</u>	<u>Total Cost</u>
• B63103: <i>Advanced Cyber Tool Development</i>	51.343	56.962	54.753	-	54.753	70.097	36.783	39.402	45.850	Continuing	Continuing
• OMA - N/A: <i>Information Mgmt-Automation Support (MDEP MU2Z SAG 432612)</i>	-	-	-	-	-	-	-	-	-		
<b>Remarks</b>	OPA PE B63103 for DCO procurement, fielding, and new equipment training.										

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Army		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</i>	<b>Project (Number/Name)</b> EV5 / <i>Defensive CYBER Operations</i>

**C. 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>
OMA SAG 432612 for DCO License Renewals and non-traditional sustainment for FY19-20. Funds were aligned to SAG 151251 in FY21 (transferred to BA8 Software RDTE Appropriation Pilot Program PE 0608041A Project CD1).											
OMA SAG 435106 for Civilian Pay was established by the Army starting in FY19 due to Reimbursable to Direct conversion for DCO.											

**D. Acquisition Strategy**

The DCO Information System Capabilities Development Document (IS ICD) was approved on 19 Dec 17 by the Army Requirements Oversight Council (AROC). DCO programs are under an IT Box construct with five year term (FY18-22) which aligns with current Requirements Definition Package (RDP).

The Milestone Decision Authority (MDA), approved the Materiel Development Decision (MDD) on 13 Apr 18, designating Tactical DCO Infrastructure (TDI) as an ACAT III program. The TDI program's RDP was approved on 8 Nov 18 by the Army Requirement Board (ARB). Under subsequent reviews, the MDA approved a tailored defense unique software intensive acquisition approach for TDI. To support this agile acquisition approach, the TDI program office will develop and deploy pre-configured software in a series of capability drops in order to deliver full functional values of the RDP that align with DCO priorities. The TDI program had a Full Deployment Decision (FDD) of TDI's initial capability approved by the MDA on Sep 19, which allowed the program to achieve IOC Oct 19. TDI is hosted on the Tactical Server Infrastructure (TSI) and will be fielded by the CPCE/TSI program in accordance with their fielding schedule. Execution of the TDI program will be a combination of government entities and commercial vendors.

The ARB approved Cyber Analytics and DCO Tool Suite RDPs on 24 Apr 18; Mission Planning on 26 Jun 18; and User Activity Monitoring and Forensics and Malware on 16 Oct 18. The MDA designated these as ACAT IV programs. Under subsequent reviews, the MDA approved agile acquisition approach to develop and deliver preconfigured software in a series of releases and capability drops in order to deliver full functional values of the RDP that align with DCO priorities. DCO programs utilize standard and 874 agile pilot evolutionary acquisition processes (30-90 rapid acquisition approach). DCO continually delivers new technologies and capabilities as a prototype and fields updated capabilities. DCO contract strategy utilizes multiple existing contracts vehicles to include Other Transactional Authority (OTA), Federal Acquisition Regulation (FAR)-based, Blanket Purchase Agreement (BPA), and Basic Ordering Agreement (BOA).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 5				PE 0605041A / Defensive CYBER Tool Development				EV5 / Defensive CYBER Operations							
Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
DCO - Tactical DCO Infrastructure (TDI) (PEO C3T)	C/FFP	CACI : Aberdeen Proving Ground (APG), MD	7.697	0.578	Oct 2018	1.180	Mar 2020	-		-		-	0.000	9.455	-
DCO - Cyberspace Analytics (PEO EIS)	Various	PEO EIS : Ft Belvoir, VA	0.552	-		-		-		-		-	0.000	0.552	-
DCO - Tools Suite (PEO EIS)	Various	PEO EIS : Ft Belvoir, VA	0.189	-		-		-		-		-	0.000	0.189	-
DCO - Garrison Defensive Platform (PEO EIS)	Various	PEO EIS : Ft Belvoir, VA	0.913	-		-		-		-		-	0.000	0.913	-
DCO - Mission Planning (PEO EIS)	Various	PEO EIS : Ft Belvoir, VA	0.542	-		-		-		-		-	0.000	0.542	-
DCO - Deployable DCO System (PEO EIS)	Various	PEO EIS : Ft Belvoir, VA	0.189	-		-		-		-		-	0.000	0.189	-
DCO - Management Services (PEO EIS)	Various	PEO EIS : Ft Belvoir, VA	-	1.726	Oct 2018	6.055	Oct 2019	0.510	Oct 2020	-		0.510	Continuing	Continuing	Continuing
<b>Subtotal</b>			10.082	2.304		7.235		0.510		-		0.510	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
DCO - TDI (PEO C3T)	C/CPFF	Parsons and CACI : Aberdeen Proving Ground (APG), MD	6.821	4.519	Apr 2019	3.299	Jan 2020	-		-		-	0.000	14.639	-
DCO - Cyberspace Analytics (PEO EIS)	C/FFP	ACC-RI : IL	21.687	14.090	Nov 2018	14.296	Dec 2019	-		-		-	0.000	50.073	-
DCO - Garrison Defensive Platform (PEO EIS)	C/FFP	ACC-RI : IL	2.060	-		-		-		-		-	0.000	2.060	-
DCO- Garrison Defensive Platforms (PEO EIS)	C/Various	ACC-PI : NJ	9.690	-		-		-		-		-	0.000	9.690	-
DCO - Mission Planning (PEO EIS)	C/CPFF	ACC-RI : IL	-	8.133	Nov 2018	2.000	Feb 2020	-		-		-	0.000	10.133	-

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

<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</i>	<b>Project (Number/Name)</b> EV5 / <i>Defensive CYBER Operations</i>
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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			
DCO - User Activity Monitoring (PEO EIS)	C/T&M	ACC-RI : IL	-	-		1.434	Feb 2020	-		-		-	0.000	1.434	-
DCO- Threat Emulation (PEO EIS)	C/FFP	ACC-RI : IL	-	0.761	Jul 2019	-		-		-		-	0.000	0.761	-
DCO - Rapid Cyber Prototyping (ARCYBER)	C/TBD	ACC-RI : IL	-	-		1.000	Jan 2020	0.999	Jan 2021	-		0.999	0.000	1.999	-
DCO- Mission Planning (PEO EIS)	MIPR	USAF, AFMC AIR FORCE RESEARCH LAB : NY	14.520	-		-		-		-		-	0.000	14.520	-
<b>Subtotal</b>			54.778	27.503		22.029		0.999		-		0.999	0.000	105.309	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			
DCO - TDI (PEO C3T)	MIPR	DLA : Philadelphia, PA	-	0.174	Jan 2019	-		-		-		-	0.000	0.174	-
<b>Subtotal</b>			-	0.174		-		-		-		-	0.000	0.174	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			
DCO - TDI (PEO C3T)	MIPR	A TEC : Aberdeen Proving Ground (APG), MD	0.828	1.068	Oct 2018	0.315	Jan 2020	-		-		-	0.000	2.211	-
DCO - Cyberspace Analytics (PEO EIS)	IA	A TEC & SEC : MD	4.923	-		-		-		-		-	0.000	4.923	-
DCO - Tools Suite (PEO EIS)	IA	A TEC & SEC : MD	0.500	-		-		-		-		-	0.000	0.500	-
DCO - Garrison Defensive Platform (PEO EIS)	IA	A TEC & SEC : MD	0.500	-		-		-		-		-	0.000	0.500	-

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

<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</i>	<b>Project (Number/Name)</b> EV5 / <i>Defensive CYBER Operations</i>
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<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			
DCO - Deployable DCO System (PEO EIS)	IA	ATEC & SEC : MD	0.500	-		-		-		-		-	0.000	0.500	-
DCO - Mission Planning (PEO EIS)	MIPR	ATEC : MD	1.865	-		-		-		-		-	0.000	1.865	-
DCO - DCO Development Environment (DCODE, formerly Forge (PEO EIS))	IA	ATEC & SEC & TOBYHANNA : Various	-	2.747	Jan 2019	0.900	Jan 2020	3.143	Jan 2021	-		3.143	Continuing	Continuing	Continuing
<b>Subtotal</b>			9.116	3.815		1.215		3.143		-		3.143	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			73.976	33.796		30.479		4.652		-		4.652	Continuing	Continuing	N/A

**Remarks**  
DCO-TDI(PEO C3T): Award dates reflect the date that funding was/will be sent onto a pre-existing contract or to another organization.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2021 Army</b>		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</i>	<b>Project (Number/Name)</b> EV5 / <i>Defensive CYBER Operations</i>

Event Name	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
DCO - TDI Development/Integration/Testing-Initial	[Redacted]				[Redacted]																							
	TDI Dev/Int/Testing-Initial Cap.																											
DCO - TDI - Full Deployment Decision- Initial Capability				8																								
				TDI FDD of Initial Cap.																								
DCO - TDI- IOC				9																								
				TDI IOC																								
DCO - TDI Development/Integration/Testing-CD 1					[Redacted]																							
					TDI Dev/Int/Testing-CD 1																							
DCO - Cyberspace Analytics POR Award	3																											
	DCO CA POR Award																											
DCO - Cyberspace Analytics POR Contract					[Redacted]																							
					DCO CA POR Contract																							
DCO - Cyberspace Analytics Capability Drop #1	1																											
	DCO CA Capability Drop #1																											
DCO - Cyberspace Analytics Capability Drop #2		5																										
		DCO CA Capability Drop #2																										
DCO - Cyberpace Analytics Capability Drop #3			6																									
			DCO CA Capability Drop #3																									
DCO - Mission Planning POR Award	4																											
	DCO MP POR Award																											
DCO - Mission Planning POR Contract					[Redacted]																							
					DCO MP POR Contract																							
DCO - Mission Planning Capability Drop #1				7																								
				DCO MP Capability Drop #1																								
DCO - Mission Planning Capability Drop #2								10																				
								DCO MP Capability Drop #2																				

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2021 Army</b>		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</i>	<b>Project (Number/Name)</b> EV5 / <i>Defensive CYBER Operations</i>

Event Name	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
DCO - Mission Planning Capability Drop #3								▲13																				
								DCO MP Capability Drop #3																				
DCO - User Activity Monitoring Prototype Award																												
DCO - User Activity Monitoring RDP Approval																												
DCO - User Activity Monitoring POR Award																												
DCO - User Activity Monitoring POR Contract																												
DCO - User Activity Monitoring Employ on CASE Network																												
DCO - User Activity Monitoring Integrate with BDP																												
DCO - User Activity Monitoring Behavioral Analytics																												
DCO - Threat Emulation RDP Approval																												
DCO - Threat Emulation Program of Record																												
DCO - Development Environment (formerly Forge)																												
DCO - ARCYBER Rapid Cyber Prototyping																												
DCO - Management Services																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Army		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</i>	<b>Project (Number/Name)</b> EV5 / <i>Defensive CYBER Operations</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
DCO - Tactical DCO-Infrastructure (TDI) - RDP Approval	3	2018	3	2018
DCO - TDI Development/Integration/Testing-Initial	1	2019	4	2019
DCO - TDI - Full Deployment Decision- Initial Capability	4	2019	4	2019
DCO - TDI- IOC	4	2019	4	2019
DCO - TDI Development/Integration/Testing-CD 1	4	2019	4	2020
DCO- Cyberspace Analytics RDP Approval	3	2018	3	2018
DCO - Cyberspace Analytics POR Award	1	2019	1	2019
DCO - Cyberspace Analytics POR Contract	2	2019	4	2020
DCO - Cyberspace Analytics Capability Drop #1	1	2019	1	2019
DCO - Cyberspace Analytics Capability Drop #2	2	2019	2	2019
DCO - Cyberpace Analytics Capability Drop #3	3	2019	3	2019
DCO - Mission Planning RDP Approved	3	2018	3	2018
DCO - Mission Planning POR Award	1	2019	1	2019
DCO - Mission Planning POR Contract	2	2019	4	2020
DCO - Mission Planning Capability Drop #1	4	2019	4	2019
DCO - Mission Planning Capability Drop #2	1	2020	1	2020
DCO - Mission Planning Capability Drop #3	2	2020	2	2020
DCO - User Activity Monitoring Prototype Award	1	2019	4	2019
DCO - User Activity Monitoring RDP Approval	1	2019	1	2019
DCO - User Activity Monitoring POR Award	1	2020	1	2020
DCO - User Activity Monitoring POR Contract	1	2020	4	2020
DCO - User Activity Monitoring Employ on CASE Network	1	2020	2	2020

**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Army		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605041A / <i>Defensive CYBER Tool Development</i>	<b>Project (Number/Name)</b> EV5 / <i>Defensive CYBER Operations</i>

Events	Start		End	
	Quarter	Year	Quarter	Year
DCO - User Activity Monitoring Integrate with BDP	2	2020	3	2020
DCO - User Activity Monitoring Behavioral Analytics	3	2020	4	2020
DCO - Threat Emulation RDP Approval	1	2020	1	2020
DCO - Threat Emulation Program of Record	1	2020	4	2020
DCO - Development Environment (formerly Forge)	1	2019	4	2025
DCO - ARCYBER Rapid Cyber Prototyping	2	2020	4	2025
DCO - Management Services	1	2019	4	2025

**Note**

DCO is capability owner and full operational capability is defined when programs have completed the development and testing of the last capability drop within the IT Box (reaching full functional values of the RDP).

Current DCO IT box ends in FY22. Army Capabilities Manager (ACM, formerly TRADOC Capability Manager (TCM)) is working a new DCO IS ICD to align with a new IT Box construct for FY23-27.