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

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 2: Applied Research	R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	0.000	18.947	18.816	-	18.816	15.351	14.654	39.198	49.617	0.000	156.583
2CY: Information Trust Technology	-	0.000	1.222	1.220	-	1.220	0.516	0.000	0.000	0.000	0.000	2.958
3CY: Network Access and Effects Technology	-	0.000	3.945	4.191	-	4.191	6.727	6.882	6.959	6.959	0.000	35.663
5CY: Offensive Cyber Operations (OCO) Mirror Technology	-	0.000	1.000	0.999	-	0.999	0.999	0.999	1.010	1.010	0.000	6.017
CY1: Information Assurance and Network Resiliency Tech	-	0.000	3.357	3.488	-	3.488	3.473	3.875	4.145	4.186	0.000	22.524
CY6: Autonomous Cyber Technology	-	0.000	3.733	6.133	-	6.133	0.795	0.000	24.154	34.532	0.000	69.347
CY8: Cyber Security App Research and Exper Partner Tech	-	0.000	2.733	2.785	-	2.785	2.841	2.898	2.930	2.930	0.000	17.117
CY9: Decoy and Deterrence Technology	-	0.000	2.957	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.957

Note

In Fiscal Year (FY) 2020 this Program Element (PE) is realigned with continuity of effort from the following PEs:

- * PE 0602270A Electronic Warfare Technology
- * PE 0602782A Command, Control, Communications Technology
- * PE 0602783A Computer and Software Technology

A. Mission Description and Budget Item Justification

This PE designs cyber architectures, software, tools, and techniques to enable Cyber Electromagnetic Activities (CEMA) to counter adversary communications and harden the Army's tactical communications networks against cyber attacks. For offensive cyber effort against adversary communications, efforts investigate capabilities to identify and capture data traversing targeted networks for detection, identification, exploitation, direction finding, geolocation, and denial of service. For defensive cyber efforts hardening the Army's tactical network, efforts also investigate and applies robust cyber security technologies and techniques to advance software, algorithms and protocols utilized within tactical networks to protect against nation state level cyber attacks and maintain Warfighter confidence in network information by hardening the blue force attack surface.

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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 2: Applied Research</i>	R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber
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All FY20 adjustments align program financial structure to Army Modernization Priorities in support of the National Defense Strategy.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Priorities.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.000	18.947	21.718	-	21.718
Current President's Budget	0.000	18.947	18.816	-	18.816
Total Adjustments	0.000	0.000	-2.902	-	-2.902
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-2.902	-	-2.902

Change Summary Explanation

FY21 decrease related to Science and Technology financial restructuring.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army										Date: February 2020		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber				Project (Number/Name) 2CY / Information Trust Technology			
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
2CY: Information Trust Technology	-	0.000	1.222	1.220	-	1.220	0.516	0.000	0.000	0.000	0.000	2.958

Note
 In Fiscal Year (FY) 2020 this Project is realigned from:
 Program Element (PE) 0602782A Command, Control, Communications Technology:
 * Project CY2 Applied Defensive Cyber

A. Mission Description and Budget Item Justification

This Project develops defensive cyber technology to ensure that data traversing the network remains verified and has not been modified through unauthorized means.

Work in this Project complements PE 0603457A (C3I Cyber Advanced Development) / Project 8CY (Information Trust Advanced Technology).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

Work in this Project is performed by the United States Army Futures Command.

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

<p>Title: Information Trust Technology</p> <p>Description: This effort develops defensive cyber technology to ensure that data traversing the network remains verified and has not been modified through unauthorized means.</p> <p>FY 2020 Plans: Will investigate and leverage message integrity checking functionality similar to those adopted by cross domain security solutions to analyze fixed format message types against well documented data specifications; explore use of machine learning and virtual containment techniques to develop software-based application services that ensure the integrity of a message's data, origin, and chain of custody as it traverses the network; and investigate de-centralized lightweight blockchain techniques that can be leveraged to ensure a secure distributed ledger of messages and associated risk with automated analysis of attempted malicious modification.</p> <p>FY 2021 Plans: Will design and conduct experiments with specification based fixed format message checking and machine learning based integrity services that ensure the integrity of a message's data, origin, and chain of custody as it traverses the network; mature the trust score architecture that can provide real time analytics of the data through distributed processing and minimization of</p>	FY 2019	FY 2020	FY 2021
	-	1.222	1.220

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Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber	Project (Number/Name) 2CY / Information Trust Technology
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
network traffic; and design suitable de-centralized lightweight block chain algorithms that can be leveraged to ensure a secure distributed ledger of messages and associated risk with automated analysis of attempted malicious modification.			
<i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> Funding change reflects planned lifecycle of this effort.			
Accomplishments/Planned Programs Subtotals	-	1.222	1.220

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

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army										Date: February 2020		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber				Project (Number/Name) 3CY / Network Access and Effects Technology			
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
3CY: Network Access and Effects Technology	-	0.000	3.945	4.191	-	4.191	6.727	6.882	6.959	6.959	0.000	35.663

Note

In Fiscal Year (FY) 2020 this Project was realigned from:
 Program Element (PE) 0602270A Electronic Warfare Technology
 * Project CYB Applied Offensive Cyber

A. Mission Description and Budget Item Justification

This Project investigates the application of machine learning technologies to assist in capability development and mission execution processes with respect to Offensive Cyber Operations (OCO)/Radio Frequency (RF) Enabled capabilities.

Work in this Project complements PE 0603457A (C3I Cyber Advanced Development) / Project 9CY (Network Access and Effects Advanced Technology).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

Work in this Project is performed by the United States Army Futures Command.

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

Title: Applied OCO Techniques and Analytics	FY 2019	FY 2020	FY 2021
Description: This effort investigates the application of machine learning technologies to assist in capability development and mission execution processes with respect to OCO/RF Enabled capabilities.	-	3.945	3.945
FY 2020 Plans: Research use of non-kinetic effects (e.g. protocol-based/system-based/RF-enabled) against emerging commercial/military and hybrid technologies used in Adversary Command, Control, Communication, Computers, and Intelligence (AC4I) systems; investigate remote software delivery and software execution against AC4I; and research the ability to reduce cyber/RF operator cognitive burden using machine learning based decision aids and target pairing (e.g., cyber and RF enabled).			
FY 2021 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber	Project (Number/Name) 3CY I Network Access and Effects Technology

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
Will research techniques to expedite protocol-based vulnerability discovery against emerging targets; and investigate OCO capabilities that focus on commonalities between targets of interest in support of non-kinetic OCO effects against emerging hybrid commercial/military technologies in AC4I systems.			
Title: Command, Control and Communications Attack Description: This effort investigates RF Enabled access and effects against adversary Command, Control, Communication, Computers, and Intelligence (C4I) systems executed from agile OCO/RF Enabled firing platforms. FY 2021 Plans: Will research target design commonalities in support of non-kinetic Radio Frequency-enabled access and effects against emerging hybrid commercial/military technologies used within AC4I systems. FY 2020 to FY 2021 Increase/Decrease Statement: Planned research for electronic warfare technologies in support of Cyber.	-	-	0.246
Accomplishments/Planned Programs Subtotals	-	3.945	4.191

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

N/A

Remarks

D. Acquisition Strategy

N/A

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

Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber	Project (Number/Name) 5CY / Offensive Cyber Operations (OCO) Mirror Technology
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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
5CY: Offensive Cyber Operations (OCO) Mirror Technology	-	0.000	1.000	0.999	-	0.999	0.999	0.999	1.010	1.010	0.000	6.017

Note

In Fiscal Year (FY) 2020 this Project was realigned from:
 Program Element (PE) 0602270A Electronic Warfare Technology
 * Project CYB Applied Offensive Cyber

A. Mission Description and Budget Item Justification

This Project designs, creates, evaluates, and applies emerging cyber techniques and cyber situational awareness technologies to enhance Army capabilities. This Project leverages behavioral Modeling and Simulation to mitigate risks and investigates cyber collection and mapping technologies to offer real time cyber situational awareness to enable interpretation of current threats and predict future enemy activities. This allows commanders to develop operational courses of action in time to act decisively and in a pre-emptive manner.

All FY20 adjustments align program financial structure to Army Modernization Priorities in support of the National Defense Strategy.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

Work in this Project is performed by the United States Army Futures Command (AFC).

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

	FY 2019	FY 2020	FY 2021
Title: Offensive Cyber Operations Mirror Technology	-	1.000	0.999
Description: Will research emerging internet technologies that enable Offensive Cyber operations infrastructure maneuver within neutral (gray) cyberspace environment; conduct experiments within a modeling and simulation environment (to include behavioral components) to enhance rapid offensive cyber developed capabilities, cyber mission rehearsal, and training.			
FY 2020 Plans: Research emerging internet technologies that enable Offensive Cyber operations infrastructure maneuver within neutral (gray) cyberspace environment; and conduct experiments within a modeling and simulation environment (to include behavioral components) to enhance rapid offensive cyber developed capabilities, cyber mission rehearsal, and training.			
FY 2021 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020		
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber	Project (Number/Name) 5CY / Offensive Cyber Operations (OCO) Mirror Technology		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
Will investigate novel methods for an enhanced discrete event simulator required for future modeling and simulation environments, at scale with advanced behavioral models; and experiment on the traffic shaping mirror capability components. FY 2020 to FY 2021 Increase/Decrease Statement: Funding change reflects planned lifecycle of this effort.				
Accomplishments/Planned Programs Subtotals		-	1.000	0.999
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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

Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber	Project (Number/Name) CY1 / Information Assurance and Network Resiliency Tech
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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
CY1: <i>Information Assurance and Network Resiliency Tech</i>	-	0.000	3.357	3.488	-	3.488	3.473	3.875	4.145	4.186	0.000	22.524

Note

In Fiscal Year (FY) 2020 this Project is realigned from:
 Program Element (PE) 0602783A Computer and Software Technology:
 * Project Y10 Computer/Info Sci Tech

A. Mission Description and Budget Item Justification

This Project develops and characterizes techniques for detecting, disrupting, understanding and predicting complex adversarial activities and their impacts for developing agile, adaptive maneuvers in defense of information and networks (Agile Cyber Maneuver and Resilience); hardware, algorithms, and methods that jointly adapt to support uninterrupted communications (Autonomous Tactical Networking).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

Work in this Project is performed by the United States Army Futures Command.

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

	FY 2019	FY 2020	FY 2021
Title: Information Assurance and Network Resiliency Technology	-	3.357	3.488
Description: This effort designs and characterizes software for the protection of information and networks in wireless tactical environments. The goal is to develop software algorithms that detect and defeat malicious activities of adversaries in bandwidth-constrained tactical networks.			
FY 2020 Plans: Design and develop networking architectures with novel features such as the exploitation of quantum entanglement or the inclusion of a supervisory layer that has global protocol-stack visibility and reduced operational speed requirements so as to be able to effect joint optimization of complex objective functions across all network layers; and develop experimental methods and systems and execute experimentation to investigate and characterize protocols enabled by such networking architectures.			
FY 2021 Plans: Will develop and implement novel methods for network control that include joint optimization of the layers of the protocol stack, the adaptation of multiple diverse communication and networking modalities, and the optimization with respect to generalized mission-centric objectives; develop, implement, and experimentally validate protocols that feature improvements in energy usage,			

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Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber	Project (Number/Name) CY1 / Information Assurance and Network Resiliency Tech		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
jamming resistance, and security; utilize machine learning methods to detect, predict, and disrupt adversarial activities; and develop techniques to defend against adversarial influence of machine learning (ML) based Intrusion Detection Systems (IDS) methods. FY 2020 to FY 2021 Increase/Decrease Statement: Planned program increase to continue research in network resiliency.				
Accomplishments/Planned Programs Subtotals		-	3.357	3.488
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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

Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber				Project (Number/Name) CY6 / Autonomous Cyber Technology			
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
CY6: <i>Autonomous Cyber Technology</i>	-	0.000	3.733	6.133	-	6.133	0.795	0.000	24.154	34.532	0.000	69.347

Note
 In Fiscal Year (FY) 2020 this Project is realigned from:
 Program Element (PE) 0602782A Command, Control, Communications Technology:
 * Project CY2 Applied Defensive Cyber

A. Mission Description and Budget Item Justification

This Project investigates and applies robust cyber security techniques and applications to advanced communications and networking devices, software, algorithms and protocols utilized within wireless tactical networks to protect against nation state level cyber effects and maintain Warfighter confidence in network information, resources, identities and mission partners by hardening the blue force attack surface.

All FY20 adjustments align program financial structure to Army Modernization Priorities in support of the National Defense Strategy.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

Work in this Project is performed by the United States Army Futures Command (AFC).

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

Title: Autonomous Cyber Technology	FY 2019	FY 2020	FY 2021
Description: This effort develops defensive cyber technology to secure the automated network decisions (e.g., Primary, Alternate, Contingency, and Emergency (PACE)) and defend against adaptive, autonomous cyber attacks at machine speed.	-	3.733	6.133
FY 2020 Plans: Develop an interoperable Artificial Intelligence/Machine Learning (AI/ML) based cyber defense decision aid architecture supporting warfighter planning; and investigate concepts that support development of generative network algorithms and neural network software to simulate adversarial attacks on AI/ML algorithms that can be utilized to ensure trustworthiness of autonomous network configuration decisions and mitigate any vulnerable decisions.			
FY 2021 Plans: Will mature technology and validate the interoperable AI/ML based cyber defense decision aid architecture supporting warfighter planning; and mature and validate generative network algorithms and neural network software to simulate adversarial attacks on			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army	Date: February 2020
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Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber	Project (Number/Name) CY6 / Autonomous Cyber Technology
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
AI/ML algorithms that can be utilized to ensure trustworthiness of autonomous network configuration decisions and mitigate any vulnerable decisions.			
<i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> Funding in this effort increased to support the maturity and complexity of the AI/ML based cyber decision aid architecture.			
Accomplishments/Planned Programs Subtotals	-	3.733	6.133

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

Remarks

D. Acquisition Strategy
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army										Date: February 2020		
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber				Project (Number/Name) CY8 / Cyber Security App Research and Exper Partner Tech			
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
CY8: Cyber Security App Research and Exper Partner Tech	-	0.000	2.733	2.785	-	2.785	2.841	2.898	2.930	2.930	0.000	17.117

Note

In Fiscal Year (FY) 2020 this Project is realigned from:
 Program Element (PE) 0602782A Command, Control, Communications Technology:
 * Project CY2 Applied Defensive Cyber

A. Mission Description and Budget Item Justification

This Project investigates cyber electromagnetic activities (CEMA), cyber security devices, software and techniques to harden wireless communications networks against cyber-attacks and new mobile networking protocols that afford resilience within our networks to autonomically 'fight through' and/or evade hostile cyber effects.

All FY20 adjustments align program financial structure to Army Modernization Priorities in support of the National Defense Strategy.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

Work in this Project is performed by the United States Army Futures Command (AFC).

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

	FY 2019	FY 2020	FY 2021
Title: Cyber Security Applied Research & Experimentation Partner (AREP) Technology	-	2.733	2.785
Description: This effort will take innovative basic research theories from the Cyber Collaborative Research Alliance (CRA) and experimentally validate the hypothesis and create proof-of-concept defensive cyber software implementations. Work being accomplished under PE 0602782A (Command, Control, Communications Technology) / Project H92 (Communications Technology) complements this effort, and this effort is fully coordinated with the Army Research Lab Cyber Security Collaborative Research Alliance, PE 0601121A (Cyber Collaborative Research Alliance) / Project CB5 (Cyber Collaborative Research Alliance).			
FY 2020 Plans: Continue to investigate stealthy virtual machine migration techniques that incorporate machine learning to improve obscuring of critical network traffic that supports dynamic distribution of software; investigate efficient machine learning techniques the can potentially enhance high fidelity cyber decoys with adversarial action prediction qualities; investigate machine learning techniques that can detect and counter adversarial machine learning; investigate machine learning and game theoretical techniques that can operate on limited or 'dirty' data sets to make decisions on attack disruption; and investigate techniques that			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber	Project (Number/Name) CY8 / Cyber Security App Research and Exper Partner Tech

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
can reason on adversarial intent and potential predict adversary next move.			
<p>FY 2021 Plans: Will conduct experiments with efficient machine learning techniques and multi-user behavior modeling to enhance fidelity of cyber decoys and enable pre-predicting of adversarial action; conduct experiments with artificial intelligence (AI) techniques that can reason on adversarial tactic techniques and procedures (TTP's) to detect and counter adversarial machine learning; and conduct experiments with AI and game theoretical techniques that can operate on limited or 'dirty' data sets (data set that contains errors such as redundant, duplicate or incomplete data) to enable agility of tactical network assets to counter threat.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Funding change reflects planned lifecycle of this effort.</p>			
Accomplishments/Planned Programs Subtotals	-	2.733	2.785

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

N/A

Remarks

D. Acquisition Strategy

N/A

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

Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602213A / C3I Applied Cyber				Project (Number/Name) CY9 / Decoy and Deterrence Technology			
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
CY9: <i>Decoy and Deterrence Technology</i>	-	0.000	2.957	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.957

Note

In Fiscal Year 2020 (FY20) this Project is realigned from:
 Program Element (PE) 0602782A Command, Control, Communications Technology
 * Project CY2 Applied Defensive Cyber

In FY21 this Project is Eliminated.

A. Mission Description and Budget Item Justification

This Project designs technologies to counter enemy cyber threats by delaying, disrupting, and deterring their ability to successfully attack tactical systems, applications, and critical data.

Work in this Project complements PE 0603457A (C3I Cyber Advanced Development) / Project 7CY (Decoy and Deterrence Advanced Technology).

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

Work in this Project is performed by the United States Army Futures Command.

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

	FY 2019	FY 2020	FY 2021
Title: Decoy and Deterrence Technology	-	2.957	-
Description: This effort designs technologies to counter enemy cyber threats by delaying, disrupting, and deterring their ability to successfully attack tactical systems, applications, and critical data.			
FY 2020 Plans: Investigate concepts and mechanisms utilizing pattern matching algorithms and steganographic authentication; and investigate suitable machine learning and intelligent data transfer throttling techniques that can be closely coupled with cyber sensors to enable rapid generation and control of cyber decoys.			
FY 2020 to FY 2021 Increase/Decrease Statement: This Project in eliminated in FY21.			
Accomplishments/Planned Programs Subtotals	-	2.957	-

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Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602213A / <i>C3I Applied Cyber</i>	Project (Number/Name) CY9 / <i>Decoy and Deterrence Technology</i>
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C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A