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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Defense Advanced Research Projects Agency **Date:** March 2023

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603760E / <i>COMMAND, CONTROL AND COMMUNICATIONS SYSTEMS</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	249.724	298.050	321.591	-	321.591	242.909	260.853	263.187	273.464	-	-
CCC-02: <i>INFORMATION INTEGRATION SYSTEMS</i>	-	118.290	155.803	160.191	-	160.191	115.397	161.356	180.384	225.706	-	-
CCC-05: <i>CYBER SYSTEMS</i>	-	0.000	0.000	40.000	-	40.000	43.484	41.863	41.863	41.863	-	-
CCC-06: <i>COMMAND, CONTROL AND COMMUNICATION SYSTEMS</i>	-	131.434	142.247	121.400	-	121.400	84.028	57.634	40.940	5.895	-	-

A. Mission Description and Budget Item Justification

The efforts described in this Program Element (PE) address the Advanced Technology Development associated with the Command, Control and Communications Systems Program focused on demonstrating and evaluating advanced information systems research and development concepts.

The Information Integration Systems project develops and demonstrates technologies that will provide effective communications to U.S. forces. The success of military operations depends on timely, reliable, secure, and synchronized dissemination of command and control and relevant situational awareness information to every military echelon. While wired communications and networks are fairly well developed, providing assured high-bandwidth mobile wireless capabilities that match or exceed commercial wired infrastructure is needed to meet the demands of military users. Approaches to this goal include developing technologies in these areas:

- High-Capacity Links technologies - enables greater back-haul capability.
- Advanced Networking technologies - supports resilience, adaptability, scalability, and composable systems to enable adaptive effects webs.
- Low Probability of Detection and Anti-Jam (LPD/AJ) technologies - provides assured communications in very high-threat environments.
- Novel Radio Frequency and Spectral Sensing (RF/SS) - supports efficient spectrum management in congested environments and detection of electromagnetic threats.

The Cyber Systems project develops, implements, and demonstrates techniques, tools, and frameworks for the full range of cyber operations. Cyber is now ubiquitous to warfighting. For non-kinetic operations in advance of lethal conflict, cyber can be a powerful enabler of information operations that limit adversary options and deter adversary actions. For kinetic operations during lethal conflict, cyber can be a force multiplier and provide an asymmetric advantage. The Cyber Systems project aims to create operational prototypes based on the cyber technology developed in applied research programs (budgeted in PE 0602303E, Project IT-03), in the private sector, and in academia. The utility of the operational prototypes that are developed in this project will be assessed, and improvements made, based on demonstrations and evaluations conducted in collaboration with warfighters, acquisition programs, and combatant commands.

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B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	251.794	305.050	286.745	-	286.745
Current President's Budget	249.724	298.050	321.591	-	321.591
Total Adjustments	-2.070	-7.000	34.846	-	34.846
• Congressional General Reductions	0.000	-7.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	5.617	0.000			
• SBIR/STTR Transfer	-7.687	0.000			
• TotalOtherAdjustments	-	-	34.846	-	34.846

Change Summary Explanation

FY 2022: Decrease reflects SBIR/STTR transfer offset by reprogrammings.

FY 2023: Decrease reflects Congressional reduction to Reduce Growth.

FY 2024: Increase reflects initiation of the Constellation and Carcosa programs, and a shift from architecture design to development activities in the Space domain Wide Area Tracking & Characterization (Space-WATCH) program.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Advanced Research Projects Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603760E / <i>COMMAND, CONTROL AND COMMUNICATIONS SYSTEMS</i>				Project (Number/Name) CCC-02 / <i>INFORMATION INTEGRATION SYSTEMS</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
CCC-02: <i>INFORMATION INTEGRATION SYSTEMS</i>	-	118.290	155.803	160.191	-	160.191	115.397	161.356	180.384	225.706	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Information Integration Systems project develops and demonstrates technologies that will provide effective communications to U.S. forces. The success of military operations depends on timely, reliable, secure, and synchronized dissemination of command and control and relevant situational awareness information to every military echelon. While wired communications and networks are fairly well developed, providing assured high-bandwidth mobile wireless capabilities that match or exceed commercial wired infrastructure is needed to meet the demands of military users. Approaches to this goal include developing technologies in these areas:

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- Novel Radio Frequency and Spectral Sensing (RF/SS) - supports efficient spectrum management in congested environments and detection of electromagnetic threats.

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

	FY 2022	FY 2023	FY 2024
Title: Space-Based Adaptive Communications Node (Space-BACN)	10.000	31.958	32.104
<p>Description: The Space-Based Adaptive Communications Node (Space-BACN) program seeks to create a reconfigurable intersatellite optical communications terminal that has low size, weight, power, and cost (SWaP-C) and easily integrates onto small satellites, as well as a methodology for cross-constellation command and control (C2). Based on technologies developed in the Dynamic Network Adaptation for Mission Optimization (DyNAMO) program (budgeted in this PE/Project), Space-BACN will enable on-orbit communications and data relay between heterogeneous satellite constellations that operate on different optical intersatellite link (OISL) specifications. Today's government and commercial OISL-equipped satellites are unable to communicate with each other due to reliance on single-waveform terminals and a lack of standardization for waveform specifications. Space-BACN will overcome this challenge by developing a modular, reconfigurable optical terminal that is standard-agnostic and able to support most current and future OISL protocols. Space-BACN will also develop a C2 system that controls access and configures connectivity between constellations based on availability and mission requirements. Technology developed under this program will transition to the Services and the Space Development Agency (SDA).</p>			
<p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Conduct bench top demonstration of reconfigurable, high-speed communications components. - Perform evaluation of optical aperture in presence of vibration and thermal fluctuations. - Develop design for low SWaP-C optical terminal based on bench top design. 			

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Develop cyber hardening plan for communications terminal electronics, operating system, and command and control channel. - Specify interface requirements between communications terminal components. - Define initial application programming interfaces (APIs) and connectivity plan for different scenarios. <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Implement cyber hardening plan for communications terminal electronics, operating system, and command and control channel. - Demonstrate connectivity between optical aperture and reconfigurable modem designs. - Test and evaluate APIs and connectivity plan for different scenarios. - Conduct evaluation of cyber hardening measures. - Develop low SWaP-C, space qualifiable design of optical aperture. - Develop low SWaP-C, space qualifiable design of reconfigurable modem. <p>FY 2023 to FY 2024 Increase/Decrease Statement: The FY 2024 increase reflects minor program repricing.</p>			
<p>Title: Mission Integrated Network Control (MINC)</p> <p>Description: The goal of the Mission Integrated Network Control (MINC) program is to develop networking resource management technology to enable agile, self-healing, heterogeneous communications that adapt autonomously to battlefield situations and information needs. Technology developed by MINC will translate warfighter information needs and mission applications into requests for communication services and will autonomously discover and configure communications nodes and pathways to form and execute adaptive effects chains and move information where it is needed the most. Building on technologies developed in the Dynamic Network Adaptation for Mission Optimization (DyNAMO) program, budgeted in this PE/Project, MINC supports applications that will provide up-to-date information to support warfighter situational awareness, a customized common operating picture, and adaptive effects chains across joint all-domain operations in a highly contested environment. Technology from this program will transition to the Services.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Improve network resource discovery techniques to include resource modeling and forecasting. - Improve network orchestration by responding to network dynamics, deploying intelligent edge functions, and demonstrating control decisions aligned with mission objectives. - Design semi-autonomous mission-driven networking approaches to map mission needs to information needs. - Demonstrate integration with multiple transition-oriented applications. - Interface with transition partners through program workshops in order to develop operationally-relevant capabilities. - Conduct Government-led code reviews and evaluate security of the developed code. <p>FY 2024 Plans:</p>	16.000	29.022	25.035

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Demonstrate integration of resource modeling and forecasting into network discovery. - Demonstrate network orchestration across multiple heterogeneous networks and control decisions aligned with mission objectives. - Conduct Government-led code reviews and evaluate cybersecurity of the MINC system. - Collaborate with transition partners to complete integration of MINC into transition-oriented applications. - Analyze concepts of employment and coordinate with key transition partners to inform operational deployment. <p>FY 2023 to FY 2024 Increase/Decrease Statement: The FY 2024 decrease reflects a shift from system integration to transition partner coordination.</p>				
<p>Title: Strategic Chaos Engine for Planning, Tactics, Experimentation and Resiliency (SCEPTER)</p> <p>Description: Based on technologies developed under the Air Space Total Awareness for Rapid Tactical Execution (ASTARTE) program (budgeted in this PE/Project), the Strategic Chaos Engine for Planning, Tactics, Experimentation and Resiliency (SCEPTER) program will develop machine-generated strategies for strategic planning. SCEPTER will discover novel and surprising Courses of Action (CoAs) by exploring the high complexity state-action space of military engagements at high machine speeds. High CoA exploration speed is enabled by tailorable abstraction of trusted, expert informed models. A few of the highest performing CoAs will be validated in higher fidelity simulators along with a thorough human review. Initially, SCEPTER will generate synthetic CoAs to identify vulnerabilities in human generated plans. In later stages of the program, SCEPTER will be applied in developing novel plans. Ultimately, SCEPTER will continually evaluate war plans as changes in theater occur (blue and/or red force layoffs, new equipment, etc.) to find new opportunities and weaknesses and help prevent surprise from competitors. Technology developed under this program will transition to the Services.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Develop initial methods for incorporating unscripted goal-oriented agents into CoA generation and evaluation. - Develop initial methods for managing and controlling the exponential growth of the global state-action space. - Demonstrate the performance of machine-derived plans against three or more military scenarios. <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Develop advanced methods of incorporating unscripted goal-oriented agents into CoA generation and evaluation. - Develop advanced methods for managing and controlling the exponential growth of the global state-action space. - Demonstrate advanced performance of machine-derived plans against three or more military scenarios. - Compare machine-derived planning against human-derived planning. <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>		2.000	15.000	20.020

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
The FY 2024 increase reflects a shift from initial development to advanced development.				
Title: Air Space Total Awareness for Rapid Tactical Execution (ASTARTE)		24.616	23.947	19.074
<p>Description: The Air Space Total Awareness for Rapid Tactical Execution (ASTARTE) program will develop and demonstrate innovative approaches to create a joint, regional (covering the span of an Army division) airspace picture and dynamically managing local airspace operations in an Anti-Access/Area Denial (A2/AD) environment without requiring conventional high-power radars or communications. This capability will support airspace dynamic planning and real-time re-planning and deconfliction of a wide array of airborne systems and long-range fires. ASTARTE will identify and deconflict operational missions in a complicated environment filled with ground and airborne threats, friendly fires, precision guided munitions, manned and unmanned aircraft, and civilian aviation. Based on technologies developed in the Systems of Systems-Enhanced Small Units (SESU) program (budgeted in PE 0603766E/Project NET-01), ASTARTE will develop a virtual and live testbed for airspace management systems, a series of algorithms for airspace planning and operations, and a collection of sensors, leveraging existing and novel sensors for real-time spatial and temporal tracking of airborne platforms. ASTARTE will be compatible with legacy command and control (C2) airspace management tools to take advantage of prior investments in technologies, such as human-machine interfaces, and to minimize costs and the impact on training. Technologies from this program will transition to the Army and the Air Force.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Implement understanding and decision algorithms in software to run in Army Command Post Computing Environment. - Integrate ASTARTE sensor architecture with existing DoD sensor systems. - Evaluate ASTARTE sensor network performance in live fire exercises to verify predicted performance. - Conduct virtual and live experimentation to assess operational use of ASTARTE technology in joint exercises. - Refine ASTARTE understanding and decision software based on virtual and live experimentation. <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Conduct additional live experimentation to assess operational use of ASTARTE technology in joint exercises. - Conduct live maneuver and fire exercises with ASTARTE technology and integrated sensor network to assess operational use of ASTARTE. - Begin transition and integration of ASTARTE capability into Programs of Record. <p>FY 2023 to FY 2024 Increase/Decrease Statement: The FY 2024 decrease reflects the shift from prototyping and development to transition and integration with Programs of Record.</p>				
Title: Resilient Networked Distributed Mosaic Communications (RNDMC)		22.153	18.762	17.263
Description: Resilient Networked Distributed Mosaic Communications (RNDMC) aims to provide Beyond-Line-Of-Sight (BLOS) tactical communications for an Anti-Access/Area Denial (A2/AD) environment by developing low-cost expendable transceivers				

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p>that may be hand carried or hosted on ground platforms, autonomous air vehicles, high altitude platforms, and low-cost/low earth orbit satellites. RNDMC plans to use a combination of synchronized transceivers and tactical radios to enhance desired signals and reject intentional and unintentional interference. Based on technologies developed in the Protected Forward Communications (PFC) program (budgeted in this PE/Project), RNDMC will design, develop, and demonstrate a distributed field of expendable transceivers, providing a robust, low-cost, BLOS tactical communications system that degrades gracefully as transceiver nodes become unavailable. The RNDMC goal is a demonstration on ground and air platforms and will not be reliant on Global Positioning System (GPS). Technologies from this program will transition to the Services.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Update system designs based on lessons learned from the long-link test. - Conduct terrestrial test to validate RNDMC approach in a multipoint-to-multipoint configuration. - Integrate RNDMC payload onto unmanned airborne platforms to support long-range relay testing. <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Conduct field exercise to validate RNDMC approach in a multi-hop relay and multipoint-to-multipoint configuration. - Determine tactical airborne platform for hosting RNDMC relay nodes. - Test the capability to compute the relative positions of the RNDMC transceivers without using GPS. <p>FY 2023 to FY 2024 Increase/Decrease Statement: The FY 2024 decrease reflects a shift from test and integration to field exercises and demonstration.</p>			
<p>Title: Generating Communications Channels to Operate (GeCCO)</p> <p>Description: The Generating Communications Channels to Operate (GeCCO) program will enable secure communications for military operations in contested environments by creating communications paths that assure privacy and availability. Building upon the technologies developed in the Open, Programmable, Secure 5G (OPS-5G) program, budgeted in PE 0602303E, Project IT-03, this effort will develop advanced and flexible communication architectures that employ new virtual network services. GeCCO will enable communications by leveraging commercial networks. Future distributed operations across the globe will require a small logistical footprint and the flexibility to adapt to the available communication environments (commercial and military). GeCCO will address the secure use of already widespread advanced cellular networks to preserve privacy of communications by preventing pattern-of-life analysis. Technology developed under this program will transition to the Services.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Initiate development of the underlying service-deployment architecture. <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Research privacy-preserving techniques aligned with operational requirements. 	-	3.000	16.695

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Initiate pattern-of life analysis of network traffic. - Begin integration of network services with the network architecture through Government-led integration events. - Develop framework to deploy and manage software services. <p>FY 2023 to FY 2024 Increase/Decrease Statement: The FY 2024 increase reflects a shift from initial development to integration.</p>				
<p>Title: Space domain Wide Area Tracking & Characterization (Space-WATCH)</p> <p>Description: The Space domain Wide Area Tracking & Characterization (Space-WATCH) program will enable real-time persistent tracking of objects in low earth orbit (LEO) and provide actionable intelligence on tactical timescales. Based on technologies developed in the Geospatial Cloud Analytics (GCA) program (previously budgeted in this PE/Project), Space-WATCH will enable detection and tracking of objects orbiting the Earth on much faster timescales than current ground-based sensors are capable of by combining proliferated, on-orbit sensors with automated data fusion. By working with commercial companies operating in LEO to host low-cost sensors on their space platforms, Space-WATCH will employ thousands of sensors on orbit to continuously gather data. Space-WATCH will utilize automated algorithms to process and fuse all the collected data for anomaly detection and false alarm reduction, making the data useful and actionable to ground-based operators. This comprehensive data set of objects in LEO and real-time information on anomalies will greatly increase the accuracy of the Department of Defense s space situational awareness, as well as enable appropriate responses to anomalies, such as maneuvering space assets out of the way of orbital debris. Technology developed under this program will transition to the U.S. Space Force and Space Development Agency.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Design system architecture. <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Develop initial as-a-service market structure. - Develop and build sensors. - Conduct system integration and software testing. - Launch sensors on host platforms. - Develop sensor fusion and anomaly detection algorithms. - Conduct data fusion testing with simulated data. - Instantiate functional marketplace. <p>FY 2023 to FY 2024 Increase/Decrease Statement: The FY 2024 increase reflects a shift from architecture design to development.</p>		-	3.000	30.000
Title: Composable Logistics and Information Omniscience (LogX)		21.198	11.541	-

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p>Description: The Composable Logistics and Information Omniscience (LogX) program is developing and demonstrating software for real-time logistics and supply chain system situational awareness (diagnosis), future state prediction (prognosis), and resilience at unprecedented scale and speed. The software will integrate a range of technical innovations spanning human-machine interface, dynamic data visualization, and distributed/collaborative software design. Based upon technologies developed in the Prototype Resilient Operations Testbed for Expeditionary Urban Systems of Systems (PROTEUS) program (budgeted in PE 0603766E, Project NET-01), the LogX capability will allow users to achieve a more distributed and resilient logistics command and control (C2) system utilizing planned cloud-based data environments. The new capability will be tested in an experimental environment tied to current logistics datasets. Technologies from this program will be transitioned to the Services and Combatant Commands, including U.S. Transportation Command and the Defense Logistics Agency (DLA).</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Demonstrate a scalable and deployable capability in a range of operational settings with transition partners. - Demonstrate ability to provide enhanced awareness using operational logistics and supply chain data to inform decision making across the logistics enterprise. - Demonstrate the ability to improve resilience within the logistics enterprise. <p>FY 2023 to FY 2024 Increase/Decrease Statement: The FY 2024 decrease reflects program completion.</p>			
<p>Title: Protected Forward Communications (PFC)</p> <p>Description: The collaborative application of combat power in ground tactical operations demands reliable exchange of rich information and precise coordination of actions across various echelons. These operations take place over three critical conversations: (1) to coordinate the actions of a local group, (2) to coordinate group and airborne assets, and (3) to interact with rear echelon command. The communication links over which these three conversations take place are at risk from jamming and geolocation operations conducted with increasingly sophisticated exploitation and denial technology employed by our adversaries. This problem is compounded by demands for ever-increasing capacity of these links. The Protected Forward Communications (PFC) program will build on technical advances in resilient, efficient, and aware communications technology to design a single communication architecture to protect all three conversations from jamming and geolocation. PFC is generally applicable to small unit operations and is particularly relevant to the close air support (CAS) function typically executed by the Joint Terminal Attack Controller (JTAC) or Forward Air Controller (FAC). The PFC program will transition to the Services.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Demonstrate dual mode (communications and radar) capability over air-to-ground link. - Demonstrate integrated communications capabilities to transition partners based upon mission scenarios and user needs. 	11.325	10.360	-

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
- Demonstrate protected beyond-line-of-sight communication to Service transition partner.			
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> The FY 2024 decrease reflects program completion.			
<i>Title:</i> Network Universal Persistence (Network UP) <i>Description:</i> Current radios send network control information and data using the same wireless link. This produces a common failure mode when that wireless link degrades. In many of today's military wireless networks, even brief wireless link outages create a loss of network connectivity that can take minutes to recover once the wireless link is re-established. During these network outages, data transmission is not possible. The Network UP program will develop and demonstrate radio technology that maintains network reliability through periods of frequent signal degradation that routinely occur in military operational environments. Isolation of critical control channel information in a separate, robust wireless link will allow creation of a protected control channel that can maintain network reliability even when the data channel is lost. The Network UP program will develop technology and a prototype system that enables military wireless networks to send data over dynamic, unstable wireless links. The program will develop approaches to separate the control and data planes across different wireless links and design and implement mechanisms to maintain synchronization across those separate links. Technologies developed under this program will transition to the U.S. Army's Integrated Network Technology Program of Record. <i>FY 2023 Plans:</i> - Transition Network UP technology to the U.S. Army's Integrated Network Technology Program of Record. <i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> The FY 2024 decrease reflects program completion.	10.998	9.213	-
Accomplishments/Planned Programs Subtotals	118.290	155.803	160.191

C. Other Program Funding Summary (\$ in Millions) N/A
Remarks
D. Acquisition Strategy N/A

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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
CCC-05: <i>CYBER SYSTEMS</i>	-	0.000	0.000	40.000	-	40.000	43.484	41.863	41.863	41.863	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The Cyber Systems project develops, implements, and demonstrates techniques, tools, and frameworks for the full range of cyber operations. Cyber is now ubiquitous to warfighting. For non-kinetic operations in advance of lethal conflict, cyber can be a powerful enabler of information operations that limit adversary options and deter adversary actions. For kinetic operations during lethal conflict, cyber can be a force multiplier and provide an asymmetric advantage. The Cyber Systems project aims to create operational prototypes based on the cyber technology developed in applied research programs (budgeted in PE 0602303E, Project IT-03), in the private sector, and in academia. The utility of the operational prototypes that are developed in this project will be assessed, and improvements made, based on demonstrations and evaluations conducted in collaboration with warfighters, acquisition programs, and combatant commands.

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

	FY 2022	FY 2023	FY 2024
<p>Title: Constellation</p> <p>Description: The Constellation program aims to develop technologies, capabilities, and prototype systems to enable full spectrum military cyberspace operations to deter, disrupt, and if necessary, defeat adversary cyber actors to defend the U.S. Technologies of interest include but are not limited to artificial intelligence (AI), machine learning (ML), and data science (DS); resilient software, networking, and computing systems; data and information assurance; and cyber threat intelligence. The work achieves high relevance through close coordination with U.S. cyber operators and the use as appropriate of development, security, and operations (DevSecOps) and other collaborative development processes. The work achieves high velocity through streamlined acquisition, assessment, approval, and deployment processes. Constellation will enable the rapid and continuous delivery of cyber technologies, capabilities, and prototype systems into operational use for the DoD. The Constellation program is funded in PE 0602303E, Project IT-03 and PE 0603760E, Project CCC-05 to facilitate rapid transition of cyber technologies and laboratory prototypes from applied research to operational prototypes.</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Coordinate with systems owners to understand the advantages of pipeline and continuous/incremental integration/delivery development models as a means to achieve rapid deployment to operations. - Coordinate with approval authorities to develop streamlined processes for operational readiness (OR) assessment and continuous authority to operate (cATO). - Coordinate with operators from Commands and Services to prioritize cyber technologies and capabilities and initiate collaborative development of operational prototypes. <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>	-	-	17.000

PE 0603760E: *COMMAND, CONTROL AND COMMUNICATIONS SYST..*

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Advanced Research Projects Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603760E / <i>COMMAND, CONTROL A ND COMMUNICATIONS SYSTEMS</i>	Project (Number/Name) CCC-05 / <i>CYBER SYSTEMS</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
The FY 2024 increase reflects program initiation.			
<p>Title: Carcosa</p> <p>Description: The Carcosa program will develop and demonstrate cyber technologies for use by warfighters during tactical operations. Carcosa will develop cyber technology to provide warfighters in the field with enhanced situational awareness of their immediate battlespace. Carcosa technologies will be integrated in prototype tools suitable for use by warfighters with a range of cyber knowledge and skills, including both cyber novices and advanced cyber practitioners.</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Collaborate with military stakeholders and explore cyber technology to provide warfighters in the field with enhanced situational awareness of the immediate battlespace. - Collaborate with operational units to develop new tactics, techniques, and procedures (TTPs) enabled by organic cyber capabilities. - Collaborate with potential transition partners to formulate proof-of-concept demonstrations of organic cyber in support of tactical operations. <p>FY 2023 to FY 2024 Increase/Decrease Statement: The FY 2024 increase reflects program initiation.</p>	-	-	23.000
Accomplishments/Planned Programs Subtotals	-	-	40.000

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 2024 Defense Advanced Research Projects Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603760E / <i>COMMAND, CONTROL AND COMMUNICATIONS SYSTEMS</i>	Project (Number/Name) CCC-06 / <i>COMMAND, CONTROL AND COMMUNICATION SYSTEMS</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
CCC-06: <i>COMMAND, CONTROL AND COMMUNICATION SYSTEMS</i>	-	131.434	142.247	121.400	-	121.400	84.028	57.634	40.940	5.895	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This project funds classified DARPA programs that are reported in accordance with Title 10, United States Code, Section 119(a)(1) or its successor.

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

	FY 2022	FY 2023	FY 2024
Title: Classified DARPA Program	131.434	142.247	121.400
Description: This project funds Classified DARPA Programs. Details of this submission are classified.			
FY 2023 Plans: Details will be provided under separate cover.			
FY 2024 Plans: Details will be provided under separate cover.			
FY 2023 to FY 2024 Increase/Decrease Statement: Details will be provided under separate cover.			
Accomplishments/Planned Programs Subtotals			121.400

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

N/A

Remarks

D. Acquisition Strategy

N/A