Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Office of the Secretary Of Defense	**Date:** March 2023
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603618D8Z / *Joint Electronic Advanced Technology*

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	14.773	17.710	24.155	19.793	-	19.793	20.350	20.808	21.243	21.707	Continuing	Continuing
245: *EW Enterprise Exploration and Innovation*	14.773	17.710	24.155	19.793	-	19.793	20.350	20.808	21.243	21.707	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Deter Aggression and Prevail in Conflict, Build Sustainable and Long-Term Advantage, and Building a Resilient Joint Force and Defense Ecosystem.

The electromagnetic spectrum (EMS) environment (EME) is the largest and most complex warfighting environment. It is universally pervasive, largely unseen, and can only be perceived through the use of advanced electronic technologies. Understanding and addressing EME warfighting challenges is essential to all military operations. It is through the use of EMS technologies that we perceive operational realities, the state and disposition of all military and nonmilitary forces and groups within operational environments, and coordinate all actions of our military forces.

Historically, the United States has had significant technological advantages in EMS warfighting technologies, specifically sensors, communications, and countermeasures. This superiority is being challenged due to the rapid commercialization of advanced electronic systems and components, the broad proliferation of these technologies, and the concurrent rise of cyber-related EMS technologies. Potential adversaries have leveraged these advances to develop and field competing and asymmetric capabilities to offset historic U.S. advantages. These efforts have made U.S. operations in the EMS and cyberspace significantly more difficult, and they continue to do so at an accelerating rate. Adversary radars are evolving from fixed analog systems to programmable digital variants with agile waveforms and unknown behaviors making preprogrammed electronic countermeasure less effective. Foreign developments include new generations of challenging threats ranging from small unmanned air systems and easily transportable Man-Portable Air Defense Systems (MANPADS) to dedicated anti-access area denial (A2/AD) military systems including integrated air defense systems and increasingly capable cruise and ballistic missiles that have incorporated the most advanced sensors, communication and electromagnetic warfare (EW) technologies.

Because the accelerating pace of technological innovation has increased the rate at which new EMS and cyber threats are appearing, the effective operational lifetime of many advanced technologies has decreased. For all of these reasons, the Department of Defense (DoD) must develop and field new EW and EW-Cyber capabilities faster, at much lower costs, to be broadly integrated and employed across the entire force structure.

The Joint Electronic Advanced Technology (JEAT) program was established to address these challenges through efforts designed to substantially accelerate the development and maturing of innovative technologies in order to: (1) address new EW and EW-Cyber warfighting challenges; and (2) provide new, leap-ahead EMS

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warfighting capabilities to ensure U.S. warfighters will always have decisive EW and EW-Cyber overmatch capabilities. The JEAT program specifically focuses on EW and EW-Cyber-related technologies that fall outside the Services' purviews or are developed synergistically with a transition to the Services post maturation.

B. Program Change Summary ($ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	18.164	19.218	20.141	-	20.141
Current President's Budget	17.710	24.155	19.793	-	19.793
Total Adjustments	-0.454	4.937	-0.348	-	-0.348
• Congressional General Reductions	-	-0.063			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	5.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-0.454	-	-0.348	-	-0.348

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

	FY 2022	FY 2023
Project: 245: *EW Enterprise Exploration and Innovation*		
Congressional Add: *Photonically Distributed Antenna System*	-	5.000
Congressional Add Subtotals for Project: 245	-	5.000
Congressional Add Totals for all Projects	-	5.000

Change Summary Explanation

FY 2024 minimal decrease due to programmatic adjustments.

Exhibit R-2A, **RDT&E Project Justification:** PB 2024 Office of the Secretary Of Defense	**Date:** March 2023
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603618D8Z / *Joint Electronic Advance d Technology* — **Project (Number/Name)** 245 / *EW Enterprise Exploration and Innovation*

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
245: *EW Enterprise Exploration and Innovation*	14.773	17.710	24.155	19.793	-	19.793	20.350	20.808	21.243	21.707	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Electromagnetic Warfare Enterprise Exploration and Innovation (EW E&I) research efforts identify, explore, and accelerate the maturing and demonstration of new EW-related and EW-Cyber-related technologies. Technologies enabling and facilitating electromagnetic attack (EA), electromagnetic protection (EP), and electromagnetic support (ES) are covered, including technologies enabling “over-the-air” algorithmic warfare utilizing existing and new generations of EW, radio frequency (RF) and optical systems. To address increasingly sophisticated evolving threats, EW E&I efforts also seek to accelerate the development of non-traditional EMS sensing and ultra wideband approaches (greater than a decade of frequency) to enable continuous radiofrequency (RF) surveillance and distributed phase synchronous RF sensing. EW E&I research will explore technologies that will extend Department EMS capabilities to complex and contested environments and will provide sensing stand-off and EA capabilities against emerging threats. Distributed multi-domain sensing concepts will leverage advanced analysis and robust data fusion in order to accurately depict complex and dynamic EMS environments. EW E&I research products are explored and developed in state-of-the-art laboratories and validated side-by-side with numerous competing technologies and systems from the Services, industry, academia, and National laboratories in live/virtual/constructive (LVC) experimentation environments and in complex field experimentation events under real-world conditions. This approach significantly accelerates the identification and development of the most effective EW technologies while concurrently reducing developmental costs.

Significant advances in all areas impacting EW have resulted in new generations of threats that are challenging the U.S.’s traditional dominance in EW. EW E&I efforts address these challenges and also develop new technologies to ensure that U.S. warfighters maintain decisive overmatch offensive and defensive EW capabilities. EW E&I efforts specifically focus on areas where Service investments are lagging to accelerate the development and transition of multi-Service, multi-mission EW technologies.

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2022**	**FY 2023**	**FY 2024**
Title: EW Enterprise Exploration and Innovation (EW E&I)	17.710	19.155	19.793
Description: Current EW E&I research thrusts include Passive Sensor Detection and Defeat (PSDD), Platform Self-Protection (PS-P), EW Technology Enablers (EW Tech), EW-Cyber Interface (EWCI), and EW Collaboration and Cognizance (EW C&C). Passive Sensor Detection and Defeat (PSDD): Modern integrated air defense systems (IADS) employ a variety of radar sensing technologies to detect, target and engage adversary aircraft. While classic IADS radars emitted radiofrequency radiation and collected the radiation that was reflected off targets within their field of view with the same aperture, computational advances have enabled passive (non-emitting) radar radiation receivers to capture and process the radar radiation reflected off targeted systems that was emitted by other emitters, including those of radars and other emitters of opportunity. Passive radar systems are			

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024

thus capable of providing targeting solutions to engagement assets (missiles, aircraft, directed energy, etc.) even though they do not emit radar radiation. This makes these systems a much more complex threat to U.S. offensive systems because traditional EW countermeasures such as jamming cannot be employed against these passive radars since they are largely undetected by our radar warning systems. This leaves U.S. aircraft confronted by IADS containing passive sensors vulnerable to unforeseen attacks. PSDD research identifies, explores and accelerates the maturing and demonstration of new technologies to provide defensive capabilities against passive detection/tracking/engagement sensor systems.

Platform Self-Protection (PS-P): A wide variety of radiofrequency (RF) and electro-optical (EO) technologies are employed by modern militaries to detect, track, and engage attacking military systems. RF sensor systems including IADS radars, radars on ships, aircraft, ground, and naval vessels, and seekers on ballistic, cruise, air-to-air, surface-to-air missile are used to detect and provide targeting and engagement solutions to counter adversaries' military systems. EO systems have been incorporated into missile seekers and are also associated with high energy laser engagement systems for the same reasons. To ensure successful U.S. military actions, technologies that protect U.S. platforms and facilities against these new generations of much more capable RF and EO detection/targeting/engagement sensors and seekers are essential. This thrust identifies, explores, and accelerates the maturing and demonstration of new technologies to counter adversaries' advanced RF and EO sensor and seeker threats.

Electromagnetic Warfare Technology Enablers (EW Tech): Significant advances in materials, electronics (including photonics, plasmonics, spintronics, magnetronics, etc.), RF and communications sciences, optical and laser sciences, information and computational sciences, and quantum sciences are enabling new generations of extremely powerful applications in a wide variety of fields. For example, artificial intelligence and machine learning (AI/ML) technologies are beginning to impact electromagnetic spectrum (EMS) operations. The advantages that AI/ML approaches can provide are considerable, but multiple runs addressing the same scenarios often provide disparate results for both the same assets in the same scenarios and for different assets in different locations within the scenarios. Ascertaining the optimal employment tactics and strategies using AI/ML thus becomes difficult for offensive and defensive operations in both proactive and reactive EW modes. EW Tech research seeks to leverage the latest advances in all of these areas to enable commensurate advances in the EW and EW-Cyber warfighting capabilities.

EW-Cyber Interface (EWCI): The ability to impact system logic using EW and other RF systems provides powerful new options for EW application. EWCI research efforts thus identify, explore, and accelerate the maturing and demonstration of new EW-Cyber-related technologies. Significant advances in the application of digital EW have resulted in new generations of threat systems that are challenging the United States' traditional dominance in these areas. EW E&I efforts address these threats and develop new technologies to ensure U.S. warfighters maintain decisive overmatch EW capabilities.

EW Collaboration and Cognizance (EW C&C): EW C&C efforts focus on maintaining an awareness of global research and development (R&D) efforts impacting EMS, EW and EW-Cyber warfighting technologies; guiding, facilitating, ensuring the

Exhibit R-2A, RDT&E Project Justification: PB 2024 Office of the Secretary Of Defense		Date: March 2023
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
maximum levels of developmental collaboration across DoD; providing Office of the Secretary of Defense (OSD) oversight of technology development efforts across the DoD EW and EW-Cyber developmental communities; and providing decisional insights to senior leaders and decision-makers so they can more effectively direct all Department EW and EW-Cyber technology development programs and processes. ***FY 2023 Plans:*** Passive Sensor Detection and Defeat (PSDD): • SILENT SWARM 23 (SS-23): Complete assessment and final reports for SS-22 and begin planning and development the SS-23 field experimentation venue. SS-23 will be conducted in 4Q FY 2023. • Characterization of Passive Systems (COPS) – Classified project in collaboration with PMR 51 and the FFRDCs. Electromagnetic Warfare Technology Enablers (EW Tech): • Magnetic Field Sensing (MFS): Assess the Josephson junction magnetic sensor to recreate the EMS from the magnetic field component thereby bypassing the need for an aperture enabling ultra wideband sensing. • Reconfigurable Intelligent Surfaces (RIS): Assess the feasibility of applying meta-surface materials to modify the radar scattering of surfaces for EW applications across multiple domains. • Dynamically Configurable Apertures (DCAs): Leverage the advances in additive manufacturing technology to dynamically adapt to changes in the EMS by dynamically controlling the size, frequency, gain and polarization of the RF front end and affiliated components. • Innovative Low-Cost Experimentation (LCE): Develop plans and conduct the second and third LCE event at the Playas, NM experimentation range. Continue leveraging EW capabilities in these events to explore CONOPS implications and wargaming applications. • Spectrum Access Sensor for Situational analysis (SASSY): Congestion within the EMS significantly impacts military operations in a variety of important ways. Most importantly, frequencies that provide significant amounts of militarily-valuable information are coincident with civilian-use frequencies. To utilize this important information without adversely affecting civilian operations is extremely important for operational situational analysis. This effort will begin exploring cognitive RF technologies to enable cognitive radar applications within congested EMS environment. Low-cost and expendable EA payloads for small UAS capable of loitering in an AOR and deliver effects quickly and with low risk to blue assets. • VIRTUAL STINGRAY 23 (VS-23): Building upon the results of VS-22, VS-23 will expand the numbers of users and capabilities involved and increase levels of anchoring of EW and EW enabled cyber effects in a secure virtual and constructive setting to real-world offensive EW and Cyber effects in a distributed and networked laboratory environments. EW-Cyber Interface (EWCI):			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Office of the Secretary Of Defense		Date: March 2023
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024

• Preventing Blue Force Fratricide (PBFF): Applying AI/ML algorithms to more accurately discriminate between blue and red systems in complex and contested EMS environments in real time.
• Precision RF-enabled Access & Effects for the IoT Environment (PRAETOR): Advancement and refinement of initial capabilities developed in FY 2022 will continue, culminating in several real-world in-the-field assessments of PRAETOR effects and their efficacy.

EW Collaboration and Coordination (EW C&C):
• Continue FY 2022 OUSD(R&E) efforts to guide, shepherd, and oversee all EW and EW-Cyber technology development across the DoD.

FY 2024 Plans:
Passive Sensor Detection and Defeat (PSDD):
• SILENT SWARM 23 (SS-23): Complete assessment and final reports for SS-22 and begin planning and development the SS-23 field experimentation venue. SS-23 will be conducted in 4Q FY 2023.
• Characterization of Passive Systems (COPS) – Classified project in collaboration with PMR 51 and the FFRDCs.

Electromagnetic Warfare Technology Enablers (EW Tech):
• Magnetic Field Sensing (MFS): Assess the Josephson junction magnetic sensor to recreate the EMS from the magnetic field component thereby bypassing the need for an aperture enabling ultra wideband sensing.
• Reconfigurable Intelligent Surfaces (RIS): Assess the feasibility of applying meta-surface materials to modify the radar scattering of surfaces for EW applications across multiple domains.
• Dynamically Configurable Apertures (DCAs): Leverage the advances in additive manufacturing technology to dynamically adapt to changes in the EMS by dynamically controlling the size, frequency, gain and polarization of the RF front end and affiliated components.
• Innovative Low-Cost Experimentation (LCE): Develop plans and conduct the second and third LCE event at the Playas, NM experimentation range. Continue leveraging EW capabilities in these events to explore CONOPS implications and wargaming applications.
• Spectrum Access Sensor for Situational analysis (SASSY): Congestion within the EMS significantly impacts military operations in a variety of important ways. Most importantly, frequencies that provide significant amounts of militarily-valuable information are coincident with civilian-use frequencies. To utilize this important information without adversely affecting civilian operations is extremely important for operational situational analysis. This effort will begin exploring cognitive RF technologies to enable cognitive radar applications within congested EMS environment.
Low-cost and expendable EA payloads for small UAS capable of loitering in an AOR and deliver effects quickly and with low risk to blue assets.

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
• VIRTUAL STINGRAY 23 (VS-23): Building upon the results of VS-22, VS-23 will expand the numbers of users and capabilities involved and increase levels of anchoring of EW and EW enabled cyber effects in a secure virtual and constructive setting to real-world offensive EW and Cyber effects in a distributed and networked laboratory environments. EW-Cyber Interface (EWCI): • Preventing Blue Force Fratricide (PBFF): Applying AI/ML algorithms to more accurately discriminate between blue and red systems in complex and contested EMS environments in complex and contested EMS environments in real time. • Precision RF-enabled Access & Effects for the IoT Environment (PRAETOR): Advancement and refinement of initial capabilities developed in FY 2022 will continue, culminating in several real-world in-the-field assessments of PRAETOR effects and potential mission impacts. EW Collaboration and Coordination (EW C&C): • Continue FY 2022 OUSD(R&E) efforts to guide, shepherd, and oversee all EW and EW-Cyber Science and Technology research and development across the DoD. QSES: • Quantum Small Electromagnetic Sensors using superconducting quantum interference device (SQUID) sensor arrays to create small, high performance and flexible receive capabilities to enable evolved CONOPS and a more covert battlespace presence. CHEAP DATE: • Fire and forget EW submunition uses adversary RF for guidance and delivers EA or cyber effects over hours or days when within range. NARWHAL: • Expendable decoy hosted in a sonobuoy or air vehicle. Cognitive EA Cocktail HITL/SITL Experimentation: • Cognitive EA techniques capable of countering detection and track modes of operation of complex emitters using known and previously unseen waveforms. EM Skins for Fully Agile EMSO and Reconfigurable Intelligent Surfaces: • Dynamically reconfigurable reflective properties for vehicle surfaces to reduce or tailor RCS, beamform or enhance transmit or receive functions.			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Multi-Domain Orchestrated Spectrum SA for EW&C: • System for distributed, low-cost and low SWaP EM sensors adaptable for integration across multiple domains and operable under adaptive control in a self-healing networked configuration. RF Spectrum Awareness Toolkit: • Provide high performance and high instantaneous bandwidth spectrum characterization capability that can be retrofitted into existing platforms or to support spectrum maneuverability in new EW systems to realize advantages in performance. Electromagnetic Maneuver Warfare Resource Allocation and Management (EMW RAM): • Autonomous resource management of manned and unmanned Air and Sea domain assets to provide jamming effectiveness projections and protected entity alignment cues. Distributed ES & EA with STORM on UAS: • Distributed and agile remote RF sensing to support battlespace awareness and timely decision making. Urban RF Emitter Location: • Emitter geolocation in urban environments using distributed RF sensors and existing data and computational resources. Silent Emitter Mapping: FY 2023 Plans: Passive Sensor Detection and Defeat (PSDD): • SILENT SWARM 23 (SS-23): Complete assessment and final reports for SS-22 and begin planning and development the SS-23 field experimentation venue. SS-23 will be conducted in 4Q FY 2023. • Characterization of Passive Systems (COPS) – Classified project in collaboration with PMR 51 and the FFRDCs. Electromagnetic Warfare Technology Enablers (EW Tech): • Magnetic Field Sensing (MFS): Assess the Josephson junction magnetic sensor to recreate the EMS from the magnetic field component thereby bypassing the need for an aperture enabling ultra wideband sensing. • Reconfigurable Intelligent Surfaces (RIS): Assess the feasibility of applying meta-surface materials to modify the radar scattering of surfaces for EW applications across multiple domains. • Dynamically Configurable Apertures (DCAs): Leverage the advances in additive manufacturing technology to dynamically adapt to changes in the EMS by dynamically controlling the size, frequency, gain and polarization of the RF front end and affiliated components.			

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
• Innovative Low-Cost Experimentation (LCE): Develop plans and conduct the second and third LCE event at the Playas, NM experimentation range. Continue leveraging EW capabilities in these events to explore CONOPS implications and wargaming applications. • Spectrum Access Sensor for Situational analYsis (SASSY): Congestion within the EMS significantly impacts military operations in a variety of important ways. Most importantly, frequencies that provide significant amounts of militarily-valuable information are coincident with civilian-use frequencies. To utilize this important information without adversely affecting civilian operations is extremely important for operational situational analysis. This effort will begin exploring cognitive RF technologies to enable cognitive radar applications within congested EMS environments. • Low-cost and expendable EA payloads for small UAS capable of loitering in an AOR and deliver effects quickly and with low risk to blue assets. • VIRTUAL STINGRAY 23 (VS-23): Building upon the results of VS-22, VS-23 will expand the numbers of users and capabilities involved and increase levels of anchoring of EW and EW enabled cyber effects in a secure virtual and constructive setting to real-world offensive EW and Cyber effects in a distributed and networked laboratory environments. EW-Cyber Interface (EWCI): • Preventing Blue Force Fratricide (PBFF): Applying AI/ML algorithms to more accurately discriminate between blue and red systems in complex and contested EMS environments in real time. • Precision RF-enabled Access & Effects for the IoT Environment (PRAETOR): Advancement and refinement of initial capabilities developed in FY 2022 will continue, culminating in several real-world in-the-field assessments of PRAETOR effects and potential mission impacts. EW Collaboration and Coordination (EW C&C): • Continue FY 2022 OUSD(R&E) efforts to guide, shepherd, and oversee all EW and EW-Cyber Science and Technology research and development across the DoD. QSES: • Quantum Small Electromagnetic Sensors using superconducting quantum interference device (SQUID) sensor arrays to create small, high performance and flexible receive capabilities to enable evolved CONOPS and a more covert battlespace presence. CHEAP DATE: • Fire and forget EW submunition uses adversary RF for guidance and delivers EA or cyber effects over hours or days when within range. NARWHAL:			

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B. Accomplishments/Planned Programs ($ in Millions)	**FY 2022**	**FY 2023**	**FY 2024**
• Expendable decoy hosted in a sonobuoy or air vehicle. Cognitive EA Cocktail HITL/SITL Experimentation: • Cognitive EA techniques capable of countering detection and track modes of operation of complex emitters using known and previously unseen waveforms. EM Skins for Fully Agile EMSO and Reconfigurable Intelligent Surfaces: • Dynamically reconfigurable reflective properties for vehicle surfaces to reduce or tailor RCS, beamform or enhance transmit or receive functions. Multi-Domain Orchestrated Spectrum SA for EW&C: • System for distributed, low-cost and low SWaP EM sensors adaptable for integration across multiple domains and operable under adaptive control in a self-healing networked configuration. RF Spectrum Awareness Toolkit: • Provide high performance and high instantaneous bandwidth spectrum characterization capability that can be retrofitted into existing platforms or to support spectrum maneuverability in new EW systems to realize advantages in performance. Electromagnetic Maneuver Warfare Resource Allocation and Management (EMW RAM): • Autonomous resource management of manned and unmanned Air and Sea domain assets to provide jamming effectiveness projections and protected entity alignment cues. Distributed ES & EA with STORM on UAS: • Distributed and agile remote RF sensing to support battlespace awareness and timely decision making. Urban RF Emitter Location: • Emitter geolocation in urban environments using distributed RF sensors and existing data and computational resources. Silent Emitter Mapping: • An Active/Passive RF technique to detect and identify adversary Radar and EW systems before they go active. Electronic GPS Anomaly Detection System: • Detect, characterize, locate, report and record signals that might deny, degrade of deceive GPS user equipment.			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Northpole: • A high performance neural inference computing substrate to enable next generation AI, ML and autonomy applications supporting EW such as detection, classification, prediction, sensor fusion and scene analysis. PRISM: • Device-specific resource monitoring and battle damage assessment system for 5G to detect the effects of hostile EW against the 5G system in time to take mitigating measures. Full Spectra OASIS: • Providing an RF sensing component to the OASIS BLK 2 UV/LWIR EO/IR data collection and tracking test asset in order to provide a full spectrum sensor for SA within test environments and for surrogate characterization. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** The decrease of $4.362 million between FY 2023 and FY 2024 is due to a one-time congressional add in FY 2023.			
Accomplishments/Planned Programs Subtotals	17.710	19.155	19.793

	FY 2022	FY 2023
Congressional Add: Photonically Distributed Antenna System	-	5.000
FY 2023 Plans: The $5M congressional plus-up will fund research within Distributed Antenna Systems and focus on: Aperture Building – A minimum of 3 RF photonic aperture will be built for both RX and TX based on technology available at start of effort. Develop Distributed Aperture Synthesis Models– Develop numerical models to predict performance of aperture synthesis for a range of configurations and potential applications. Evaluate Distributed Aperture Synthesis Techniques– Using laboratory hardware, experimentally validate fundamental aspects of the different aperture techniques. These results will be compared against modelled results to validate model performance. Aperture Synthesis Laboratory Measurements– Perform laboratory experiments to demonstrate and quantify the utility of synthesized apertures.		

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	FY 2022	FY 2023
Field Demonstration– Develop a field demonstration plan to prove the utility of the distributed aperture approach for the applications identified over the course of the effort. Program Documentation and Final Report– The results will be documented in a final presentation and report, detailing findings of the investigation and providing recommendations for further paths to transition technology.		
Congressional Adds Subtotals	-	5.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A