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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	477.063	107.964	136.134	135.366	-	135.366	147.457	141.896	141.370	142.324	Continuing	Continuing
2134: <i>Shipboard IW Exploit</i>	433.195	50.204	73.543	78.407	-	78.407	84.684	80.168	80.149	80.223	Continuing	Continuing
2174: <i>Intelligence Carry-On Program (ICOP)</i>	0.583	0.592	0.645	0.663	-	0.663	0.669	0.679	0.691	0.704	Continuing	Continuing
2227: <i>Distributed Common Ground System (DCGS-N) Inc 2</i>	38.770	26.396	30.748	29.339	-	29.339	30.718	31.128	31.642	32.196	163.530	414.467
2351: <i>MDA</i>	0.000	4.000	3.846	3.217	-	3.217	3.196	3.082	3.130	3.165	Continuing	Continuing
3091: <i>Advanced Cryptological Sys Eng (CCOP)</i>	4.515	4.610	4.386	4.853	-	4.853	4.932	4.955	5.049	5.141	Continuing	Continuing
3786: <i>Tactical Edge Targeting</i>	0.000	22.162	22.966	18.887	-	18.887	23.258	21.884	20.709	20.895	Continuing	Continuing

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): M464

A. Mission Description and Budget Item Justification

The Tactical Cryptologic Systems in this budget will implement digital system-of-systems engineering by using tools such as Model Based System Engineering (MBSE) and Digital Twins to create adaptable digital models to optimize system engineering from design, development and testing to operations and sustainment. Programs will use Development, Security and Operations (DevSecOps) processes for continuous development, integration, testing and deployment, along with common platform services such as Agile Core Services (ACS), for faster fielding of capability. Overall program development efforts include the investigation of emerging technologies through study, development and associated testing for feasibility of program insertion.

The Shipboard Information Warfare (IW) Exploit project consists of the Ship's Signal Exploitation Equipment (SSEE) Family of Systems (FoS) Increment F (and variants), Spectral, SSEE Modifications, Integrated Communications and Data Systems (ICADS) Increment II, Horizon and Distributed Operations (DO). These programs are classified Information Warfare/Electronic Warfare (IW/EW) tactical cryptologic systems supporting Command and Control, Battlespace Awareness, Electromagnetic Maneuver Warfare/Integrated Fires (EMW/IF) modes of global engagement. The systems enable power projection at the strategic level, operate in any environment including communications challenged situations across the globe. They provide maritime Signals Intelligence (SIGINT) and offensive Electronic Warfare (EW) capabilities at the tactical level, ensuring surface vessels' ability to disrupt, deny, degrade and defeat adversary (state and non-state) use of the radio frequency spectrum while simultaneously providing advanced Information Related Capabilities (IRC) to maritime warfighters. SSEE FoS detect adversary radio frequency emissions and use them to provide critical tactical and strategic intelligence, situational awareness, and hostile threat assessment depriving the adversary of enhanced signals exploitation capability and limiting their ability to counter strike. The systems are managed as incremental acquisition programs designed to pace adversary communications technology development by using Research, Development, Test and Evaluation (RDT&E) funding to rapidly develop and transition new technologies and provide new capabilities as Pre-Planned Product Improvement (P3I) upgrades into the system's hardware/software configuration. They focus on

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developing and delivering expanded offensive IW/EW and future Cyberspace capabilities in accordance with Presidential direction and in support of multiple Operational Plans (OPLANS).

The details of the ICADS and Horizon sub-projects are classified SECRET and are submitted annually to Congress in the classified budget justification books.

Distributed Common Ground System (DCGS) is a cooperative effort between the services, agencies, and the DoD to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms. DCGS - Navy (DCGS-N) is the Navy instance of the Under Secretary of Defense, Intelligence (USD (I)) DCGS FoS. DCGS-N system fulfills a critical mission set Afloat and Ashore. DCGS-N processes and exploits tactical and Imagery Intelligence (IMINT) and SIGINT, facilitates precision target geopositioning, mensuration, and imagery capabilities, integrates national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA), and shares Intelligence, Surveillance, Reconnaissance, and Targeting (ISR&T) and Command and Control information via the DCGS Integration Backbone (DIB), Defense Intelligence Information Enterprise (DI2E), and Net-Centric Enterprise Services (NCES) standards with a wide range of customers. The DCGS-N program conducts research and assessments of tactically relevant, emerging technologies program insertion to ensure superiority in the intelligence domain.

Intelligence Carry-On Program (ICOP) provides Indications and Warnings (I&W), battlespace awareness/visualization, pattern of life analysis, Full-Motion Video (FMV) and Intelligence Surveillance and Reconnaissance (ISR) Processing, Exploitation and Dissemination (PED) capabilities in support of Unit-Level Navy surface (CG, DDG, and LPD classes) and expeditionary operations. The ICOP system includes a three-eyed ruggedized workstation that serves as a powerful afloat edge computing device that is capable of operating on all three security domains (NIPR, SIPR and JWICs) and an antenna/receiver set (called Communications Module 3 - CM3) that is used to ingest, process and exploit airborne sensor data. In addition to supporting multi-intelligence capabilities, ICOP/CM3 provides an end-to-end ISR PED architecture that includes processing organic shipboard camera systems to support Navy-wide Operational Task (OPTASK) Visual Information (Strategic Communications - "First to the Truth," pattern of life analysis and use of force/rules of engagement decisions).

The Maritime Domain Awareness (MDA) project is a portfolio of partnerships that leverages the investments of other agencies in MDA tools and data, and funds the enhancement of those tools to meet Navy requirements for worldwide over-the-horizon vessel tracking and vessel data in support of DCGS-N, Navy Tactical Data Manager (NTDM) and Automated Information System (AIS) program. The MDA project manages the partnership with the Department of Transportation to leverage the Maritime Safety and Security Information System (MSSIS) and SeaVision, a non-Public Key Infrastructure (PKI) information sharing tool used by United States Indo-Pacific Command (INDOPACOM), European Command (EUCOM), Africa Command (AFRICOM), other USG agencies, and foreign partner nations to increase maritime security by sharing information. SeaVision is primarily accessed through a web front end where users can visualize tracks and run a growing set of analytics. SeaVision also has Application Programming Interfaces (APIs) for machine-to-machine data exchange with authorized systems including the Navy's AIS. The MDA project manages the partnership with the National Reconnaissance Office (NRO) to leverage the THRESHER system, which provides over-the-horizon vessel tracking and analysis tools. The MDA project is working with NRO to enhance THRESHER Maritime capabilities to improve the correlated and fused track feed over the Integrated Broadcast Service, which provides a track picture to IC systems including Fusion Analysis and Development Effort (FADE) Multi-Intelligence Spatial Temporal (MIST) and to improve the analytics provided by the THRESHER web front end on both JWICS and SIPR net.

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The Cryptologic Carry-on Program (CCOP) rapidly develops augmented SIGINT capabilities in response to Combatant Command requirements by fielding quick-reaction surface, subsurface, and airborne cryptologic carry-on capabilities. There are ~124 cryptologic capable surface ships and shore sites in the current Navy inventory; each of these is a potential user of this carry-on equipment, depending on deployment schedules and tempo of operations. In addition, numerous other Naval and Coast Guard platforms serve as other potential users.

The details of the TET project are classified SECRET and are submitted annually to Congress in the classified budget justification books.

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	107.964	136.140	0.000	-	0.000
Current President's Budget	107.964	136.134	135.366	-	135.366
Total Adjustments	0.000	-0.006	135.366	-	135.366
• Congressional General Reductions	-	-0.006			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	0.000	-	0.000
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Adjustments to Budget Year	-	-	135.366	-	135.366

Change Summary Explanation

FY 2023 funding request was reduced by \$5.797 million to account for the availability of prior year execution balances.

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy										Date: April 2022		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>				Project (Number/Name) 2134 / <i>Shipboard IW Exploit</i>			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
2134: <i>Shipboard IW Exploit</i>	433.195	50.204	73.543	78.407	-	78.407	84.684	80.168	80.149	80.223	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Shipboard Information Warfare (IW) programs are classified Information Warfare/Electronic Warfare (IW/EW) tactical cryptologic systems supporting all facets of Assured Command and Control, Battlespace Awareness, Electromagnetic Maneuver Warfare/Integrated Fires (EMW/IF) modes of global engagement. These programs provide both Carrier and Expeditionary Strike Group combatant commanders with real-time indications and warnings (I&W) through acquisition ("Find") and localization ("Fix") of Signals of Interest (SOIs) as well as provide the Surface Fleet's only EW non-kinetic capabilities ("Finish"). As an incremental acquisition program, Research, Development, Test and Evaluation (RDT&E) funding is required to: rapidly develop and integrate new technologies and associated new operational capabilities to pace both known and future signal threats; transition Pre-Planned Product Improvement (P3I) upgrades into the system's hardware/software configuration; and deliver to fielded systems as required to satisfy Fleet requirements. Program funding incorporates P3I, new Commercial-Off-The-Shelf (COTS) or Government-Off-the-Shelf (GOTS) based technologies and software into the existing systems to address Fleet priorities and capability gaps or to combat known threats. Funding focuses on developing and delivering expanded non-kinetic EW capabilities and net-centric Service Oriented Architecture (SOA) to meet intended interoperability objectives through Fleet defined Common Core Architectures (CCA) to enable application hosting services. Capability development is in accordance with Presidential direction and strategic objectives while also supporting multiple Operational Plans (OPLANS), Concepts of Operations (CONOPS), and communications challenged scenarios or Anti-Access Area Denial (A2AD); further details held at a higher classification level). Ship's Signal Exploitation Equipment (SSEE) Family of Systems (FoS) will continue development and integration of capabilities which can operate in communication challenged environments for the SSEE Increment F, SSEE Modifications, and Spectral systems. Funding will bring enhanced signals exploitation and expanded SOIs processing capabilities to fielded systems and supports development and integration efforts to fuse data produced and distributed by Shipboard IW/Information Operations (IO) systems with other intelligence data at multiple classification levels to provide the data to shipboard combat systems to support kinetic and non-kinetic fires. Data Fusion can also be used to enable a more complete understanding and more agile and effective exploitation within the electromagnetic spectrum.

SSEE Increment F (and its variants) is the primary, currently fielded system providing full-scope, simultaneous capability, while system variants bring a new dimension of afloat Signals Intelligence (SIGINT) capabilities by providing advanced scalability and modularity for mission planners to execute.

SSEE Modifications is a classified tactical signals intelligence frequency extension capability integrating and interoperating with the SSEE Increment F host system and is broken into two major components: Paragon, which provides simultaneous detection, collection, processing, IO, and display of communication intelligence data from hostile, high threat, and adversary platforms in select frequency ranges not prosecuted or countered with the host system; and the Graywing subsystem which is an advanced common data link system with SSEE Increment F systems.

Spectral is the Navy's next-generation SIGINT, EMW, and IO weapons system enabling both maritime IW/EW for both Naval Carrier and Expeditionary Strike Group operations. Spectrals primary objective is to provide our Navy's operators with the most capable Radio Frequency (RF) Signals Intelligence (SIGINT) collection and exploitation weapon's system available to support the widest range of maritime strategic and tactical mission areas, including I&W, Targeting, and Ship's Self

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Defense. Spectral provides scalable, mission configurable, and modular capabilities using a common user interface through an open software architecture to allow rapid integration and deployment of special use capabilities satisfying Navy and Joint maritime intelligence requirements beyond what existing systems can provide.

The details of the ICADS and Horizon sub-projects are classified SECRET and are submitted annually to Congress in the classified budget justification books.

In FY 2023, SSEE Increment F will continue P3I and software development to provide enhanced capabilities into the SSEE Increment F system and its variants by continuing to develop, refine, and test new, unexplored and unexploited cyber capabilities in alignment with Joint and service level cryptologic requirements. These include, but are not limited to advanced Medusa applications and techniques, signal collection and exploitation capabilities through added signal processing capacity and data flows (details held at higher classification), capability drop packages to deliver capability to the Fleet. Develop and deliver SIGINT and EW capabilities based upon the warfighter identified FY 2023 SOIs threats (updated annually) for integration into the SSEE Increment F systems (including its variants) and deliver as required to meet Fleet requirements. Continue the architecture, network performance specifications, and hosting environment to bring NSAnet afloat to all Naval platforms, after completing NSAnet afloat on large deck platforms in FY22, by deploying NTDN while applying national cybersecurity standards and initiatives to bring advanced inter-strike group network capabilities able to operate in any environment while continuing to integrate cryptologic systems with shipboard combat systems for tightly coupled mission execution across the Navy.

In FY 2023, Spectral continues the development of two Production Representative Articles (PRA) systems (Ashore and Afloat) in support of lab-based and afloat testing events and system certification as well as commencing deployment of capability drops to SSEE FoS. Spectral will finalize initial development efforts updating enhanced mission sets, to be incrementally delivered to the Fleet through capability drops while developing virtual software environments for enhanced configuration management through Web-based services. Lastly, Spectral will continue development and engineering for Spectral's Advanced RF aperture solutions and Active Electronically Steered Array (AESAs) topside.

In FY 2023, SSEE Modifications will continue hardware and software development to bring advanced capabilities to the Fleet for simultaneous detection, collection, processing, electronic warfare and display of communication intelligence data from hostile, high threat and adversary platforms in select extended frequency ranges not prosecuted today.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Ship's Signal Exploitation Equipment Inc F (SSEE Inc F)	7.280	7.019	6.496	0.000	6.496
Articles:	-	-	-	-	-
FY 2022 Plans:					
- Continue Pre-Planned Product Improvement (P3I) to provide enhanced capabilities into the SSEE Increment F system and its variants by continuing to develop, refine, and test new, unexplored and unexploited cyber capabilities including advanced Medusa applications and techniques through added signal processing capacity and data flows (details held at higher classification).					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

- Finalize integration solutions to incorporate other Navy development investments to enhance the Fleet's ability to dominate and defend cyberspace mediums and insert new technology enhancements via incremental software and hardware upgrades.
- Develop and deliver Electronic Warfare (EW) capabilities based upon the warfighter identified FY 2022 SOIs threats (updated annually) for integration into the SSEE Increment F systems (including its variants) and deliver as required to meet Fleet requirements.
- Complete delivery of the final technical data packages and apply the framework to advance the Anti-Access Area Denial (A2AD) capability development to continue to integrate specialized signal processing capabilities (including Medusa, ACES and Silk Thread functionality).
- Complete the architecture, network performance specifications, and hosting environment to bring NSAnet afloat to large-deck platforms by deploying the first Navy Tactical Data Network (NTDN) while applying national cybersecurity standards and initiatives to bring advanced inter-strike group network capabilities able to operate in any environment while continuing to integrate cryptologic systems with shipboard combat systems for tightly coupled mission execution.
- Finalize all integration activity and test capabilities able to operate in communications challenged environments to maintain cognizance of current warfighter-identified signal sets and make necessary additions and improvements to the system as required by National and Fleet stakeholders.

FY 2023 Base Plans:

- Continue P3I and software development to provide enhanced capabilities into the SSEE Increment F system and its variants by continuing to develop, refine, and test new, unexplored and unexploited cyber capabilities in alignment with Joint and service level cryptologic requirements. These include, but are not limited to advanced Medusa applications and techniques, signal collection and exploitation capabilities through added signal processing capacity and data flows (details held at higher classification), capability drop packages to deliver capability to the Fleet.
- Develop and deliver SIGINT and EW capabilities based upon the warfighter identified FY 2023 SOIs threats (updated annually) for integration into the SSEE Increment F systems (including its variants) and deliver as required to meet Fleet requirements.
- Continue the architecture, network performance specifications, and hosting environment to bring NSAnet afloat to all Naval platforms, after completing NSAnet afloat on large deck platforms in FY22, by deploying NTDN while applying national cybersecurity standards and initiatives to bring advanced inter-strike group network capabilities able to operate in any environment while continuing to integrate cryptologic systems with shipboard combat systems for tightly coupled mission execution across the Navy.

FY 2023 OCO Plans:

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
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N/A					
<i>FY 2022 to FY 2023 Increase/Decrease Statement:</i>					
Ship's Signal Exploitation Equipment Inc F (SSEE Inc F) FY 2022 to FY 2023 decrease due to completion of A2AD capability and Joint Interface development efforts.					

<i>Title:</i> Spectral	32.798	44.320	45.035	0.000	45.035
<i>Articles:</i>	-	-	-	-	-

FY 2022 Plans:

- Continue to leverage Engineering Design Model (EDM) early system component prototypes and continue third-party capability development efforts including advanced Electronic Attack (EA) capabilities, to continue full afloat system Production Representative Articles (PRA) and Capability Drop development integration with Prime Mission Product (PMP), and engineer hardware as part of PRA below-deck design solution to streamline installation timelines and costs by delivering unique hardware solutions required to fit in existing hatches and passageways to minimize size and build on scalability to maximize installation efficiency.
- Continue acquisition, logistics, test planning, and contracting activities toward PRA (Ashore), while continuing development and engineering of advanced Information Warfare/Electronic Warfare (IW/EW) capabilities including continued Surface EW Improvement Program (SEWIP) integration efforts and initial testing. These capabilities include integration of Next-Generation Medusa to counter specifically identified SOIs and development of below-deck host open system architecture (including VPX and VITA 49.2 standards implementation) that can be rapidly delivered to improve existing fielded systems and be incorporated into the Spectral PRA baseline.
- Continue development efforts to update and deliver new mission modules to capture modern signal sets (e.g., more complex wider bandwidth, shorter duration, low probability of detect/low probability of intercept) which will be incrementally delivered to the Fleet through capability drops.
- Continue to build the Continuous Integration/Continuous Deliver (CI/CD) pipeline to improve modularity, automation, and remote delivery for future Capability Drops which will improve overall installation efficiency.
- Develop virtual software development environment for enhanced configuration management through Web-based services and applications for a robust, open, modular software development environment.
- In addition to Collaborative Development Environment (CDE) efforts, Spectral will conduct extensive ongoing systems engineering reviews to include Critical Design Review (CDR) and cybersecurity testing of the prime mission integrator's PRA system design.

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<p>- Continue development and engineering for Spectral's Advanced RF aperture solutions and Active Electronically Steered Array (AESA) topside and execute engineering design in topside maritime antennas to enable execution of full functionality and scope of Spectral requirements.</p> <p>- Continue development of new topside multi-mission apertures to realize expanded capability to the overall Spectral system.</p> <p>FY 2023 Base Plans:</p> <p>- Continue development of two PRA systems (Ashore and Afloat) in support of testing events and system certification and will commence the delivery of capability drops to SSEE FoS.</p> <p>- Continue development efforts to update and deliver new mission modules (including Combat System Integration modules) to capture modern signal sets (e.g., complex wider bandwidth, shorter duration, low probability of detect/low probability of intercept) which will be incrementally delivered to the Fleet through capability drops.</p> <p>- Continue development efforts updating enhanced mission modules designed to capture modern signal sets (e.g., more complex wider bandwidth, shorter duration, low probability of detect/low probability of intercept) to be incrementally delivered to the Fleet through capability drops.</p> <p>- Continue to build the CI/CD pipeline to improve modularity, automation, and remote delivery for future Capability Drops which will improve overall installation efficiency.</p> <p>- Continue virtual software development environment for enhanced configuration management through Web-based services and applications for a robust, open, modular software development environment.</p> <p>- Continue development and engineering for Spectral's Advanced RF aperture solutions and AESA topside and execute engineering design in topside maritime antennas to enable execution of full functionality and scope of Spectral requirements.</p> <p>- Conduct development activities to support combat systems integration with the Surface Electronic Warfare Improvement Program (SEWIP).</p> <p>FY 2023 OCO Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Spectral FY 2022 to FY 2023 increase to support combat systems integration with the Surface Electronic Warfare Improvement Program (SEWIP).</p>					
<p>Title: Ship's Signal Exploitation Equipment Modifications (SSEE Modifications)</p> <p align="right">Articles:</p>	4.031	1.956	1.016	0.000	1.016
	-	-	-	-	-
FY 2022 Plans:					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<p>- Continue hardware and software development to bring advanced capabilities to the Fleet for simultaneous detection, collection, processing, electronic warfare and display of communication intelligence data from hostile, high threat and adversary platforms in select extended frequency ranges not prosecuted today.</p> <p>- Will complete development to integrate designs bringing advanced signal processing to the Next Generation-Graywing capability, enabling emergent signal threat acquisition and exploitation while migrating the design to meet future industry backplane standards to align with Common Core Architecture (CCA) strategies.</p> <p>FY 2023 Base Plans:</p> <p>- Continue hardware and software development to bring advanced capabilities to the Fleet for simultaneous detection, collection, processing, electronic warfare and display of communication intelligence data from hostile, high threat and adversary platforms in select extended frequency ranges not prosecuted today.</p> <p>FY 2023 OCO Plans:</p> <p>N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p> <p>Ship's Signal Exploitation Equipment Modifications (SSEE Modifications) FY 2022 to FY 2023 decrease attributed to completion of Graywing NexGen Backfit integration.</p>					
Title: Integrated Communications and Data Systems Increment II (ICADS Inc II)	6.095	1.548	1.080	0.000	1.080
Articles:	-	-	-	-	-
<p>FY 2022 Plans:</p> <p>The details of the ICADS sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.</p> <p>FY 2023 Base Plans:</p> <p>The details of the ICADS sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.</p> <p>FY 2023 OCO Plans:</p> <p>N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p> <p>The details of the ICADS sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.</p>					
Title: Horizon and Distributed Operations (DO)	0.000	18.700	24.780	0.000	24.780
Articles:	-	-	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<p><i>FY 2022 Plans:</i> The details of the Horizon and Distributed Operations (DO) sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.</p> <p><i>FY 2023 Base Plans:</i> The details of the Horizon and Distributed Operations (DO) sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.</p> <p><i>FY 2023 OCO Plans:</i> N/A</p> <p><i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> The details of the Horizon and Distributed Operations (DO) sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.</p>					
Accomplishments/Planned Programs Subtotals	50.204	73.543	78.407	0.000	78.407

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023 Base</u>	<u>FY 2023 OCO</u>	<u>FY 2023 Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN / 2360: <i>Shipboard IW Exploit</i>	226.072	261.735	311.210	-	311.210	375.464	359.530	357.299	346.809	Continuing	Continuing

Remarks

D. Acquisition Strategy
The Shipboard Information Warfare (IW) family of systems are incremental acquisition programs, which are required to rapidly develop and integrate new technologies and associated new operational capabilities to pace both known and future signal threats and transition as Pre-Planned Product Improvement (P3I) upgrades into the system's open systems architecture hardware/software configurations and deliver to fielded systems as required to satisfy Fleet needs. Program funding incorporates P3I, new Commercial-Off-The-Shelf (COTS) or Government-Off-the-Shelf (GOTS) based technologies, and software into the existing systems to address Fleet needed priorities, capability gaps or combat known threats and utilizes various competitive multiple award and single source contract activities including Prime Mission Product to develop third-party hardware and software solutions.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy **Date:** April 2022

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Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Product Development Prior Years	Various	Various : Various	291.496	0.000		0.000		0.000		-		0.000	0.000	291.496	-
Software Development SSEE	C/CPFF	Classified Contracts : Classified Contracts	8.971	6.551	Dec 2020	4.978	Dec 2021	4.661	Dec 2022	-		4.661	Continuing	Continuing	Continuing
System Engineering SSEE	C/CPFF	Classified Contracts : Classified Contracts	0.943	0.867	Dec 2020	0.719	Dec 2021	0.683	Dec 2022	-		0.683	Continuing	Continuing	Continuing
Software Development SSEE	WR	NIWC PAC : San Diego, CA	0.734	0.489	Oct 2020	0.405	Oct 2021	0.384	Oct 2022	-		0.384	Continuing	Continuing	Continuing
Hardware Development SSEE	WR	NIWC PAC : San Diego, CA	0.569	0.373	Oct 2020	0.310	Oct 2021	0.295	Oct 2022	-		0.295	Continuing	Continuing	Continuing
Software Development SSEE	WR	NRL : Washington, DC	2.698	1.552	Oct 2020	1.337	Oct 2021	1.269	Oct 2022	-		1.269	Continuing	Continuing	Continuing
Hardware Development Spectral	C/CPFF	Classified Contracts : Classified Contracts	8.033	18.876	Dec 2020	25.266	Dec 2021	25.152	Dec 2022	-		25.152	Continuing	Continuing	Continuing
Software Development Spectral	C/CPAF	Classified Contracts : Classified Contracts	1.685	3.593	Dec 2020	8.087	Dec 2021	7.792	Dec 2022	-		7.792	Continuing	Continuing	Continuing
System Engineering Spectral	WR	NIWC PAC : San Diego, CA	3.322	4.284	Oct 2020	4.550	Oct 2021	4.598	Oct 2022	-		4.598	Continuing	Continuing	Continuing
Requirements Analysis Spectral	C/CPFF	Classified Contracts : Classified Contracts	0.418	0.444	Dec 2020	0.471	Dec 2021	0.493	Dec 2022	-		0.493	Continuing	Continuing	Continuing
System Engineering Spectral	C/CPFF	Classified Contracts : Classified Contracts	3.785	4.038	Dec 2020	4.287	Dec 2021	4.483	Dec 2022	-		4.483	Continuing	Continuing	Continuing
ICADS-Classified	Various	Not Specified : Not Specified	7.900	5.757	Dec 2020	1.461	Dec 2021	1.019	Dec 2022	-		1.019	0.000	16.137	-
Horizon - Classified	Various	Not Specified : Not Specified	0.000	0.000		18.700	Dec 2021	24.780	Dec 2022	-		24.780	0.000	43.480	-
Subtotal			330.554	46.824		70.571		75.609		-		75.609	Continuing	Continuing	N/A

Remarks
The details of the ICADS and Horizon sub-projects are classified SECRET and are submitted annually to Congress in the classified budget justification books.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2134 / <i>Shipboard IW Exploit</i>
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Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support Prior Years	Various	Various : Various	29.574	0.000		0.000		0.000		-		0.000	0.000	29.574	-
System Eng Mgmt SSEE	C/CPFF	NIWC LANT/PAC : Various	0.296	0.279	Oct 2020	0.232	Oct 2021	0.220	Oct 2022	-		0.220	Continuing	Continuing	Continuing
Subtotal			29.870	0.279		0.232		0.220		-		0.220	Continuing	Continuing	N/A

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test & Evaluation Prior Years	Various	Various : Various	27.582	0.000		0.000		0.000		-		0.000	0.000	27.582	-
Developmental Test & Evaluation SSEE	C/CPFF	Classified Contracts : Classified Contracts	0.795	0.476	Dec 2020	0.394	Dec 2021	0.000	Dec 2022	-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation SSEE	WR	NIWC LANT/PAC : Various	1.210	0.724	Oct 2020	0.600	Oct 2021	0.000	Oct 2022	-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation Spectral	C/CPFF	Classified Contracts : Classified Contracts	0.000	0.000		0.000		0.391	Dec 2022	-		0.391	Continuing	Continuing	Continuing
Developmental Test & Evaluation Spectral	WR	NIWC LANT/PAC : Various	0.000	0.000		0.000		0.391	Oct 2022	-		0.391	Continuing	Continuing	Continuing
ICADS-Classified	Various	Not Specified : Not Specified	0.400	0.338	Oct 2020	0.087	Oct 2021	0.061	Oct 2022	-		0.061	0.000	0.886	-
Subtotal			29.987	1.538		1.081		0.843		-		0.843	Continuing	Continuing	N/A

Remarks
The details of the ICADS and Horizon sub-projects are classified SECRET and are submitted annually to Congress in the classified budget justification books.

Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Management Prior Years	Various	Various : Various	41.312	0.000		0.000		0.000		-		0.000	0.000	41.312	-

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2134 / <i>Shipboard IW Exploit</i>
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Spectral

Fiscal Year	2021				2022				2023				2024				2025				2026				2027			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																												
Milestones																												
Milestone B								◇																				
Limited Deployment Decision / Milestone C																												
Full Rate Production																												
System Development																												
Production Representative Articles (PRA)																												
Requirements Development Package 1																												
Fleet Capability Release 1																												
Requirements Development Package - 2																												
Fleet Capability Release 2																												
Topside Antenna Development																												
Test and Evaluation																												
TEMP																												
EDM Integration Test																												
Operational Assessment (OA)																												
FCR-1 (IT)																												
IOT&E																												
Production Milestones																												
LRIP																												
FRP																												
Remarks:	Shipboard Information Warfare (IW) Exploit / 2134 (Spectral)																											

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2134 / <i>Shipboard IW Exploit</i>
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SSEE Modifications

Fiscal Year	2021				2022				2023				2024				2025				2026				2027			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Installation																												
FRP	FRP				FRP				FRP				FRP				FRP											
Software Development																												
Baseline SW Development	Baseline Software Development																											
Capability Drops	▲ Capability Drop				△ Capability Drop				△ Capability Drop				△ Capability Drop				△ Capability Drop											
Pre-Planned Product Improvement (P3I)	Next Gen GRAYWING Dev																											
Test & Evaluation																												
Joint Interoperability Test Command Certification																												
Production																												
SSEE Modifications FRP	FY 21 ▲				FY 22 ▲				FY 23 △				FY 24 △															

Remarks:

- 1) Shipboard Information Warfare (IW) Exploit / 2134 (SSEE Mods)
- 2) Production Milestones reflect contract award dates
- 3) SSEE Mods software development integrated and tested in conjunction with SSEE Inc F software builds

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2134 / <i>Shipboard IW Exploit</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SSEE Inc F				
Production: Inc F - FY21 FRP Production Milestone	4	2021	4	2021
Production: Inc F - FY22 FRP Production Milestone	2	2022	2	2022
Production: Inc F - FY23 FRP Production Milestone	2	2023	2	2023
Production: Inc F - FY24 FRP Production Milestone	2	2024	2	2024
Software Development: Inc F - FY21 Capability Drop	3	2021	3	2021
Software Development: Inc F - FY22 Capability Drop	3	2022	3	2022
Software Development: Inc F - FY23 Capability Drop	3	2023	3	2023
Software Development: Inc F - FY24 Capability Drop	3	2024	3	2024
Software Development: Inc F - FY25 Capability Drop	3	2025	3	2025
Software Development: Inc F - FY26 Capability Drop	3	2026	3	2026
Software Development: Inc F - FY27 Capability Drop	3	2027	3	2027
Software Development: Inc F - FY21 SOI Development	1	2021	4	2021
Software Development: Inc F - FY22 SOI Development	1	2022	4	2022
Software Development: Inc F - FY23 SOI Development	1	2023	4	2023
Software Development: Inc F - FY24 SOI Development	1	2024	4	2024
Software Development: Inc F - FY25 SOI Development	1	2025	4	2025
Software Development: Inc F - FY26 SOI Development	1	2026	4	2026
Software Development: Inc F - FY27 SOI Development	1	2027	4	2027
Software Development: Inc F - A2AD Capability Development	1	2021	2	2022
Software Development: Inc F - Joint Interface Development	1	2021	3	2022
Software Development: Inc F - Next-Gen Chassis Development	1	2021	3	2021
Software Development: Inc F - NSA Afloat (Large Deck Development)	1	2021	1	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2134 / <i>Shipboard IW Exploit</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Software Development: Inc F - NSA Afloat Capability Development	1	2023	4	2025
Installation: Inc F - FRP Installation FY20	1	2021	1	2021
Installation: Inc F - FRP Installation FY21	2	2021	1	2022
Installation: Inc F - FRP Installation FY22	2	2022	1	2023
Installation: Inc F - FRP Installation FY23	2	2023	1	2024
Installation: Inc F - FRP Installation FY24	2	2024	1	2025
Installation: Inc F - FRP Installation FY25	2	2025	1	2026
Spectral				
Spectral - Milestone B	3	2022	3	2022
Spectral - Limited Deployment Decision (LDD)/ Milestone C	2	2025	2	2025
Spectral - Full Rate Production	3	2026	3	2026
Spectral - Production Representative Articles (PRA) Ashore	1	2024	1	2024
Spectral - Production Representative Articles (PRA) Afloat	3	2024	3	2024
Spectral - EDM Development /PRA Development	1	2021	3	2024
Spectral - Advanced RF Aperture Development	1	2021	4	2025
Spectral - Fleet Capability Release 1	3	2025	3	2026
Spectral - Requirements Development Package (RDP) - 1	3	2025	3	2025
Spectral - Fleet Capability Release 2	3	2026	3	2027
Spectral - Requirements Development Package (RDP) - 2	3	2026	3	2026
Spectral - FCR-1 (IT)	3	2025	3	2025
Spectral - PRA IT	2	2024	2	2024
Spectral - Initial Operational Test & Evaluation (IOT&E)	4	2025	2	2026
Spectral - Operational Assessment (OA)	4	2024	2	2025
Spectral - Low Rate Initial Production (LRIP)	2	2025	3	2026
Spectral - Full Rate Production (FRP)	3	2026	4	2027
SSEE Modifications				

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2134 / <i>Shipboard IW Exploit</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SSEE Modifications - FRP Installation FY21	2	2021	1	2022
SSEE Modifications - FRP Installation FY22	2	2022	1	2023
SSEE Modifications - FRP Installation FY23	2	2023	1	2024
SSEE Modifications - FRP Installation FY24	2	2024	1	2025
SSEE Modifications - FRP Installation FY25	2	2025	1	2026
SSEE Modifications - Baseline Software Development	1	2021	1	2026
SSEE Modifications - FY21 Capability Drop	3	2021	3	2021
SSEE Modifications - FY22 Capability Drop	3	2022	3	2022
SSEE Modifications - FY23 Capability Drop	3	2023	3	2023
SSEE Modifications - FY24 Capability Drop	3	2024	3	2024
SSEE Modifications - FY25 Capability Drop	3	2025	3	2025
SSEE Modifications - Next Generation - Graywing Development	1	2021	4	2022
SSEE Modifications - FY21 FRP Production Modification	3	2021	3	2021
SSEE Modifications - FY22 FRP Production Modification	2	2022	2	2022
SSEE Modifications - FY23 FRP Production Modification	2	2023	2	2023
SSEE Modifications - FY24 FRP Production Modification	2	2024	2	2024
ICADS Inc II				
Classified	1	2021	1	2027
Horizon and Distributed Operations (DO)				
Classified	1	2021	1	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy										Date: April 2022		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>				Project (Number/Name) 2174 / <i>Intelligence Carry-On Program (ICOP)</i>			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
2174: <i>Intelligence Carry-On Program (ICOP)</i>	0.583	0.592	0.645	0.663	-	0.663	0.669	0.679	0.691	0.704	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Intelligence Carry-On Program (ICOP) provides Indications and Warnings (I&W), battlespace awareness/visualization, pattern of life analysis, Full-Motion Video (FMV) and Intelligence Surveillance and Reconnaissance (ISR) Processing, Exploitation and Dissemination (PED) capabilities in support of Unit-Level Navy surface (CG, DDG, and LPD classes) and expeditionary operations. The ICOP system includes a three-eyed ruggedized workstation that serves as a powerful afloat edge computing device that is capable of operating on all three security domains (NIPR, SIPR, and JWICs) and an antenna/receiver set (called Communications Module 3 - CM3) that is used to ingest, process and exploit airborne sensor data. In addition to supporting multi-intelligence capabilities, ICOP/CM3 provides an end-to-end ISR PED architecture that includes processing organic shipboard camera systems to support Navy-wide Operational Task (OPTASK) Visual Information (Strategic Communications - "First to the Truth," pattern of life analysis and use of force/rules of engagement decisions).

In FY 2023, ICOP will conduct a formal system engineering assessment of the system design for the Sensitive Compartmented Information (SCI) ICOP Mission Module. This will lead into the development and testing of the mission module. In addition, the ICOP engineering team will continue the containerization of the ICOP software stack which will allow an additional variant to be employed on platforms that have severe space constraints such as LCS and DDG 1000 platforms. ICOP will continue to leverage Condition-Based Maintenance Plus (CBM+) to mature a proactive sustainment approach to ICOP hardware deployed aboard afloat units.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Distributed Common Ground System-Navy (DCGS-N) Increment 1	0.141	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2022 Plans: N/A					
FY 2023 Base Plans: N/A					
FY 2023 OCO Plans: N/A					
Title: Intelligence Carry-On Program (ICOP)	0.451	0.645	0.663	0.000	0.663
Articles:	-	-	-	-	-
FY 2022 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2174 / <i>Intelligence Carry-On Program (ICOP)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<ul style="list-style-type: none"> - Finalize and baseline the system design for the Sensitive Compartmented Information (SCI) ICOP Mission Module. - Roll out horizon one capabilities of the Condition-Based Maintenance (CBM) effort which include user dashboard, near-real time diagnostics reporting and prognostic services. - Commence system engineering efforts to start containerization of the ICOP software stack which will allow an additional variant to be employed on platforms that have severe space constraints such as LCS and DDG 1000 platforms. - Continue integration testing with several NAVAIR platforms and capabilities as part of the Digital Warfare Office (DWO) sponsored Information Warfare Family of Systems initiative. - Incorporate Fusion Analysis and Development Effort (FADE) integration with the ICOP baseline. - SCI ICOP mission module development ISO Tactical Integrated Fires Element (TIFE) Afloat efforts - Increase Condition-Based Maintenance Plus (CBM+) SBIR Phase III contract scheduled to be awarded to Charles River Analytics in FY22. <p>FY 2023 Base Plans:</p> <ul style="list-style-type: none"> - Commence a formal system engineering assessment of the SCI ICOP Mission Module system design. - Commence SCI ICOP Mission Module development and testing. - Continue system engineering efforts to containerize the ICOP software stack. - Continue integration testing with NAVAIR-sponsored manned and unmanned platforms to allow ICOP to establish data links for access to the aircrafts' full-motion video and targeting data. Supports DWO-sponsored Information Warfare Family of Systems initiative. - Continue FADE Desktop integration into the SCI ICOP Mission module baseline. FADE capability will support TIFE efforts (renamed to High Side Fusion-Afloat (HSF-A)). - Continue to leverage CBM+ SBIR Phase III contract with Charles River Analytics to mature a proactive sustainment approach to ICOP hardware deployed aboard afloat units. <p>FY 2023 OCO Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: There are no significant changes from FY 2022 to FY 2023.</p>					
Accomplishments/Planned Programs Subtotals	0.592	0.645	0.663	0.000	0.663

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2174 / <i>Intelligence Carry-On Program (ICOP)</i>

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

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u> <u>Base</u>	<u>FY 2023</u> <u>OCO</u>	<u>FY 2023</u> <u>Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPN/2914: <i>Distributed Common Ground System-Navy (DCGS-N)</i>	18.872	16.691	15.606	-	15.606	16.079	16.306	16.731	17.092	159.320	583.789

Remarks

D. Acquisition Strategy

Intelligence Carry-On Program (ICOP) will continue to implement a cross-decking methodology that incorporates a two phased delivery, a permanent foundation kit which supports carry-on equipment (rotatable pool of assets) to include workstation and Communications Module 3 (CM3) antenna / receiver set. This methodology supports speed-to-fleet principles. Sensitive Compartmented Information (SCI) ICOP Mission Module will employ the same cross-decking methodology.

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2174 / <i>Intelligence Carry-On Program (ICOP)</i>
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Proj 2174	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
DCGS-N Increment 1 Studies and Design																																
ICOP Systems Engineering and Test Activities																																

2023DON - 0304785N - 2174

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2174 / <i>Intelligence Carry-On Program (ICOP)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2174				
DCGS-N Increment 1 Studies and Design	1	2021	4	2021
ICOP Systems Engineering and Test Activities	1	2021	4	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy										Date: April 2022		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>				Project (Number/Name) 2227 / <i>Distributed Common Ground System (DCGS-N) Inc 2</i>			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
<i>2227: Distributed Common Ground System (DCGS-N) Inc 2</i>	38.770	26.396	30.748	29.339	-	29.339	30.718	31.128	31.642	32.196	163.530	414.467
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: M464												

A. Mission Description and Budget Item Justification

DCGS-N Inc 2 is the Navy Service component version of the DCGS Family of Systems (FoS) and is deployed on force level platforms and ashore nodes, delivering Intelligence, Surveillance, Reconnaissance, and Targeting (ISR&T) capabilities to the warfighter. DCGS-N Inc 2 is also a critical component of the Intelligence, Surveillance, and Reconnaissance (ISR) FoS, which is comprised of DCGS-N, Intelligence Carry-On Program (ICOP), Maritime Domain Awareness (MDA), Tactical Edge Targeting (TET), and Remote Sensing Capability Development (RSCD). The Programs within the ISR FoS deliver a robust suite of complimentary ISR capabilities to the Navy and Marine Corps. DCGS-N afloat and ashore systems interface across other service DCGS and Intelligence Community (IC) architecture via the DCGS-N enterprise and ashore cloud node. DCGS-N will operate during peacetime, crisis, and war in afloat and shore-based operational configurations, sharing information and intelligence between the Navy, DoD, and IC. It will serve as a tactical gateway to share Navy-unique sensor data (e.g., MQ-25, RAQ-35, MQ-4, and P-8, etc.) across the IC. DCGS-N will enable users to identify, locate, and confirm threats and targets using the all-source data store, support Intelligence Preparation of the Operational Environment, battle management, target nomination, and execute collection planning and requests. The program will integrate this data with available Command and Control systems, weapons, combat, and Meteorological and Oceanographic forecast and sensor data. DCGS-N will provide situational awareness to the operational decision-maker.

DCGS-N Inc 2 will decompose the validated Information Systems Capability Development Document (IS-CDD) requirements into six modular capability areas (CA) and implement agile development processes to incrementally deliver capability through the entire life cycle of the program. The decomposed requirements will be prioritized through the DCGS-N Requirements Governance Board (DRGB) and documented through the Capability Needs Statement (CNS) to scope DCGS-N Inc 2 development priorities and inform near-term programmatic planning. PMW 120 will incorporate user feedback at each iterative release (IR) through a robust requirements process characterized by annual Fleet User Symposiums and consistent action officer coordination. The DRGB Charter further describes the requirements process for DCGS-N Inc 2.

Both near-term and long-term implementation will maximize use of government off-the-shelf (GOTS) and commercial software tools and standards. DCGS-N will implement an enduring Adopt-Buy-Create (ABC) methodology to identify and integrate mature GOTS and commercial items currently in use with the Defense Intelligence Security Enterprise, the DCGS FoS, broader IC Information Technology Enterprise, and existing Joint and Navy Science and Technology efforts. The program will employ an agile approach to requirements management, new software development, commercial items, GOTS integration, testing, and delivery of incremental functionality aligned to user priorities. Features will be completed within the financial resources allocated to the program, with less important features deferred and prioritized based on user requirements

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy	Date: April 2022
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Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2227 / <i>Distributed Common Ground System (DCGS-N) Inc 2</i>
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FY 2023 will focus on the continuation of software integration and improvements resulting in Iterative Releases (IR) that are ready for testing/fielding. Additionally, DCGS-N will leverage the development and integration of applications which deliver Over the Horizon Targeting (OHT) and Command, Control, Communications, Computers and Counter-Intelligence (C5) ISR capabilities to the fleet.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<p>Title: Distributed Common Ground System-Navy (DCGS-N) Increment 2</p> <p align="right">Articles:</p> <p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - Continue focusing on continuation of software integration and improvements during individual software sprints resulting in Iterative Releases (IR) that are ready for testing/fielding. - Support development and integration efforts to fuse Intelligence, Surveillance, Reconnaissance, and Targeting (ISR&T) data collected, exploited and disseminated by ISR systems with other intelligence data to support kinetic (bombs, missiles, bullets) and non-kinetic fires (electronic attack, cyber-attack) to improve exploitation of the electromagnetic spectrum. - Using an agile software development model, efforts will focus on completion of features via multiple releases. - Include the development and integration of the Knowledgebase foundational layer upon which future capabilities will integrate with for data access. - Support the initial application deployment modernization utilizing containerization and Agile Core Services to provide more frequent application updates. - Further integrate capabilities with the latest evolution of the CANES Afloat network environment, Objective Baseline 2 (OB-2), moving from a connected to a primarily hosted software solution. Additional capabilities will be added to further meet Key Performance Parameters (KPPs), specifically in the areas of Object Detection and Recognition. - Commencing transition of developmental capabilities, such as Surveillance, Persistent Observation, and Target Recognition (SPOTR), among others in order to address emergent threats. The importance of continual technology assessment cannot be understated, particularly as it relates to the development of plans to conduct future integration of advanced algorithms and analytics that advance the concept of operations for the intelligence community. - Continue to work closely with governmental and non-governmental agencies and organizations in order to align fleet requirements with capabilities across various Technology Readiness Levels (TRLs). Those capabilities will be mapped into the DCGS-N Increment 2 technology insertion plan. - Target a Fleet demonstration/exercise (TRIDENT WARRIOR) to test system in a large-scale, at-sea experiment. <p>FY 2023 Base Plans:</p>	26.396	30.748	29.339	0.000	29.339
	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2227 / <i>Distributed Common Ground System (DCGS-N) Inc 2</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<ul style="list-style-type: none"> - Begin to leverage the development and integration of applications which deliver Over the Horizon Targeting (OHT) and Command, Control, Communications, Computers and Counter-Intelligence (C5) ISR capabilities to the fleet. - Continue software integration and improvements resulting in IRs that are ready for testing/fielding. - Begin optimization of Development, Security and Operations (DevSecOps) processes and environments to increase the rate of release for the fielding of IRs by using the Enterprise infrastructure. - Commence the design and development of mission modules based systems for accelerated deployment. - Continue to design architecture which supports Denied, Disconnected, Intermittent and Limited (D-DIL) operations and development of the fundamental infrastructure delivering capability at the tactical edge. - Commence the enhancement and expansion of the Knowledge Base (KB) to support new Joint and maritime data sets such as Machine-assisted Analytic Rapid repository System (MARS). - Continue to assess developing technologies for incorporation into future baselines in support of emerging fleet capability gaps. Continue to work closely with governmental and non-governmental agencies and organizations in order to align fleet requirements with capabilities across various Technology Readiness Levels (TRLs). - Continue to target a Fleet demonstration/exercise (TRIDENT WARRIOR, Enterprise Challenge and other Fleet exercises) to test system in a large-scale, at-sea experiment. - Commence DCGS Enterprise Node (DEN) implementation of Common Data Fabric (CDF) for data sharing. <p>FY 2023 OCO Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: DCGS-N Increment 2 funding decrease from FY 2022 to FY 2023 of \$1.4M is attributed to the full transition of the Common Track Manager (CTM) effort under the Track Management Capability Area to sustainment.</p>					
Accomplishments/Planned Programs Subtotals	26.396	30.748	29.339	0.000	29.339

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

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023 Base</u>	<u>FY 2023 OCO</u>	<u>FY 2023 Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN/2914: <i>Distributed Common Ground System-Navy (DCGS-N)</i>	18.872	16.691	15.606	-	15.606	16.079	16.306	16.731	17.092	159.320	583.789

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS	Project (Number/Name) 2227 / Distributed Common Ground System (DCGS-N) Inc 2

D. Acquisition Strategy

The DCGS-N Inc 2 acquisition strategy (AS) will follow the Software Acquisition Pathway (SWAP) to incrementally deliver capability through the entire lifecycle of the program. The evolutionary approach will consist of multiple, iterative releases (IR) that collectively update the system to meet or exceed all Information Systems Capability Development Document (IS-CDD), Key Performance Parameter (KPP) / Key System Attribute (KSA) threshold requirements. Each product line will be integrated and adapted to ensure viability and effectiveness of capabilities for operational use. The approach will incorporate test and evaluation and cyber hardening requirements in an integrated Development, Security and Operations (DevSecOps) environment and is integral to the program's IR delivery methodology.

Key elements of the DCGS-N Inc 2 AS include frequent iterative releases (IR), maximum leverage of mature capabilities through a multi-faceted ABC methodology, a robust Open System Architecture (OSA) centered on a core knowledge base with common Application Programming Interfaces (APIs), flexible contracting, tailored test and evaluation (T&E) strategy, and release authorizations informed by sprint demos and user acceptance. In accordance with DoDI 5000.02 requirements, DCGS-N Inc 2 IRs will incrementally deliver major capability releases when the system meets user defined Minimum Viable Product (MVP), Minimum Viable Capability Release (MVCR), and a culminating Operational Release (OR). The program will leverage the Adopt-Buy-Create (ABC) methodology to incorporate new product elements and on-ramp new Capability Area (CA) informed by a Continuous Technology Assessment (CTA) throughout the lifecycle of the program. Industry standards for agile development will be implemented to increase speed and consistencies of deliveries, enabling the program office to rapidly respond to Fleet requirements.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy **Date:** April 2022

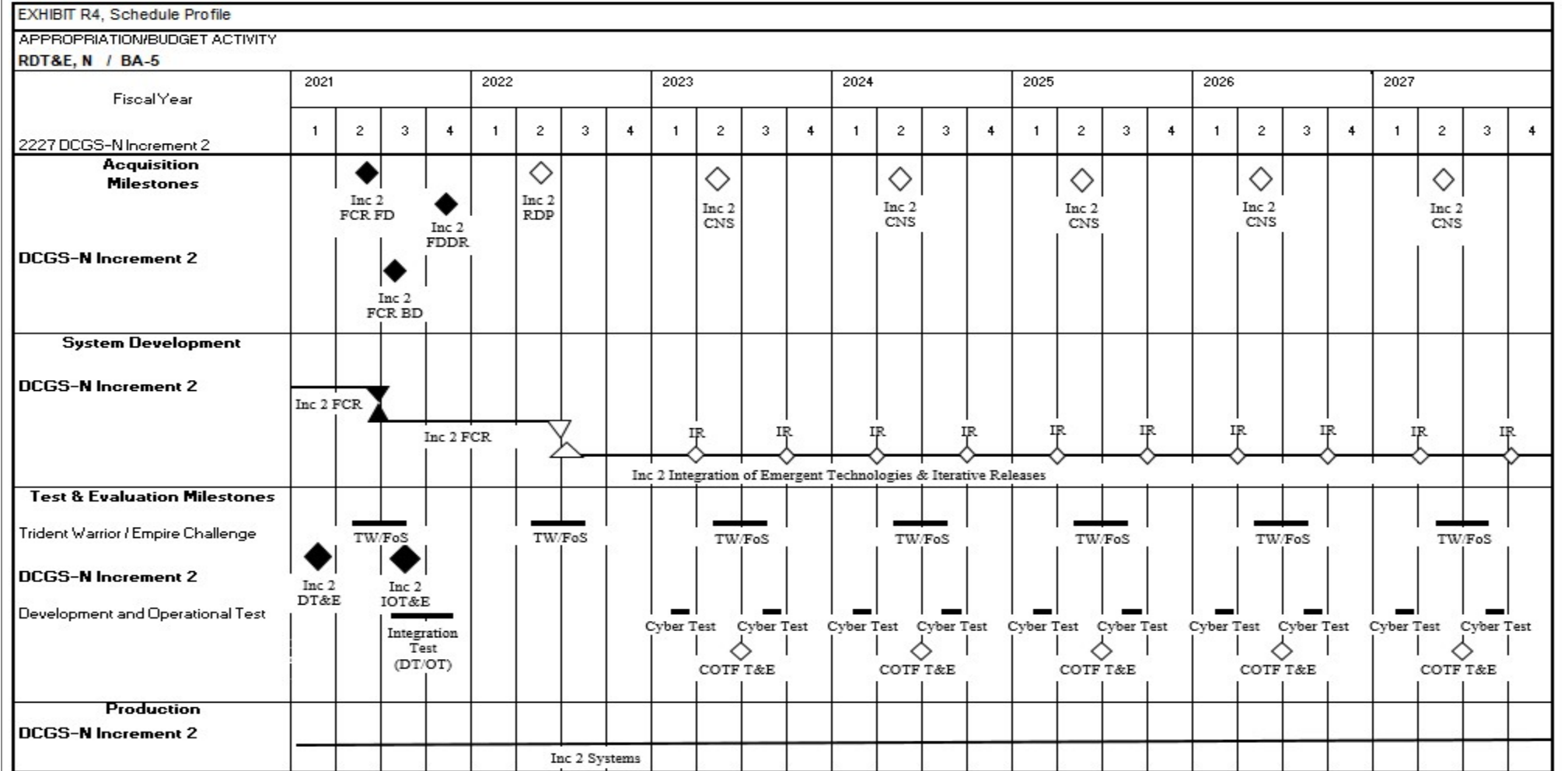
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2227 / <i>Distributed Common Ground System (DCGS-N) Inc 2</i>
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Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Product Development Prior Years	Various	Various : Various	2.727	0.000		0.000		0.000		-		0.000	0.000	2.727	-
Primary Software Development	C/CPFF	TBD : TBD	0.000	0.000		0.000		6.055	Nov 2022	-		6.055	0.000	6.055	-
Primary Software Development	C/CPFF	LEIDOS : Reston, VA	21.381	11.865	Nov 2020	13.797	Nov 2021	4.826	Nov 2022	-		4.826	0.000	51.869	-
Primary Software Development	MIPR	Classified Contracts : Classified Contracts	0.000	0.000		0.000		3.396	Dec 2022	-		3.396	0.000	3.396	-
Primary Software Development	C/CPFF	Various : Various	0.000	0.000		0.000		2.923	Dec 2022	-		2.923	0.000	2.923	-
Primary Software Development	C/CPFF	BAE : Arlington, VA	0.000	0.000		0.000		1.317	Dec 2022	-		1.317	0.000	1.317	-
Integration Assembly & Test	WR	NIWC PAC : San Diego, CA	5.580	6.601	Oct 2020	7.857	Oct 2021	3.448	Oct 2022	-		3.448	0.000	23.486	-
Integration Assembly & Test	C/CPFF	KAB : San Diego, CA	1.762	1.460	Nov 2020	1.738	Nov 2021	0.550	Nov 2022	-		0.550	0.000	5.510	-
Government Technical Oversight (Dev)	WR	NIWC LANT : Charleston, SC	1.783	1.567	Oct 2020	1.865	Oct 2021	1.083	Oct 2022	-		1.083	0.000	6.298	-
Government Technical Oversight(Dev)	WR	NIWC PAC : San Diego, CA	0.293	0.250	Oct 2020	0.298	Oct 2021	0.307	Oct 2022	-		0.307	0.000	1.148	-
Subtotal			33.526	21.743		25.555		23.905		-		23.905	0.000	104.729	N/A

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering	C/CPFF	SAIC : Columbia, MD	1.745	1.265	Feb 2021	1.449	Feb 2022	1.438	Dec 2022	-		1.438	0.000	5.897	-
Logistics Engineering	Various	Various : Various	0.754	0.684	Oct 2020	0.815	Oct 2021	0.839	Oct 2022	-		0.839	2.113	5.205	-
Subtotal			2.499	1.949		2.264		2.277		-		2.277	2.113	11.102	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2227 / <i>Distributed Common Ground System (DCGS-N) Inc 2</i>



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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2227 / <i>Distributed Common Ground System (DCGS-N) Inc 2</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2227				
Software Acquisition Pathway (SWAP) Planning Phase	1	2021	4	2021
Software Acquisition Pathway (SWAP) Acquisition Decision Memorandum (ADM)	1	2021	1	2027
DCGS-N Inc 2 Fleet Capability Release (FCR) Fielding Decision (FD)	2	2021	2	2021
DCGS-N Inc 2 Fleet Capability Release (FCR) Build Decision (BD)	3	2021	3	2021
DCGS-N Inc 2 Full Deployment Decision Review (FDDR)	4	2021	4	2021
DCGS-N Inc 2 Requirements Definition Package (RDP)	2	2022	2	2022
DCGS-N Inc 2 Capability Needs Statement (CNS) FY22	2	2022	2	2022
DCGS-N Inc 2 Capability Needs Statement (CNS) FY23	2	2023	2	2023
DCGS-N Inc 2 Capability Needs Statement (CNS) FY24	2	2024	2	2024
DCGS-N Inc 2 Capability Needs Statement (CNS) FY25	2	2025	2	2025
DCGS-N Inc 2 Capability Needs Statement (CNS) FY26	2	2026	2	2026
DCGS-N Inc 2 Capability Needs Statement (CNS) FY27	2	2027	2	2027
DCGS-N Inc 2 Fleet Capability Release (FCR) Development FY21	1	2021	2	2021
DCGS-N Inc 2 Fleet Capability Release (FCR) Development FY22	2	2021	2	2022
DCGS-N Inc 2 Integration of Emergent Technologies & Iterative Releases	3	2022	4	2027
Iterative Release (IR) FY23Q2	2	2023	2	2023
Iterative Release (IR) FY23Q4	4	2023	4	2023
Iterative Release (IR) FY24Q2	2	2024	2	2024
Iterative Release (IR) FY24Q4	4	2024	4	2024
Iterative Release (IR) FY25Q2	2	2025	2	2025
Iterative Release (IR) FY25Q4	4	2025	4	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2227 / <i>Distributed Common Ground System (DCGS-N) Inc 2</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Iterative Release (IR) FY26Q2	2	2026	2	2026
Iterative Release (IR) FY26Q4	4	2026	4	2026
Iterative Release (IR) FY27Q2	2	2027	2	2027
Iterative Release (IR) FY27Q4	4	2027	4	2027
Trident Warrior/DCGS Family of Systems (FoS) 2021	2	2021	3	2021
Trident Warrior/DCGS Family of Systems (FoS) 2022	2	2022	3	2022
Trident Warrior/DCGS Family of Systems (FoS) 2023	2	2023	3	2023
Trident Warrior/DCGS Family of Systems (FoS) 2024	2	2024	3	2024
Trident Warrior/DCGS Family of Systems (FoS) 2025	2	2025	3	2025
Trident Warrior/DCGS Family of Systems (FoS) 2026	2	2026	3	2026
Trident Warrior/DCGS Family of Systems (FoS) 2027	2	2027	3	2027
DCGS-N Inc 2 Developmental Test & Evaluation (DT&E)	1	2021	1	2021
DCGS-N Inc 2 Initial Operational Test & Evaluation (IOT&E)	3	2021	3	2021
DCGS-N Inc 2 Fleet Capability Release (FCR) Integrated Test (DT/OT) FY21	3	2021	4	2021
Cyber Test FY23 Q1	1	2023	1	2023
Cyber Test FY23 Q3	3	2023	3	2023
Cyber Test FY24 Q1	1	2024	1	2024
Cyber Test FY24 Q3	3	2024	3	2024
Cyber Test FY25 Q1	1	2025	1	2025
Cyber Test FY25 Q3	3	2025	3	2025
Cyber Test FY26 Q1	1	2026	1	2026
Cyber Test FY26 Q3	3	2026	3	2026
Cyber Test FY27 Q1	1	2027	1	2027
Cyber Test FY27 Q3	3	2027	3	2027
COTF T&E FY23	2	2023	2	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2227 / <i>Distributed Common Ground System (DCGS-N) Inc 2</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
COTF T&E FY24	2	2024	2	2024
COTF T&E FY25	2	2025	2	2025
COTF T&E FY26	2	2026	2	2026
COTF T&E FY27	2	2027	2	2027
DCGS-N Inc 2 Procurement	1	2021	4	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy										Date: April 2022		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>				Project (Number/Name) 2351 / MDA			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
2351: MDA	0.000	4.000	3.846	3.217	-	3.217	3.196	3.082	3.130	3.165	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Maritime Domain Awareness (MDA) project is a portfolio of partnerships that leverages the investments of other agencies in MDA tools and data, and funds the enhancement of those tools to meet Navy requirements for worldwide over-the-horizon vessel tracking and other MDA data in support of Distributed Common Ground System-Navy (DCGS-N), Automated Identification System (AIS) program of record, MDA analysts at Fleet Maritime Operations Centers, and at the Office of Naval Intelligence. The MDA project manages the partnership with the Department of Transportation to leverage the Maritime Safety and Security Information System (MSSIS) and SeaVision, an unclassified non-Public Key Infrastructure (PKI) information-sharing tool used by United States Indo-Pacific Command (INDOPACOM), European Command (EUCOM), Africa Command (AFRICOM), Southern Command (SOUTHCOM), other USG agencies, and foreign partner nations to increase maritime security by sharing information. SeaVision produces a track picture based data contributed by MSSIS partners such as costal AIS and costal radar and augmented with commercially procured data. SeaVision is a cloud-based system where users can visualize vessel tracks, access vessel information and run a growing set of analytics. SeaVision also has Application Programming Interfaces (APIs) for machine-to-machine data exchange with authorized systems including the Navy's AIS program of record.

The MDA project manages the partnership with the National Reconnaissance Office (NRO) to leverage the THRESHER system. THRESHER is a cloud-based system that provides over-the-horizon vessel tracking and analysis tools enhanced by Artificial Intelligence/Machine Learning (AI/ML). The MDA project is working with NRO to enhance THRESHER capabilities to improve the correlated and fused track feed provided over the Integrated Broadcast Service and improve THRESHER analytics on both JWICS and SIPR net.

FY 2023 efforts for MDA SeaVision include user driven and prioritized feature enhancements documented in the System Requirements Specification 7.0, which was developed with the stakeholder community in 2022. Major capabilities include the integration with AI/ML platforms to improve analysis, and enhanced interoperability with Office of Naval Intelligence Authoritative Maritime Services. These efforts also include back-end enhancements to the MSSIS to facilitate better data throughput and conditioning. Efforts for THRESHER include user driven feature enhancements to analytics and improved correlation and fusion algorithms.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Maritime Domain Awareness (MDA)	4.000	3.846	3.217	0.000	3.217
Articles:	-	-	-	-	-
FY 2022 Plans:					
- Integration of Object Based Production capability in SeaVision					
- Integration with Artificial Intelligence (AI)/Machine Learning (ML) based analytics in Seavision					
- Enhancements to the MSSIS for improved data flow and data awareness					

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2351 / MDA

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<ul style="list-style-type: none"> - Integration of MINOTAUR Family of Systems data into THRESHER - Testing and certification of a THRESHER Maritime produced track feed for dissemination via the Integrated Broadcast network - Improvements to THRESHER Maritime analytics and training materials <p><i>FY 2023 Base Plans:</i></p> <ul style="list-style-type: none"> - Continue improvement of SeaVision analytics through enhancements that were documented in the System Requirements Specification 7.0. - Continue integration of additional data sources into SeaVision - Continue improvements to Maritime Safety Security Information System (MSSIS) to increase data throughput capacity and conditioning - Continue improvements to THRESHER analytics based on direct Fleet input - Continue enhancement of THRESHER algorithms to improve correlation and fusion of tracks <p><i>FY 2023 OCO Plans:</i> N/A</p> <p><i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> The Maritime Domain Awareness (MDA) funding decrease from FY2022 to FY2023 is attributed to the completion of testing and certification of THRESHER Maritime.</p>					
Accomplishments/Planned Programs Subtotals	4.000	3.846	3.217	0.000	3.217

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

N/A

Remarks

D. Acquisition Strategy

MDA is governed under the Program Executive Office for Command, Control, Communications, Computers, Intelligence, and Space (PEO C4I and Space) instruction for non-ACAT projects. MDA will fund partner agencies for the enhancement of existing tools to satisfy Navy requirements.

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2351 / <i>MDA</i>
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Proj 2351	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
	MDA Engineering and Development																											
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2023DON - 0304785N - 2351

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 2351 / <i>MDA</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 2351</i>				
MDA Engineering and Development	1	2021	4	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy										Date: April 2022		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>				Project (Number/Name) 3091 / <i>Advanced Cryptological Sys Eng (CCOP)</i>			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
3091: <i>Advanced Cryptological Sys Eng (CCOP)</i>	4.515	4.610	4.386	4.853	-	4.853	4.932	4.955	5.049	5.141	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Advanced Cryptologic Systems Engineering - Cryptologic Carry On Program (CCOP) program rapidly develops and fields state-of-the-art signal acquisition capabilities in response to Combatant Command requirements to provide augmentable, quick-reaction surface, subsurface and airborne cryptologic carry-on capabilities. There are approximately 124 cryptologic capable surface ships and shore sites in the current Naval inventory; a potential user of this carry-on equipment, depending on deployment schedules and the tempo of operations. In addition, there are other numerous Naval platforms (including U.S. Coast Guard, Patrol Craft and USNS) that could serve as potential users. This funding line provides resources to enable rapid transition of available Commercial Off-The-Shelf (COTS) and Government Off-The-Shelf (GOTS) technologies that apply to Fleet requirements for carry-on system functionalities. These technologies typically require various levels of integration to leverage on-board systems providing system and mission management, product reporting, and data analysis. COTS / GOTS system documentation and training materials require adaptation or modification to meet fleet operator requirements, or entirely new training materials may need to be developed. Prior to operational deployment, systems must be systematically tested to ensure suitable and reliable operation, tested for network vulnerabilities if connected to shipboard Local Area Networks, and tested relative to interoperability requirements. Certification testing is conducted to meet Office of Naval Intelligence security requirements, and network testing is conducted in accordance with Information Technology (IT) requirements to allow connection to Navy networks. Funding will also provide resources to address rapid deployment of enhancements or improvements to the common hardware and/or software baseline of all other carry-on subsystems to meet emergent requirements. Funding will support development and integration efforts to fuse data produced and distributed by Shipboard IW / Information Operations (IO) systems with other intelligence data at multiple classification levels which is then provided to shipboard combat systems to support kinetic (bombs, mortars, missiles, bullets, etc.) and non-kinetic fires (electronic attack, lasers, cyber) in order to enable a more agile, effective and complete exploitation of the electromagnetic spectrum.

In FY 2023, the Advanced Cryptologic Systems Engineering - CCOP program will integrate, test, and document identified COTS and GOTS augmentable technologies and subsystems to meet emergent Fleet requirements as specified in the Signal of Interest (SOI) and target threat lists. CCOP will develop upgrades to existing systems and subsystems according to Fleet requirements and Integrated Fleet Priority lists. CCOP will develop new signal processing algorithms and software based solutions to continue enabling rapid transition of capability to permanently installed Ship's Signal Exploitation Space (SSES) systems, including SSEE Family of Systems (FoS) and its variants. CCOP will conduct research and development of Adaptive Mission Modules for rapid insertion to counter specific threats or provide intelligence in specific areas of operation. More details are available at higher classification. CCOP will conduct a Limited Objective Experiment (LOE) for the BLUEKRYPTONITE tool suite which provides the ability to track, collect and exploit a critical Signal of Interest (SOI)

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Advanced Cryptological Sys Eng - Cryptologic Carry On Program (CCOP)	4.610	4.386	4.853	0.000	4.853
Articles:	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 3091 / <i>Advanced Cryptological Sys Eng (CCOP)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<p><i>FY 2022 Plans:</i></p> <ul style="list-style-type: none"> - Continue to integrate, test, and document identified Commercial Off the Shelf (COTS) and Government Off the Shelf (GOTS) augmentable technologies and subsystems to meet emergent Fleet requirements as specified in the Signal of Interest (SOI) and target threat lists. - Continue to develop upgrades to existing systems and subsystems according to Fleet requirements and Integrated Fleet Priority lists. - Continue to develop new signal processing algorithms and software based solutions to continue enabling rapid transition of capability to permanently installed Ship's Signal Exploitation Space (SSES) systems, including SSEE Family of Systems (FoS) and its variants. - Continue to conduct research and development of Adaptive Mission Modules for rapid insertion to counter specific threats or provide intelligence in specific areas of operation. More details are available at higher classification. <p><i>FY 2023 Base Plans:</i></p> <ul style="list-style-type: none"> - Continue to integrate, test, and document identified COTS and GOTS augmentable technologies and subsystems to meet emergent Fleet requirements as specified in the SOI and target threat lists. - Continue to develop upgrades to existing systems and subsystems according to Fleet requirements and Integrated Fleet Priority lists. - Continue to develop new signal processing algorithms and software based solutions to continue enabling rapid transition of capability to permanently installed SSES systems, including SSEE FoS and its variants. - Continue to conduct research and development of Adaptive Mission Modules for rapid insertion to counter specific threats or provide intelligence in specific areas of operation. More details are available at higher classification. - Conduct Limited Objective Experiment (LOE) for the BLUEKRYPTONITE tool suite which provides the ability to track, collect, and exploit a critical Signal of Interest (SOI). <p><i>FY 2023 OCO Plans:</i> N/A</p> <p><i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> FY 2022 to FY 2023 increase is attributed to conducting Limited Objective Experiment (LOE) for the BLUEKRYPTONITE tool suite.</p>					
Accomplishments/Planned Programs Subtotals	4.610	4.386	4.853	0.000	4.853

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 3091 / <i>Advanced Cryptological Sys Eng (CCOP)</i>

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

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2023</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• OPN/3501: <i>Cryptologic Communications Equip</i>	14.845	17.809	18.832	-	18.832	19.107	19.251	19.649	19.976	Continuing	Continuing

Remarks

OPN BLI 3501 includes multiple programs; CCOP is only a portion of that budget

D. Acquisition Strategy

The Advanced Cryptologic Systems Engineering - Cryptologic Carry On Program (CCOP) program delivers state-of-the-art signal acquisition software for CCOP systems in response to Combatant Command requirements for a quick-reaction surface, subsurface and airborne cryptologic carry-on capability.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 3091 / <i>Advanced Cryptological Sys Eng (CCOP)</i>
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Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Software Development	C/CPFF	Classified Contract : Classified Contract	2.838	2.889	Jan 2021	2.649	Jan 2022	2.713	Jan 2023	-		2.713	Continuing	Continuing	Continuing
Software Development	WR	NIWC PAC : San Diego, CA	0.556	0.572	Nov 2020	0.577	Nov 2021	0.573	Nov 2022	-		0.573	Continuing	Continuing	Continuing
Software Development	WR	NIWC LANT : Charleston, SC	0.287	0.295	Nov 2020	0.298	Nov 2021	0.322	Nov 2022	-		0.322	Continuing	Continuing	Continuing
Subtotal			3.681	3.756		3.524		3.608		-		3.608	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering	C/CPFF	Classified Contract : Classified Contract	0.441	0.450	Jan 2021	0.454	Jan 2022	0.491	Jan 2023	-		0.491	Continuing	Continuing	Continuing
Govt Tech Oversight	WR	NIWC PAC : San Diego	0.211	0.217	Nov 2020	0.219	Nov 2021	0.237	Nov 2022	-		0.237	Continuing	Continuing	Continuing
Subtotal			0.652	0.667		0.673		0.728		-		0.728	Continuing	Continuing	N/A

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test & Evaluation	WR	NIWC LANT : Charleston, SC	0.182	0.187	Nov 2020	0.189	Nov 2021	0.517	Nov 2022	-		0.517	Continuing	Continuing	Continuing
Subtotal			0.182	0.187		0.189		0.517		-		0.517	Continuing	Continuing	N/A

Remarks
 FY 2022 to FY 2023 increase is attributed to Limited Objective Experiment (LOE) for the BLUEKRYPTONITE tool suite. LOE effort is captured in the Operational Assessment (OA) milestone on the R4A.

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 3091 / <i>Advanced Cryptological Sys Eng (CCOP)</i>
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Fiscal Year	2021				2022				2023				2024				2025				2026				2027			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Prototype Phase	██████████				███				□□□□				□□□□				□□□□				□□□□				□□□□			
System Development	▲ SDR				▲ SDR				△ SDR				△ SDR				△ SDR				△ SDR				△ SDR			
Software Delivery			▲				△				△				△				△				△				△	
T&E Milestones Operational Assessment			OA ▲				OA △				OA △				OA △				OA △				OA △				OA △	

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 3091 / <i>Advanced Cryptological Sys Eng (CCOP)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3091				
Prototype Phase - 2021	1	2021	4	2021
Prototype Phase - 2022	1	2022	4	2022
Prototype Phase - 2023	1	2023	4	2023
Prototype Phase -2024	1	2024	4	2024
Prototype Phase -2025	1	2025	4	2025
Prototype Phase -2026	1	2026	4	2026
Prototype Phase -2027	1	2027	4	2027
System Design Review (SDR) - 2021	2	2021	2	2021
System Design Review (SDR) - 2022	2	2022	2	2022
System Design Review (SDR) - 2023	2	2023	2	2023
System Design Review (SDR) - 2024	2	2024	2	2024
System Design Review (SDR) - 2025	2	2025	2	2025
System Design Review (SDR) - 2026	2	2026	2	2026
System Design Review (SDR) - 2027	2	2027	2	2027
Software Delivery - 2021	3	2021	4	2021
Software Delivery - 2022	3	2022	4	2022
Software Delivery - 2023	3	2023	4	2023
Software Delivery - 2024	3	2024	4	2024
Software Delivery - 2025	3	2025	4	2025
Software Delivery - 2026	3	2026	4	2026
Software Delivery - 2027	3	2027	4	2027

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 3091 / <i>Advanced Cryptological Sys Eng (CCOP)</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Operational Assessment (OA) - 2021	4	2021	4	2021
Operational Assessment (OA) - 2022	4	2022	4	2022
Operational Assessment (OA) - 2023	4	2023	4	2023
Operational Assessment (OA) - 2024	4	2024	4	2024
Operational Assessment (OA) - 2025	4	2025	4	2025
Operational Assessment (OA) - 2026	4	2026	4	2026
Operational Assessment (OA) - 2027	4	2027	4	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>				Project (Number/Name) 3786 / <i>Tactical Edge Targeting</i>			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
3786: <i>Tactical Edge Targeting</i>	0.000	22.162	22.966	18.887	-	18.887	23.258	21.884	20.709	20.895	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The details of the TET project are classified SECRET and are submitted annually to Congress in the classified budget justification books.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Tactical Edge Targeting (TET)	22.162	22.966	18.887	0.000	18.887
Articles:	-	-	-	-	-
FY 2022 Plans: The details of the TET project are classified SECRET and are submitted annually to Congress in the classified budget justification books.					
FY 2023 Base Plans: The details of the TET project are classified SECRET and are submitted annually to Congress in the classified budget justification books.					
FY 2023 OCO Plans: N/A					
FY 2022 to FY 2023 Increase/Decrease Statement: The details of the TET project are classified SECRET and are submitted annually to Congress in the classified budget justification books.					
Accomplishments/Planned Programs Subtotals	22.162	22.966	18.887	0.000	18.887

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

N/A

Remarks

D. Acquisition Strategy

The details of the TET project are classified SECRET and are submitted annually to Congress in the classified budget justification books.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 3786 / <i>Tactical Edge Targeting</i>
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Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Classified	Various	Classified : Classified	0.000	22.162	Jan 2021	22.966	Jan 2022	18.887	Jan 2023	-		18.887	Continuing	Continuing	Continuing
Subtotal			0.000	22.162		22.966		18.887		-		18.887	Continuing	Continuing	N/A

Remarks
The details of the TET project are classified SECRET and are submitted annually to Congress in the classified budget justification books.

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	22.162	22.966	18.887	-	18.887	Continuing	Continuing	N/A

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 3786 / <i>Tactical Edge Targeting</i>
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Proj 3786	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
2023PB - 0304785N - 3786																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>ISR & INFO OPERATIONS</i>	Project (Number/Name) 3786 / <i>Tactical Edge Targeting</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 3786</i>				
Classified	1	2021	4	2027