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**Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy** **Date:** May 2021

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 6: RDT&amp;E Management Support</i>	<b>R-1 Program Element (Number/Name)</b> PE 0606355N / <i>Warfare Innovation Management</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	0.000	27.668	33.058	38.958	-	38.958	-	-	-	-	-	-
0798: <i>Allied/Coalition Maritime Environment (ACME)</i>	0.000	1.095	1.194	1.188	-	1.188	-	-	-	-	-	-
2144: <i>Space &amp; Elec Warfare Engineering</i>	0.000	13.976	19.169	24.623	-	24.623	-	-	-	-	-	-
2147: <i>ISR Architecture</i>	0.000	1.476	1.428	0.000	-	0.000	-	-	-	-	-	-
3319: <i>Fleet Experimentation</i>	0.000	8.924	8.928	10.830	-	10.830	-	-	-	-	-	-
3320: <i>TRIDENT Warrior</i>	0.000	2.197	2.339	2.317	-	2.317	-	-	-	-	-	-

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

Allied/Coalition Maritime Environment (ACME) 0798:

This project promotes interoperability with allied and coalition forces by facilitating maritime interoperability in both processes and communication systems, including emerging capabilities, to counter growing high-end asymmetric threats.

Space & Electronic Warfare (SEW) Engineering 2144:

This project is a systems engineering non-acquisition program to develop, test, implement Technical Authority (TA) products, and validate Naval Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR), Business Information Technology (IT), and Space System architectures to support naval, Joint and Coalition missions across normal, contested, and degraded cyber/operational environments. The objective of this project is carried out by multiple tasks that ensure development and delivery of Naval Information Warfare (IW) capabilities that are well-integrated, interoperable, secure, and resilient to meet validated warfighting requirements.

The Intelligence, Surveillance, and Reconnaissance (ISR) Architecture 2147:

This project is intended to guide system of systems capability development and promote interoperability across Navy ISR programs, as well as interoperability and alignment with Department of Defense (DoD)-wide enterprise initiatives including Joint Information Environment (JIE) and Intelligence Community (IC) Information Technology Environment (ITE).

Fleet Experimentation 3319:

The U.S. Navy's Fleet Experimentation (FLEX) project advances/augments operational and tactical warfighter capabilities through the experimentation of high payoff initiatives, technologies and concepts, Fleet Concepts of Operations (CONOPS), doctrine, and new tactics, techniques and procedures (TTP). The main focus of FLEX between 2018 and 2024 is to operationalize "A Design For Maintaining Maritime Superiority" Blue Line of Effort (LOE) through the execution of Fleet Design materiel/ non-materiel capability employment.

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Trident Warrior Project 3320:  
The U.S. Navy's Trident Warrior (TW) experimentation campaign enables early delivery of capabilities to the warfighter via Fleet-directed Trident Warrior operational events with an emphasis on United States Fleet Forces/Commander Pacific Fleet (USFF/CPF) directed focus areas.

Maritime Communications Demonstration Project 3420:  
Classified Project Maritime Communications Demonstration (MCD) is not a new start. Funding was realigned from project 3319 FLEX in FY18. The Expeditionary SFOC Communications is developing and experimenting innovative concepts designed to validate both materiel and non-materiel methodologies to provide resilient command and control within the maritime domain. Identified previous work done within Office of the Secretary of Defense (OSD) channels, and will leverage lessons learned.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
Previous President's Budget	28.750	37.022	43.675	-	43.675
Current President's Budget	27.668	33.058	38.958	-	38.958
Total Adjustments	-1.082	-3.964	-4.717	-	-4.717
• Congressional General Reductions	-	-0.113			
• Congressional Directed Reductions	-	-3.851			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.082	0.000			
• Program Adjustments	0.000	0.000	-3.516	-	-3.516
• Rate/Misc Adjustments	0.000	0.000	-1.201	-	-1.201

**Change Summary Explanation**

The FY22 increase is due to the amplified Navy-wide emphasis on the Information Warfare domain as a platform to support future warfighter operations with secure networks.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy										<b>Date:</b> May 2021		
<b>Appropriation/Budget Activity</b> 1319 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0606355N / Warfare Innovation Management				<b>Project (Number/Name)</b> 0798 / Allied/Coalition Maritime Environment (ACME)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
0798: Allied/Coalition Maritime Environment (ACME)	0.000	1.095	1.194	1.188	-	1.188	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

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

The ACME program advances Information Warfare (IW) (to include Command, Control, Communications, Computers; Intelligence, Surveillance and Reconnaissance (C4ISR); Electronic Warfare (EW); and Cyber Warfare), interoperability with Australia, Canada, New Zealand, United Kingdom, United States (AUSCANNZUKUS), North Atlantic Treaty Organization (NATO), and other Allied and Coalition partners. The program determines maritime operational gaps with our allies, identifies Doctrine, Organization, Training, Material, Leadership, Personnel, and Facilities (DOTMLPF) solutions with the potential to fill those gaps, and assesses these solutions and associated concepts of operation in laboratory and at-sea environments. The ACME program includes integration and testing in support of joint and Allied war fighting capabilities, including interoperability testing of IW equipment. Allied and joint interoperability is critical for future maritime operations, especially as the United States Navy (USN) expands Internet Protocol (IP) networking throughout the fleet via Consolidated Afloat Networks and Enterprise Services (CANES), Next Generation Networks (NGEN), Mission Partner Environment/ Future Mission Networking (MPE/FMN), the U.S. Battlefield Information Collection and Exploitation System - eXtended (BICES-X), and with the Joint Information Environment (JIE).

Currently, IP connectivity with AUSCANNZUKUS and other Allied/Coalition forces is limited, requiring extensive backhaul through ashore infrastructure. Higher bandwidth solutions suitable for use over tactical networks require development and assessment for emerging coalition and joint interoperability requirements, such as Maritime Domain Awareness (MDA), Network Operations Without Shore (NOWS), Satellite Communications (SATCOM) Denied, Degraded, Intermittent and Low-bandwidth (DDIL) operations, and to counter Anti-Access Area Denial (A2/AD) threats. Increases in data throughput are required for the effective exchange of rich IW data sets and services via Service Oriented Architectures (SOA) within the limitations of High Frequency (HF), Ultra-High Frequency (UHF), and other portions of the radio frequency spectrum, coupled with appropriate Information Assurance and Computer Network Defense (IA/CND) mechanisms. Development and assessment of potential solutions will integrate improved IP capabilities with the Advanced Digital Network Systems (ADNS) and existing international standards (e.g. Allied Communications Publication 200, NATO Standardization Agreements 5066 and 4691). The continued development and refinement of advanced tactical networking technologies and protocols, to include Low Probability of Intercept (LPI), Low Probability of Detection (LPD), and Anti-Jam (AJ) capabilities as well as Automatic Link Establishment (ALE) standards, will provide for a significant improvement in secure data sharing within, and between, coalition maritime elements.

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

	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
<b>Title:</b> Advanced Relay Capabilities	1.095	1.194	1.188	0.000	1.188
<b>Articles:</b>	-	-	-	-	-
<b>FY 2021 Plans:</b>					
- Continue to develop and evaluate secure, interoperable technologies and capabilities supporting Denied, Degraded, Intermittent and Low-bandwidth (DDIL) operations including Allied/Coalition Shared Situational					

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

	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
<p>Awareness, cross-domain and data labeling solutions in maritime tactical networking environments, and advanced Information Assurance and Computer Network Defense (IA/CND) solutions (with common and interoperable processes and technologies).</p> <ul style="list-style-type: none"> <li>- Continue to evaluate technologies for interoperable maritime networking. Solutions will address higher bandwidth, Low Probability of Intercept (LPI)/Low Probability of Detection (LPD)/Anti-Jam (AJ) technologies across the Radio Frequency (RF) and Optical spectrum and include airborne capabilities. Evaluation of electromagnetic spectrum management and visualization technologies, force-level Electronic Warfare/Electromagnetic Maneuver Warfare (EW/EMW) will also enhance interoperable Information Warfare (IW).</li> <li>- Continue to enhance Allied IW interoperability with other joint and maritime multi-national forums, such as the Combined Communications Electronic Board (CCEB), Multinational Maritime Information-system Interoperability Steering Group (M2I2), MPE/FMN, and Joint Information Environment (JIE) forums.</li> <li>- Continue to assess and validate individual technologies, integrated solutions, and associated Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) through experimentation, trials and demonstrations with Australia, Canada, New Zealand, United Kingdom, United States and other Allied/Coalition partners during operational venues, such as the United States Navy (USN) Rim of the Pacific (RIMPAC) or United Kingdom (UK) Joint Warrior exercise series.</li> </ul> <p><b><i>FY 2022 Base Plans:</i></b></p> <ul style="list-style-type: none"> <li>- Continue to develop and evaluate secure, interoperable technologies and capabilities supporting Denied, Degraded, Intermittent and Low-bandwidth (DDIL) operations including Allied/Coalition Shared Situational Awareness, cross-domain and data labeling solutions in maritime tactical networking environments, and advanced Information Assurance and Computer Network Defense (IA/CND) solutions (with common and interoperable processes and technologies).</li> <li>- Continue to evaluate technologies for interoperable maritime networking. Solutions will address higher bandwidth, Low Probability of Intercept (LPI)/Low Probability of Detection (LPD)/Anti-Jam (AJ) technologies across the Radio Frequency (RF) and Optical spectrum and include airborne capabilities. Evaluation of electromagnetic spectrum management and visualization technologies, force-level Electronic Warfare/Electromagnetic Maneuver Warfare (EW/EMW) will also enhance interoperable Information Warfare (IW).</li> <li>- Continue to enhance Allied IW interoperability with other joint and maritime multi-national forums, such as the Combined Communications Electronic Board (CCEB), Multinational Maritime Information-system Interoperability Steering Group (M2I2), Mission Partner Environment/ Future Mission Networking, and Joint Information Environment (JIE) forums.</li> </ul>					

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
- Continue to assess and validate individual technologies, integrated solutions, and associated Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) through experimentation, trials and demonstrations with Australia, Canada, New Zealand, United Kingdom, United States and other Allied/Coalition partners during operational venues, such as the United States Navy (USN) Rim of the Pacific (RIMPAC) or United Kingdom (UK) Joint Warrior exercise series.  <b>FY 2022 OCO Plans:</b> N/A  <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> Decrease of \$0.006M between FY21 and FY22 is attributed to the reduction in support for Allied Information Warfare (IW) interoperability exercises with other joint and maritime multi-national forums.					
<b>Accomplishments/Planned Programs Subtotals</b>	1.095	1.194	1.188	0.000	1.188

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

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<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
2144: Space & Elec Warfare Engineering	0.000	13.976	19.169	24.623	-	24.623	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

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

To support Navy objectives in advancing Information Warfare (IW) capabilities, the Space and Electronic Warfare (SEW) Engineering project provides three main functions:

(1) Perform System of Systems (SoS) Cybersecurity Engineering; develop the architectures, specifications and standards, tools, and processes to support a single integrated Navy plan for cybersecurity. These engineering artifacts provide Navy specific guidance to drive common and consistent implementation of security controls across current and future Navy Programs of Record/projects. This eliminates redundancies and inefficiencies characteristic of previous stove-pipe development efforts in which each system addressed security individually. These efforts enable a standardized approach to move out faster to improve the Navy's cyber resiliency. Provide the cybersecurity vulnerability and functional test capability, which supports cybersecurity test requirements and the Command, Control, Communications, Computers, Intelligence (C4I) components of Naval Information Warfare Systems Command (NAVWARSYSCOM) Information Warfare (IW) Capability Testing Lab (formerly USS SECURE). NAVWAR Cyber Security Testing Capability/Labs is a cyber assessment program within the Navy. This SoS (Afloat, Aloft, C4I & Shore) capability in a test laboratory environment provides a rapidly re-configurable capability that integrates maritime hardware systems into a virtual platform. This platform level SoS provides cybersecurity research, development, test and evaluation, and training, not otherwise possible. This combination of Systems Commands (SYSCOM) laboratories, cyber ranges, and Red Teams simulating Navy platforms in operational maritime environments is critical for effectively evaluating cyber threats against specified mission threads.

(2) Perform System of Systems (SoS) Capability Roadmapping and Engineering; define an integrated Enterprise Architecture to support design, development and delivery of integrated Navy Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR), Business Information Technology (IT), and Space System capabilities. This architecture reflects current (as-is) and future (target) end states to support technical analyses, program planning, and enterprise-level investment decisions across IW capabilities. Perform mission based system of systems analysis to ensure integration and interoperability, and validate end-to-end warfighting capabilities to quickly address emerging threats. Provides engineering tools and processes to drive rigorous Systems Engineering discipline across the acquisition lifecycle to support rapid development and delivery of secure and interoperable C4ISR, Business IT, and Space Systems capabilities that meet Fleet requirements. Conduct Systems Engineering Technical Reviews (SETRs) to provide independent, objective assessments of technical maturity and compliance with applicable architectures, specifications and standards across IW capabilities. The Coalition Warrior Interoperability eXploration, eXperimentation, eXamination, eXercise (CWIX) provides a means to demonstrate and evaluate the interoperability of United States (US), North Atlantic Treaty Organization (NATO), and coalition information sharing systems.

(3) Navy Additive Manufacturing (AM) technology aligns to CNO priorities to deliver revolutionary capabilities to improve fleet readiness. These enterprise solutions will provide the foundation to (a) enhance warfighter capability through new innovative system designs; (b) increase readiness through low volume production of hard to

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source items; and (c) improve warfighting capacity by enabling production at or near the point of need. Specific efforts include the development of an Enterprise Digital Manufacturing Architecture which addresses design and certification of AM capabilities for both afloat and ashore, development of Cyber Security Risk Management Profiles for devices and applications on operational networks, definition of a secure Technical Data Package to describe components that can be digitally manufactured, and the development of an overarching, enterprise-level Digital Manufacturing Thread (device management, digital rights management, licensing, configuration management, data storage rule/access and application programming interfaces).

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

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<p><b>Title:</b> Cybersecurity Architecture, Specifications and Standards</p> <p align="right"><b>Articles:</b></p> <p><b>FY 2021 Plans:</b> N/A</p> <p><b>FY 2022 Base Plans:</b> N/A</p> <p><b>FY 2022 OCO Plans:</b> N/A</p>	6.532	0.000	0.000	0.000	0.000
	-	-	-	-	-
<p><b>Title:</b> Cybersecurity Vulnerability &amp; Functional Test Capability</p> <p align="right"><b>Articles:</b></p> <p><b>FY 2021 Plans:</b> N/A</p> <p><b>FY 2022 Base Plans:</b> N/A</p> <p><b>FY 2022 OCO Plans:</b> N/A</p>	0.799	0.000	0.000	0.000	0.000
	-	-	-	-	-
<p><b>Title:</b> Enterprise Architecture</p> <p align="right"><b>Articles:</b></p> <p><b>FY 2021 Plans:</b> N/A</p> <p><b>FY 2022 Base Plans:</b> N/A</p> <p><b>FY 2022 OCO Plans:</b></p>	0.642	0.000	0.000	0.000	0.000
	-	-	-	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
N/A					
<b>Title:</b> SYSCOM Systems Engineering  <b>Articles:</b>  <b>FY 2021 Plans:</b> N/A  <b>FY 2022 Base Plans:</b> N/A  <b>FY 2022 OCO Plans:</b> N/A	1.903	0.000	0.000	0.000	0.000
	-	-	-	-	-
<b>Title:</b> Coalition Warrior Interoperability eXploration, eXperimentation, eXamination, eXercise (CWIX)  <b>Articles:</b>  <b>FY 2021 Plans:</b> N/A  <b>FY 2022 Base Plans:</b> N/A  <b>FY 2022 OCO Plans:</b> N/A	1.008	0.000	0.000	0.000	0.000
	-	-	-	-	-
<b>Title:</b> Additive Manufacturing (AM)  <b>Articles:</b>  <b>FY 2021 Plans:</b> - Complete development of Risk Management Framework (RMF) Profiles for the various components and interfaces required to network AM hardware and software assets. - Continue utilizing the Additive Manufacturing Test-Bed to develop specifications, standards, and architecture to drive interoperability across the Navy Enterprise Digital Thread for Additive Manufacturing. - Continue to define a Defense-in-Depth Functional Implementation Architecture Network Transformation (DFIANT) architecture for additive manufacturing. - Complete the Additive Manufacturing data strategy. - Define the Digital Manufacturing Strategy for integration into logistics Digital transformation plan.	3.092	4.318	2.296	0.000	2.296
	-	-	-	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
<p>- Create Off-Shore deployable Data Repository and digital architecture for Afloat Units.</p> <p><b>FY 2022 Base Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue utilizing the Additive Manufacturing Test-Bed to develop specifications, standards, and architecture to drive interoperability across the Navy Enterprise Digital Thread for Additive Manufacturing.</li> <li>- Define a Defense-in-Depth Functional Implementation Architecture Network Transformation (DFIANT) architecture for additive manufacturing.</li> <li>- Continue to define the Digital Manufacturing Strategy for integration into logistics Digital transformation plan.</li> </ul> <p><b>FY 2022 OCO Plans:</b> N/A</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> Decrease of \$2.022M between FY21 to FY22 can be attributed to the reduced requirement to support the Off-Shore deployable Data Repository and digital architecture for Afloat Units.</p>					
<p><b>Title:</b> System of Systems (SoS) Cybersecurity Engineering</p> <p align="right"><b>Articles:</b></p> <p><b>FY 2021 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue to evaluate emerging threats, advances in technology, updates to National Institute of Standards and Technology (NIST) and DoD guidance to inform the need for new technical artifacts that provide cybersecurity guidance to Navy Programs of Record (PoR) and projects.</li> <li>- Continue to develop the architectures, specifications, and standards that provide the technical foundation of the single, integrated Navy plan for cybersecurity, and drive implementation of Information Technology (IT) and Cybersecurity (CS)/Technology Authority architectures, specifications and standards across programs and projects. Support program reviews and milestones via risk assessments that articulate systems' ability to support operational missions in various cyber conditions and refining the Cybersecurity Figure of Merit (CFOM) to assess Information Warfare programs and projects effectiveness in meeting cybersecurity requirements.</li> <li>- Develop detailed design artifacts for PoRs to ensure integration between Navy Cyber Situational Awareness (NCSA) tools and the Defensive Cyber Operations enclave to enable command and control of Navy networks under all cyber conditions.</li> </ul>	0.000	9.093	12.146	0.000	12.146
	-	-	-	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
-Continue to utilize lab assets for cross-SYSCOM NAVWAR Cybersecurity Testing Capability serial test events.						
<b>FY 2022 Base Plans:</b>						
- Continue to evaluate emerging threats, advances in technology, updates to National Institute of Standards and Technology (NIST) and DoD guidance, NAVWAR Cybersecurity Technical Authority (CS TA) cyber risk assessments, and results of Naval Information Warfare Systems Command (NAVWARSYSCOM) Information Warfare (IW) Capability Testing Lab (formerly USS SECURE) cyber test activities to inform the need for new or updated technical artifacts that provide standardized cybersecurity guidance to Navy Programs of Record (PoR) and projects.						
- Continue to develop the IT and Cybersecurity Technical Authority architectures, specifications, and standards that provide the technical foundation of the single, integrated Navy plan for cybersecurity, and drive common implementations across programs and projects. Support program reviews and milestones via risk assessments that articulate systems' ability to support operational missions in various cyber conditions and expanding the Cybersecurity Figure of Merit (CFOM) assessments applied to Information Warfare programs and projects to Navy-wide assessments of effectiveness in meeting cybersecurity requirements.						
- Continue to develop detailed design artifacts for PoRs to ensure integration between Navy Cyber Situational Awareness (NCSA) tools and the Defensive Cyber Operations enclave to enable command and control of Navy networks under all cyber conditions, supporting Navy-wide modernization such as Naval Digital Platform Transformation and Integrated Navy Operations Command and Control System (INOCCS).						
- Continue to utilize NAVWAR lab assets for cross-SYSCOM NAVWAR Cybersecurity Testing Capability serial test events and support Navy-wide Live, Virtual, and Constructive (LVC) IW capability tests.						
<b>FY 2022 OCO Plans:</b>						
N/A						
<b>FY 2021 to FY 2022 Increase/Decrease Statement:</b>						
Increase of \$3.053M between FY21 to FY22 is attributed to the increased support to Navy-wide modernization such as Naval Digital Platform Transformation and Integrated Navy Operations Command and Control System (INOCCS).						
<b>Title:</b> System of Systems (SoS) Capability Roadmapping and Engineering						
	<b>Articles:</b>	0.000	5.758	10.181	0.000	10.181
		-	-	-	-	-

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

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<p><b><i>FY 2021 Plans:</i></b></p> <ul style="list-style-type: none"> <li>- Continue supporting Navy digital engineering requirements by continuing to grow the capabilities of the Architecture Data Repository to effectively share data across the Naval Information Warfare Systems Command (NAVWARSSYSCOM) enterprise and with other Naval Systems Commands (SYSCOMs). Provide the infrastructure critical to implementing an integrated Model Based Systems Engineering environment, and provide configuration management.</li> <li>- Continue development of Model Based System Engineering (MBSE) capabilities, processes and tools to support development and delivery of recommendations to address capability gaps, overlaps, interoperability issues and cybersecurity risks across complex Navy System of Systems (SoS) to ensure effective end-to-end mission performance.</li> <li>- Continue to refine the Integration and Interoperability (I&amp;I) Integrated Capability Framework (ICF) to support SoS analyses of how well systems operate together across the Naval enterprise to deliver validated warfighting capabilities.</li> <li>- Perform Systems Engineering Technical Reviews (SETRs) across Command and Control (C2); Intelligence, Surveillance, &amp; Reconnaissance/Information Operations (ISR/IO); Space Systems, Business IT; and Communications &amp; Networks to ensure compliance with statutory and regulatory directives, as well as implementing applicable Information Technology (IT) and Cybersecurity (CS) Technology Authority (TA) architectures, specifications, standards, policies, processes and profiles.</li> <li>- Continue to conduct Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance(C4ISR) certifications and technical reviews of formal acquisition and engineering documentation through design and testing analysis, ensuring interoperability with platform, force level, and joint/allied/coalition forces.</li> <li>- Resume Competency Development Model (CDM) development by defining roles and appropriate Knowledge Skills and Abilities (KSAs) for the Naval Information Warfare Systems Command (NAVWARSSYSCOM) Engineering Competency required to meet evolving mission requirements.</li> </ul>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0606355N / <i>Warfare Innovation Management</i>	<b>Project (Number/Name)</b> 2144 / <i>Space &amp; Elec Warfare Engineering</i>

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

	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
<p>- Continue to promote improved interoperability and information sharing through coalition engagement, technology, demonstrations, and assessments leading to improvements of Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems within the Navy and in conjunction with Joint Services and Coalition efforts. Partners include the MultiNational Maritime Informational Technology and Interoperability Board (M2I2), Pacific Command (PACOM) and Southern Command (SOUTHCOM), and North Atlantic Treaty Organization (NATO). Partner feedback is for the planning and execution of Coalition Warrior Interoperability eXploration, eXperimentation, eXamination, eXercise (CWIX) and execution of the Mission Partner Environment (MPE) in the appropriate venues.</p> <p><b><i>FY 2022 Base Plans:</i></b></p> <p>- Continue supporting Navy digital engineering transformation by continuing to expand the capabilities of the Architecture Data Repository, cross-SYSCOM schema and integrated dictionary to more effectively share data across the Naval Systems Commands (SYSCOMs). Provide the infrastructure critical to implementing a Navy Integrated Modeling Environment, and provide requirements traceability and configuration management.</p> <p>- Continue development of Model Based System Engineering (MBSE) capabilities, processes and tools to support development and delivery of recommendations to address capability gaps, overlaps, interoperability issues and cybersecurity risks across complex Navy System of Systems (SoS) to ensure effective end-to-end mission performance.</p> <p>- Continue to leverage digital engineering and automation to support complex mission-based SoS analyses of how well systems operate together across the Naval enterprise to deliver validated warfighting capabilities to inform key investment processes such as the Naval Capability Integrated Process for Information Warfare (NCIP-IW).</p> <p>- Perform Systems Engineering Technical Reviews (SETRs) across Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance (C4ISR) and Space Systems; Digital Enterprise Services; Manpower, Logistics, and Business Solutions programs to ensure compliance with statutory and regulatory directives, as well as implementing applicable Information Technology (IT) and Cybersecurity (CS) Technology Authority (TA) architectures, specifications, standards, policies, processes and profiles. Leverage digital engineering and artificial intelligence advances to automate SETR.</p>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0606355N / <i>Warfare Innovation Management</i>	<b>Project (Number/Name)</b> 2144 / <i>Space &amp; Elec Warfare Engineering</i>

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

	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
<p>- Continue to conduct Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) certifications and technical reviews of formal acquisition and engineering documentation through design and testing analysis, ensuring interoperability with platform, force level, and joint/allied/coalition forces.</p> <p>- Continue Competency Development Model (CDM) development by defining roles and appropriate Knowledge Skills and Abilities (KSAs) for the Naval Information Warfare Systems Command (NAVWARSYSCOM) Engineering Competency required to shape the workforce to meet evolving mission requirements.</p> <p>- Continue to promote improved interoperability and information sharing through coalition engagement, technology, demonstrations, and assessments leading to improvements of Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems within the Navy and in conjunction with Joint Services and Coalition efforts. Partners include the Multi-National Maritime Informational Technology and Interoperability Board (M2I2), Pacific Command (PACOM) and Southern Command (SOUTHCOM), and North Atlantic Treaty Organization (NATO). Partner feedback ensures effective planning and execution of Coalition Warrior Interoperability eXploration, eXperimentation, eXamination, eXercise (CWIX) and execution of the Mission Partner Environment (MPE) in the appropriate venues to support IW capability objectives.</p> <p>- Begin the Naval Capability-Based Assessment Integrated Process for Information Warfare (NCIP-IW) effort. This effort involves the NAVWAR C4I Mission Effects and Requirements Analysis (C4IMERA) cross-functional team tasking to align with NCIP From The Sea (NCIP-FTS) and NCIP From The Air (NCIP-FTA) teams, and coordination with PEO C4I and Fleet stakeholders.</p> <p>-Begin tasking on the Navy Tactical Grid (NTG) effort, which supports developing a framework and plan for the IW domain to help develop the Navy's maritime design 2.0 (NTG).</p> <p><b>FY 2022 OCO Plans:</b> N/A</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> The \$4.423M increase from FY21 to FY22 is attributed to the increasing requirement to digitize the Navy and implement continuous development, integration, test and delivery of Information Warfare; commencing the Naval</p>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0606355N / Warfare Innovation Management	<b>Project (Number/Name)</b> 2144 / Space & Elec Warfare Engineering

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
Capability-Based Assessment Integrated Process for Information Warfare (NCIP-IW); and commencing the NTG effort.					
<b>Accomplishments/Planned Programs Subtotals</b>	13.976	19.169	24.623	0.000	24.623

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

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**Exhibit R-2A, RDT&E Project Justification:** PB 2022 Navy **Date:** May 2021

<b>Appropriation/Budget Activity</b> 1319 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0606355N / Warfare Innovation Management	<b>Project (Number/Name)</b> 2147 / ISR Architecture
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
2147: ISR Architecture	0.000	1.476	1.428	0.000	-	0.000	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

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

Integrated architectures provide a technical framework for assessing capability gaps and performance of individual systems and System of Systems (SoS) and their ability to effectively provide the desired effects to support warfighting missions. They also serve as a means to influence and drive Programs of Record (PoR) toward a common, more efficient state that promotes interoperability and security.

The Naval Intelligence, Surveillance, and Reconnaissance (ISR) Reference Architecture project is intended to guide system of systems capability development and promote interoperability across Navy ISR programs, as well as interoperability and alignment with Department of Defense (DoD)-wide enterprise initiatives including Joint Information Environment and Intelligence Community Information Technology Environment and Space & Naval Warfare Systems Command-wide Enterprise Architecture policies. This effort to develop integrated ISR architectures will instill systems engineering discipline and standardization across the Navy ISR Enterprise. These efforts will reduce Information Technology/ISR infrastructure complexity and variances, making it easier to manage, operate and defend our ISR capabilities, and help inform investment decisions across the Navy's ISR enterprise to support Assured Command and Control, Battlespace Awareness and Integrated Fires.

This effort will encompass the documentation and analysis of current ISR enterprise architectures to inform and guide requirements for target architecture development and performance requirements to support full use and incorporation of ISR capabilities to advance Navy operations afloat. The associated studies will produce both technical and non-technical implementation guidance across the Doctrine, Organization, Training, Material, Leadership, Personnel and Facilities spectrum.

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

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<b>Title:</b> Intelligence, Surveillance, and Reconnaissance (ISR) Architecture	1.476	1.428	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b>FY 2021 Plans:</b>					
- Complete analyzing the current Intelligence, Surveillance, and Reconnaissance (ISR) capabilities of afloat, ashore, joint, and national systems within mission contexts to demonstrate gaps and overlaps in Information Warfare capabilities and document in engineering artifacts and architectures. Perform trade space analysis and develop and quantify solutions using technical and operational performance parameters.					
- Complete building on the documentation and analysis of the enterprise ISR capabilities to support System of Systems engineering assessments to identify integration and interoperability gaps, trades, and solutions to support investment decision-making across the ISR portfolio.					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0606355N / Warfare Innovation Management	<b>Project (Number/Name)</b> 2147 / ISR Architecture

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
<ul style="list-style-type: none"> <li>- Complete integrating the National, Joint, and Naval ISR architectures within mission contexts to identify functional capacities, materiel integration and interoperability gaps and overlaps, as well as any policy and doctrine impacts.</li> <li>- Complete performing V&amp;V to ensure ISR architecture and analytic products accurately capture system performance specifications.</li> <li>- Complete capturing all architectural data in the NAVWAR analysis tool suite to support rigorous engineering assessments and architecture excursions against solution alternatives.</li> <li>- Complete ensuring alignment and interoperability between ISR Architectures and Joint Information Enterprise, Intelligence Community Information Technology Enterprise and NAVWAR Enterprise Architectures.</li> </ul> <p><b>FY 2022 Base Plans:</b> N/A</p> <p><b>FY 2022 OCO Plans:</b> N/A</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> Decrease of \$1.428M between FY21 and FY22 is attributed to a Naval ISR Reference Architecture vertical reduction, eliminating funding beginning in FY22.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	1.476	1.428	0.000	0.000	0.000

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

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**Exhibit R-2A, RDT&E Project Justification:** PB 2022 Navy **Date:** May 2021

<b>Appropriation/Budget Activity</b> 1319 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0606355N / Warfare Innovation Management	<b>Project (Number/Name)</b> 3319 / Fleet Experimentation
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
3319: <i>Fleet Experimentation</i>	0.000	8.924	8.928	10.830	-	10.830	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

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

Chief of Naval Operations (CNO) Navigation Plan, signed in January 2021, focuses on integrated, all-domain Naval power and clearly states that we will align our exercises, experiments, and education to understand requirements to defeat the adversary. Additionally, the Fleet will continue to experiment through fleet battle problems, wargames, and exercises - like Large Scale Exercise 2021 - to refine concepts and capabilities. Fleet Experimentation (FLEX) funds are used to support Fleet Design implementation which includes foundational warfighting concepts like Distributed Maritime Operations (DMO). FLEX experimentation is a proven and efficient approach to improving warfighting effectiveness. As directed in the annual Fleet Commanders' FLEX Guidance message, the FLEX program addresses warfighting gaps identified in IPCLs generated by Warfighting Development Centers (WDC), the Fleet Integrated Priorities Letter (IPL), Navy Urgent Operational Needs Statements (UONS), Fleet Design, DMO, and other concepts. FLEX funding resources experimentation venues - creating operationally representative environments to examine solutions with the potential to solve warfighting problems and mature foundational warfighting concepts. Through experimentation, new capabilities and solutions for identified gaps are tested, refined, and used to support acquisition strategies and inform procurement decisions. Additionally, through experimentation activities such as workshops, wargames, live at-sea events, and experimentation campaigns, the FLEX program examines potential materiel and non-materiel solutions that will enhance the Fleet's ability to execute assigned missions in the near term while building a foundation for capabilities that will be required in the mid to far term. FLEX events and campaigns require all facets of experimentation design, planning, systems engineering and integration, execution management, data collection, analysis, assessment, and the delivery of tangible products. While Navy-centric, FLEX efforts are coordinated with the Marine Corps, and include joint, coalition, Science and Technology (S&T), academia, and industry partners.

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

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<b>Title:</b> Fleet Experimentation (FLEX)	8.924	8.928	10.830	0.000	10.830
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Fleet Experimentation (FLEX) is a collaborative effort with multiple partners designed to address prioritized capability gaps to produce Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities, and Policy (DOTmLPP-P) actions. FLEX deliverables are focused on operational and tactical warfighting capabilities in the near term (within the Future Years Defense Plan) and prioritized by annual Fleet (Commander, U.S. Fleet Forces Command (CUSFFC), Commander, Pacific Fleet (CPF), and Commander, Naval Forces Europe - Africa (CNE-AF)) Commanders' guidance to enhance warfighting capability across all Joint Warfighting Functions, supporting IPCLs and KOPs. FLEX is an enabler for Fleet Design, Fleet Warfighting Training Construct (FWTC) and Distributed Maritime Operations (DMO). FLEX supports workshops, wargames, and operational experiments ashore and at-sea. FLEX provides venues and the expertise to					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0606355N / <i>Warfare Innovation Management</i>	<b>Project (Number/Name)</b> 3319 / <i>Fleet Experimentation</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
<p>identify DOTmLPF-P gaps for sponsored programs/technologies prior to delivery to the Fleet, with the goal of delivering capability wholeness to the warfighter. FLEX is vital to continuously improving critical naval warfighting capabilities</p> <p><b><i>FY 2021 Plans:</i></b> The following FLEX efforts built upon prior year efforts using various types of experimentation venues which included workshops, wargames, and operational shore-based and at-sea events:</p> <p>COUNTERMEASURE (MCM) CONCEPT TO TECHNOLOGY TABLE TOP EXERCISE (TTX) (.186) Experiment details can be provided via SIPR</p> <p>NAVAL TACTICAL GRID LIMITED OBJECTIVE EXPERIMENT (LOE) 1 (.186) Experiment details can be provided via SIPR</p> <p>STOIC LOE (.186) Experiment details can be provided via SIPR</p> <p>Fleet Experimentation (FLEX) during DAWN BLITZ 21 (.186) Experiment details can be provided via SIPR</p> <p>UNDERSEA INFRASTRUCTURE TARGETING (UIT) TARGETING (TTX) (.186) Experiment details can be provided via SIPR</p> <p>Fleet Experimentation (FLEX) in CITADEL SHIELD/SOLID CURTAIN 2021 (.323) Experiment details can be provided via SIPR</p> <p>Fleet Experimentation (FLEX) in FLEET BATTLE PROBLEM (FBP) 21-4 (.840) Experiment details can be provided via SIPR</p> <p>NAVAL TACTICAL GRID LOE 2 (.840) Experiment details can be provided via SIPR</p> <p>ELEKTRA TECHNOLOGY INNOVATION GAME (TIG) WORKSHOP (.186)</p>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0606355N / <i>Warfare Innovation Management</i>	<b>Project (Number/Name)</b> 3319 / <i>Fleet Experimentation</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
Experiment details can be provided via SIPR					
COUNTER SMALL UNMANNED AERIAL VEHICLES (C-sUAV) AT-SEA LOE (.580) Experiment details can be provided via SIPR					
Fleet Experimentation (FLEX) in FORMIDABLE SHIELD 2021 (.510) Experiment details can be provided via SIPR					
Fleet Experimentation (FLEX) in BALTIC OPERATIONS (BALTOPS) 2021 (1.200) Experiment details can be provided via SIPR					
HYDROGEN GENERATION LOE (.500) Experiment details can be provided via SIPR					
Fleet Experimentation (FLEX) in LARGE SCALE EXERCISE (LSE) 2021 (.311) Experiment details can be provided via SIPR					
KINETIC COUNTER UNMANNED SYSTEMS (C-UxS) LOE (.574) Experiment details can be provided via SIPR					
UNMANNED INTEGRATED BATTLE PROBLEM 21 (1.850) Experiment details can be provided via SIPR					
<b>FY 2022 Base Plans:</b> FY 2022 Base Plans: Specific plans for FY22 FLEX efforts are still under development and will be included in Department of Navy (DoN) Budget Estimate Submission (BES) RDOCS in late July/early August 2021. FY22 FLEX efforts will address priority Fleet warfighting gaps identified in the FY22 Commanders' FLEX Guidance message. FY22 FLEX efforts will continue to focus on materiel and non-materiel solutions using appropriate experimentation venues including workshops, wargames, and operational shore-based and at-sea experiments. Alignment with IPCLs, KOPs, and the U.S. Navy Fleet Design Campaign Plan will drive experimentation efforts under the following FLEX Campaign focus areas:					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0606355N / <i>Warfare Innovation Management</i>	<b>Project (Number/Name)</b> 3319 / <i>Fleet Experimentation</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
Focus area experiment details can be provided via SIPR					
PERSISTENT TARGETING AND LONG RANGE MARITIME FIRES Focus area experiment details can be provided via SIPR					
COUNTER-INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE Focus area experiment details can be provided via SIPR					
<b><i>FY 2022 OCO Plans:</i></b> N/A					
<b><i>FY 2021 to FY 2022 Increase/Decrease Statement:</i></b> FY22 increase of \$1.902M will fund three (3) stand-alone at sea experiments and experimentation in two (2) Fleet Battle Problems. Fleet Battle Problems provide a realistic, high-end maritime combat environment, and are an important tool to develop DMO capabilities. At sea experimentation is critical to the overall success of the Fleet Experimentation (FLEX) program because at-sea events provides the only operational experimentation environment to assess experimentation initiatives in order to rapidly deploy/transition DOTmLPF-P recommendations into new TTP, accelerate emerging technologies, develop Fleet Concepts of Operations (CONOPS) and to explore and evaluate innovative concepts.					
<b>Accomplishments/Planned Programs Subtotals</b>	8.924	8.928	10.830	0.000	10.830

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

**Remarks**

**D. Acquisition Strategy**  
N/A

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**Exhibit R-2A, RDT&E Project Justification:** PB 2022 Navy **Date:** May 2021

<b>Appropriation/Budget Activity</b> 1319 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0606355N / Warfare Innovation Management	<b>Project (Number/Name)</b> 3320 / TRIDENT Warrior
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
3320: TRIDENT Warrior	0.000	2.197	2.339	2.317	-	2.317	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-	-	-

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

U.S. Navy's Trident Warrior (TW) experiment campaign enables early delivery of Information Warfare (IW) capabilities to the warfighter via Fleet-directed TW operational events. Integrates stand-alone systems and efforts to achieve substantially enhanced capability, demonstrates/tests these capabilities in both laboratory and operational environments, and evaluates their effectiveness. Develops supporting concepts and Concept of Operations to improve warfighting effectiveness. Coordinates IW efforts with other Service/Joint/Department of Defense/National efforts to ensure Joint/Interagency/ Allied/Coalition applicability and interoperability.

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

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<b>Title:</b> Trident Warrior	2.197	2.339	2.317	0.000	2.317
<b>Articles:</b>	-	-	-	-	-
<b>FY 2021 Plans:</b>					
- Evaluate Trident Warrior 2020 (TW20) executed experiments and recommend next steps to all stakeholders.					
- Promote broad participation in TW by researching advanced technology solution candidates, in conjunction with other services, and academic research in order to fill Information Warfare technology gaps.					
- In accordance with standardized procedures, lead TW participant efforts with the following: specific goal identification; risk identification; experiment plans (to include data requirements and collection); and required installation and security certifications, accreditations, and approvals.					
- Provide independent experts and Subject Matter Expertise to ensure compliance with experiment plans, lead analysis effort, and deliver unbiased assessments and results to government sponsors to support the program's engineering recommendations.					
- Plan and execute Trident Warrior 2021 (TW21) experiments to accelerate the transition of IW capability to the Fleet.					
- Begin Trident Warrior 2022 (TW22) planning, taking into consideration identified Naval Capability Gaps.					
<b>FY 2022 Base Plans:</b>					
- Evaluate Trident Warrior 2021 (TW21) executed experiments and recommend next steps to all stakeholders.					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0606355N / <i>Warfare Innovation Management</i>	<b>Project (Number/Name)</b> 3320 / <i>TRIDENT Warrior</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
<p>- Promote broad participation in TW by researching advanced technology solution candidates, in conjunction with other services, and academic research in order to fill Information Warfare technology gaps.</p> <p>- In accordance with standardized procedures, lead TW participant efforts with the following: specific goal identification; risk identification; experiment plans (to include data requirements and collection); and required installation and security certifications, accreditations, and approvals.</p> <p>- Provide independent experts and Subject Matter Expertise to ensure compliance with experiment plans, lead analysis effort, and deliver unbiased assessments and results to government sponsors to support the program's engineering recommendations.</p> <p>- Plan and execute Trident Warrior 2022 (TW22) experiments to accelerate the transition of IW capability to the Fleet.</p> <p>- Begin Trident Warrior 2023 (TW23) planning, taking into consideration identified Naval Capability Gaps.</p> <p><b>FY 2022 OCO Plans:</b> N/A</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> Decrease of \$0.022M between FY21 and FY22 is attributed to reduction in Subject Matter Expertise (SME) support for core ship services during the experimentation period.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	2.197	2.339	2.317	0.000	2.317

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A