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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 0604230N / <i>Warfare Support System</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	113.275	14.541	13.167	12.337	-	12.337	12.499	13.175	13.155	13.073	Continuing	Continuing
3326: <i>NSW Rapid Capabilities Development for CIEC</i>	51.581	5.889	7.060	8.181	-	8.181	8.852	9.285	9.454	9.612	Continuing	Continuing
3445: <i>Visual Augmentation System Development</i>	0.000	0.000	1.147	1.184	-	1.184	1.218	1.238	1.265	1.289	Continuing	Continuing
3446: <i>Expeditionary sUAS Development</i>	0.000	0.000	0.249	1.273	-	1.273	0.679	0.877	0.627	0.325	Continuing	Continuing
4011: <i>Naval Coastal Warfare Surv and C4I Sys</i>	50.135	0.784	0.784	0.803	-	0.803	0.829	0.841	0.855	0.873	Continuing	Continuing
9999: <i>Congressional Adds</i>	0.000	6.753	3.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	9.753
9C86: <i>Combatant Craft Replacement</i>	11.559	1.115	0.927	0.896	-	0.896	0.921	0.934	0.954	0.974	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Rapid Capabilities Development (RCD) program supports the Naval Special Warfare (NSW) Branch by identifying and assessing available technologies that confront current and future irregular and expeditionary warfare challenges. Program development efforts focus on the enhancement/advancement of existing technologies to fill urgent and emergent capability gaps for NSW. Program funding provides for the development, integration, testing, validation, combat demonstration, and evaluation of identified technologies to meet operational requirements; service-common and NSW program technology challenges; and technology obsolescence issues of developed capabilities.

The RCD program develops expeditionary/operational capabilities that enable NSW forces to conduct joint cross-domain special reconnaissance, counterterrorism, direct action, amphibious and irregular warfare, and fulfill urgent/emergent needs within a 9-36 month timeframe.

As part of the Naval Coastal Warfare Surveillance program, Identity Dominance System (IDS) supports the Joint Personnel Identity (JPI) program. Maritime Expeditionary Security Force (MESF) have a mobile security mission that requires methodologies, procedures, equipment and the communications capacity to identify individuals who represent a potential threat as a means to deter and eliminate individuals from conducting asymmetric/non-traditional attacks upon friendly forces, high value assets and coastal areas that Naval Coastal Warfare (NCW) is charged with protecting. The Visit, Board, Search and Seizure (VBSS) teams conducting Expanded Maritime Interception Operations also have a similar requirement to identify individuals. The development of a device to support identity functions is captured in the IDS Capability Development Document (CDD) and implemented in the IDS Capability Production Document (CPD). IDS units are used in the following environments: aboard ships, ashore at ports, the littorals, and extended inland field environments worldwide. IDS is employed in both maritime and very austere ashore environments, carried by individuals who are part of ship boarding parties and by dismounted patrols. These mission and environmental requirements demand the need for a portable,

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Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604230N / <i>Warfare Support System</i>	
<p>lightweight, ruggedized, and reliable system with intuitive and user friendly features. IDS biometric modalities may differ by mission profile, requiring the authoritative response to the On-Scene Commander/Boarding Officer on whether to detain or further investigate an individual of interest or engage in a more thorough search of boarded ships.</p> <p>The United States Navy Service Common Visual Augmentation Systems (VAS) Program of Record manages, procures, and maintains night vision devices, thermal detection devices, day/night weapons optics, and lasers in support of Navy combat capabilities with regard to the detection, recognition, classification, tracking, and destruction of hostile air and surface forces. The USN VAS Program also manages research into the future of visual augmentation systems and engages with Navy and DoD VAS stakeholders to ensure the Navy maintains competitive advantage over near-peer adversaries.</p> <p>Combatant Craft Replacement will provide next generation Expeditionary Multi Mission Craft that will replace in-service Expeditionary Combatant Craft. Combatant Craft replacements shall forward deploy and persistently engage in order to dominate in the Littorals and reinforce Distributed Maritime Operations Lethality, they gain access to as well as CLEAR the battlespace of unexploded ordnance and other man-made or natural hazards and SECURE and PROTECT critical infrastructure and their approaches from the sea for naval platforms as they conduct operations. These capabilities are critical to Navy employment of modern warfare concepts, including Distributed Maritime Operations (DMO), Expeditionary Advanced Base Operations (EABO), and Littoral Operations in a Contested Environment (LOCE). Specific mission and capabilities will be identified in an Initial Capabilities Document (ICD) or Letter of Requirements. RDT&E funding will fund feasibility studies and procurement of mock-ups and prototype craft and craft and mission support technology to demonstrate capabilities prior to production craft procurement.</p> <p>The Diesel Fuel Outboard Motor Testing project supports the transition of the FY 2015 Rapid Innovation Fund "Affordable Multi-fuel Multi-engine Advanced Combatant Craft" program to the Explosive Ordnance Disposal Force. This technology minimizes the types of fuel required to increase standardization, flexibility, and interoperability during deployment while at the same time reduces total ownership cost. Testing of this technology shall determine the operational viability and any changes required to boat design to ensure safety and suitability.</p> <p>DRAKE is the shipboard Counter-Unmanned Aircraft System (CUAS) to meet the CUAS Afloat Top Level Requirements (TLR). Funds will be used to develop, test, and integrate COTS-based hardware, software, and advanced techniques into DRAKE; thus improving its capability to detect, identify, and defeat UAS that threaten ships. Upgrades include hardware refresh with faster COTS processors to increase processing speed and reaction time (NextGen SDR), a COTS tablet (CDU 2.0) to improve situational awareness, and evaluation of COTS antennas to improve detection and defeat of UAS.</p>		

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B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	14.942	10.167	0.000	-	0.000
Current President's Budget	14.541	13.167	12.337	-	12.337
Total Adjustments	-0.401	3.000	12.337	-	12.337
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	3.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.401	0.000			
• 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	-	-	12.337	-	12.337

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

Project: 9999: *Congressional Adds*

Congressional Add: *COTS-Based Counter-UAV Technology*

Congressional Add: *Diesel Fuel Outboard Motor Testing*

Congressional Add: *Operational deployment of diesel-fueled outboard marine motors*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2021	FY 2022
	4.824	0.000
	1.929	0.000
	0.000	3.000
	6.753	3.000
	6.753	3.000

Change Summary Explanation

FY 2021: *-\$0.401M Small Business Innovation Research (SBIR)*

FY 2022: *N/A*

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 0604230N / Warfare Support System				Project (Number/Name) 3326 / NSW Rapid Capabilities Development for CIEC			
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
3326: NSW Rapid Capabilities Development for CIEC	51.581	5.889	7.060	8.181	-	8.181	8.852	9.285	9.454	9.612	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Rapid Capabilities Development (RCD) program supports the Naval Special Warfare (NSW) Branch by identifying and assessing available technologies that confront current and future irregular and expeditionary warfare challenges. Program development efforts focus on the enhancement/advancement of existing technologies to fill urgent and emergent capability gaps for NSW. Program funding provides for the development, integration, testing, validation, combat demonstration, and evaluation of identified technologies to meet operational requirements; service-common and NSW program technology challenges; and technology obsolescence issues of developed capabilities.

The RCD program develops expeditionary/operational capabilities that enable NSW forces to conduct joint cross-domain special reconnaissance, counterterrorism, direct action, amphibious and irregular warfare, and fulfill urgent/emergent needs within a 9-36 month timeframe.

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

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Navy Irregular Warfare	5.889	7.060	8.181	0.000	8.181
Articles:	-	-	-	-	-
FY 2022 Plans: FY 2022 \$7.060M funding will utilize:					
\$2.250M for artificial intelligence and machine learning designed to supplement human decision-making, communications and navigation in denied environments, and integration of these systems aboard Naval Special Warfare undersea and surface mobility assets and systems.					
\$3.154M for unmanned systems payload development (fiber optic, scalable effects, data security) designed to improve operator situational awareness, tactical maneuver, and improved digital security on the battlefield.					
\$1.656M for continuing advancement of FY20/21 prototyping efforts and field evaluation of developing technologies, and Broad Area Announcement, Small Business Innovative Research processes for the identification of technologies that enhance and/or accelerate expeditionary and irregular capabilities in support of NSW capability challenges.					
FY 2023 Base 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 0604230N / Warfare Support System	Project (Number/Name) 3326 / NSW Rapid Capabilities Development for CIEC

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<p>FY 2023 \$8.181M funding will utilize:</p> <p>\$3.250M for artificial intelligence and machine learning designed to supplement human decision-making, communications and navigation in denied environments, and integration of these systems aboard Naval Special Warfare undersea and surface mobility assets and systems.</p> <p>\$3.897M for unmanned systems payload development (fiber optic, scalable effects (kinetic/non-kinetic), data security) designed to improve operator situational awareness, tactical maneuver, improved digital security, and lethality on the battlefield.</p> <p>\$1.034M for continuing advancement of FY21/22 prototyping efforts and field evaluation of developing technologies, and Broad Area Announcement, Small Business Innovative Research processes for the identification of technologies that enhance and/or accelerate expeditionary and irregular capabilities in support of NSW capability challenges.</p> <p>FY 2023 OCO Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: The increase in funding from FY22 (\$7.060M) to FY23 (\$8.181M) is due to support increases in artificial intelligence, machine learning, and unmanned systems payload development to enable manned, unmanned teaming concepts of operations and capability development.</p>					
Accomplishments/Planned Programs Subtotals	5.889	7.060	8.181	0.000	8.181

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

N/A

Remarks

D. Acquisition Strategy

Conduct initial validation of component-specific capability gaps. Identify technical requirements necessary to meet immediate and future warfighter needs; integrate existing unique and/or related capabilities that can best meet the identified operational requirements; conduct test and evaluation; and then demonstrate in real time and/or during planned operations within a 9-36 month period. Endeavor to leverage existing mature technologies to take advantage of investments already made to reduce cost and time to market; and seek out cost-sharing opportunities with other resource sponsors to make program funding more effective for the end-user.

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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 0604230N / Warfare Support System	Project (Number/Name) 3326 / NSW Rapid Capabilities Development for CIEC
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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			
Program Management Spt	C/CPFF	Dell : Washington, DC	0.625	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Management Spt	C/CPAF	Cydecor : Arlington, VA	0.615	0.040	Feb 2021	0.000		0.000		-		0.000	0.000	0.655	-
Travel	WR	NAVSEA/HQ : Washington, DC	0.459	0.040	Dec 2020	0.025	Oct 2021	0.025	Oct 2022	-		0.025	Continuing	Continuing	Continuing
Program Management Spt	WR	NAVSEA/HQ : Washington, DC	0.256	0.000		0.145	Oct 2021	0.063	Oct 2022	-		0.063	0.000	0.464	-
Program Management Spt	WR	NSWC : Crane, IN	0.300	0.000		0.000		0.000		-		0.000	0.000	0.300	-
Program Management Spt	WR	NSWC : Dahlgren, VA	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	-
Program Management Spt	WR	NSWC : Panama City, FL	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	-
Program Management Spt	WR	NSWC : Carderock, MD	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	-
Program Management Spt	WR	NUWC : Newport, RI	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	-
Subtotal			2.455	0.080		0.170		0.088		-		0.088	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 and Evaluation	WR	NUWC : Newport, RI	4.248	0.767	Mar 2021	1.111	Oct 2021	1.385	Oct 2022	-		1.385	Continuing	Continuing	Continuing
Test and Evaluation	WR	NAWC : China Lake, CA	0.595	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Test and Evaluation	WR	NSWC : Carderock, MD	2.032	0.000		1.750	Oct 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Test and Evaluation	SS/CPFF	ARL/UT : Austin, TX	0.907	1.170	Dec 2020	0.950	Oct 2021	1.129	Oct 2022	-		1.129	Continuing	Continuing	Continuing
Test and Evaluation	SS/CPFF	SPAWAR : San Diego, CA	1.195	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing

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Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System	Project (Number/Name) 3326 / NSW Rapid Capabilities Development for CIEC
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Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	WR	SPAWAR : Charleston, SC	1.050	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Test and Evaluation -WR	WR	SPAWAR : San Diego, CA	1.254	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Test and Evaluation	SS/FFP	ARL/PSU : State College, PA	1.540	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Test and Evaluation	WR	NRL : Washington, DC	1.065	0.850	Oct 2021	0.775	Oct 2021	1.100	Oct 2022	-		1.100	Continuing	Continuing	Continuing
Test and Evaluation	WR	NSWC : Indian Head, MD	1.862	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Test and Evaluation	Various	Various : Various	2.274	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Test and Evaluation	SS/FFP	NSWC : Panama City, FL	0.539	0.000		0.000		0.000		-		0.000	0.000	0.539	-
Test and Evaluation-WR	WR	NSWC : Dahlgren, VA	2.042	0.539	Mar 2021	0.000		0.000		-		0.000	0.000	2.581	-
Test and Evaluation	SS/FFP	NSWC : Dahlgren, VA	0.512	0.000		0.000		0.000		-		0.000	0.000	0.512	-
Test and Evaluation	SS/CPFF	APL/JHU : Laurel, MD	0.327	0.000		0.000		0.000		-		0.000	0.000	0.327	-
Test and Evaluation	SS/CPFF	Army Research Lab. : Adelphia, MD	0.247	0.000		0.000		0.000		-		0.000	0.000	0.247	-
Test and Evaluation	SS/CPFF	PNNL : Richland, WA	0.130	0.000		0.000		0.000		-		0.000	0.000	0.130	-
Test and Evaluation	C/CPFF	Georgia Tech : Atlanta, GA	1.634	0.000		0.000		0.000		-		0.000	0.000	1.634	-
Test and Evaluation	C/CPFF	Charles River : Cambridge, MA	0.521	0.000		0.000		0.000		-		0.000	0.000	0.521	-
Test and Evaluation	C/CPFF	L3 Comm : Burlington, MA	0.972	0.000		0.000		0.000		-		0.000	0.000	0.972	-
Test and Evaluation	C/CPFF	QinetiQ NA : Waltham, MA	0.704	0.000		0.000		0.000		-		0.000	0.000	0.704	-

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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 0604230N / Warfare Support System	Project (Number/Name) 3326 / NSW Rapid Capabilities Development for CIEC
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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 and Evaluation	WR	NAVAIR : Patuxent, MD	1.335	0.000		0.000		0.000		-		0.000	0.000	1.335	-
Test and Evaluation	SS/CPFF	Strategos Consulting : Coronado, Ca	0.178	0.000		0.000		0.000		-		0.000	0.000	0.178	-
Test and Evaluation	WR	NAVAIR : San Diego, CA	0.425	0.000		0.000		0.000		-		0.000	0.000	0.425	-
Test and Evaluation	SS/CPFF	NSMA : Wash, DC	3.069	0.000		0.000		0.000		-		0.000	0.000	3.069	-
Test and Evaluation	C/CPFF	Advanced Systems : Manassas, VA	0.150	0.000		0.000		0.000		-		0.000	0.000	0.150	-
Test and Evaluation	SS/CPFF	NAVSEA : Washington, DC	2.707	0.553	Dec 2020	0.549	Oct 2021	2.694	Oct 2022	-		2.694	0.000	6.503	-
Test and Evaluation	WR	NSWC : Crane, IN	1.136	0.000		0.000		0.000		-		0.000	0.000	1.136	-
Test and Evaluation	Reqn	ANL : Chicago, IL	0.114	0.000		0.000		0.000		-		0.000	0.000	0.114	-
Test and Evaluation	WR	NUWC : Keyport, RI	0.348	0.000		0.000		0.000		-		0.000	0.000	0.348	-
Test and Evaluation	SS/CPFF	General Atomics : San Diego, CA	1.923	0.000		0.000		0.000		-		0.000	0.000	1.923	-
Test and Evaluation	SS/CPFF	ASSETT : Manassas, VA	1.032	0.000		0.000		0.000		-		0.000	0.000	1.032	-
Test and Evaluation	SS/CPFF	Battelle : Columbus, OH	1.869	0.000		0.000		0.000		-		0.000	0.000	1.869	-
Test and Evaluation	SS/CPFF	WHOI : Woods Hole, MA	0.225	0.000		0.650	Jan 2022	0.000		-		0.000	0.000	0.875	-
Test and Evaluation	SS/CPFF	Boeing : Seattle, WA	0.300	0.000		0.000		0.000		-		0.000	0.000	0.300	-
Test and Evaluation	SS/CPFF	AeroVironment : Monrovia, CA	0.525	0.000		0.000		0.000		-		0.000	0.000	0.525	-
Test and Evaluation	SS/CPFF	Northrup Grumman : Falls Church, VA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Test and Evaluation	C/CPFF	IN POWER : Morrisville, NC	0.292	0.000		0.000		0.000		-		0.000	0.000	0.292	-
Test and Evaluation-WR	WR	NSWC : Panama City, FL	1.310	0.058	Jan 2021	0.250	Oct 2021	0.250	Oct 2022	-		0.250	0.000	1.868	-

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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 0604230N / <i>Warfare Support System</i>	Project (Number/Name) 3326 / <i>NSW Rapid Capabilities Development for CIEC</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3326				
System Development: Technology Assessments/Demonstrations	1	2022	4	2024
System Development: Test and Evaluations	1	2022	4	2024

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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 0604230N / Warfare Support System				Project (Number/Name) 3445 / Visual Augmentation System Development			
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
3445: Visual Augmentation System Development	0.000	0.000	1.147	1.184	-	1.184	1.218	1.238	1.265	1.289	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The United States Navy Service Common Visual Augmentation Systems (VAS) Program of Record manages, procures, and maintains night vision devices, thermal detection devices, day/night weapons optics, and lasers in support of Navy combat capabilities with regard to the detection, recognition, classification, tracking, and destruction of hostile air and surface forces. The USN VAS Program also manages research into the future of visual augmentation systems and engages with Navy and DoD VAS stakeholders to ensure the Navy maintains competitive advantage over near-peer adversaries.

Research, Development, Test and Evaluation, Navy funding provides the United States Navy Service Common Visual Augmentation Systems (VAS) Program of Record with the ability to maintain competitive advantage over the nation's near peer adversaries by leveraging the military research community, other DoD VAS programs, academia and commercial industry in order to transition mature technologies (active, passive, multi-domain imaging sensors, laser systems, display systems, optics, image processing) that align with US Navy and DoD priorities.

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

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Visual Augmentation Systems	0.000	1.147	1.184	0.000	1.184
Articles:	-	-	-	-	-
FY 2022 Plans: DoN VAS will assess United States Special Operations Command (USSOCOM) VAS RDT&E efforts to determine applicability to address DoN VAS capability gaps and assess legacy/obsolescence projections to fill in any further capability gaps.					
FY 2023 Base Plans: VAS RDT&E efforts to address the following DoN VAS capability gaps in addition to assessment for projections of any future capability gaps: Flight/Well Deck Crew Binocular Night Vision Device (BNVD) Long Range Night Vision Sight for Ship's Navigation Ranging Device Laser Designator Option Thermal Family of Systems					

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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 0604230N / Warfare Support System	Project (Number/Name) 3445 / Visual Augmentation System Development

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Small Arms Collimator Future Capability Assessment					
FY 2023 OCO Plans: N/A					
FY 2022 to FY 2023 Increase/Decrease Statement: The increase in funding from FY22 to FY23 is due to support increases.					
Accomplishments/Planned Programs Subtotals	0.000	1.147	1.184	0.000	1.184

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/8128: NCW Forces Active	139.693	110.647	114.539	-	114.539	116.551	114.277	114.717	116.812	Continuing	Continuing

Remarks

D. Acquisition Strategy
DoN VAS Service Common VAS RDT&E efforts to support modernization/standardization of VAS equipment and address DoN VAS capability gaps and legacy/obsolescence projections to fill in any further capability gaps.

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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 0604230N / Warfare Support System	Project (Number/Name) 3445 / Visual Augmentation System Development
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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 and Evaluation	WR	NSWC Crane : Crane, IN	0.000	0.000		0.920	Jan 2022	0.000		-		0.000	0.000	0.920	-
Flight Well Deck Crew Binocular Night Vision	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.014	Jan 2023	-		0.014	0.000	0.014	-
Long Range Night Vision Sight for Ship's Navigation	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.045	Jan 2023	-		0.045	0.000	0.045	-
Ranging Device	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.025	Jan 2023	-		0.025	0.000	0.025	-
Laser Designator Option	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.185	Jan 2023	-		0.185	0.000	0.185	-
Thermal Family of Systems	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.211	Jan 2023	-		0.211	0.000	0.211	-
Small Arms Collimator	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.111	Jan 2023	-		0.111	0.000	0.111	-
Future Capability	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Subtotal			0.000	0.000		0.920		0.591		-		0.591	0.000	1.511	N/A

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			
Program Management	WR	NSWC Crane : Crane, IN	0.000	0.000		0.227	Nov 2021	0.005	Nov 2022	-		0.005	Continuing	Continuing	Continuing
Flight Well Deck Crew Binocular Night Vision	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.032	Nov 2022	-		0.032	0.000	0.032	-
Long Range Night Vision Sight for Ship's Navigation	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.076	Nov 2022	-		0.076	0.000	0.076	-
Ranging Device	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.076	Nov 2022	-		0.076	0.000	0.076	-
Laser Designator Option	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.075	Nov 2022	-		0.075	0.000	0.075	-

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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 0604230N / Warfare Support System	Project (Number/Name) 3445 / Visual Augmentation System Development

FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 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

Proj 3445	
System Development: Technology & Obsolescence Replacement Road Map	██████████
System Development: Capability Gap Test & Evaluation	██████████
System Development: Flight/Well Deck Crew Binocular Night Vision Device (BNVD)	██████
System Development: Long Range Night Vision Sight for Ship's Navigation	██████████
System Development: Ranging Devices	███
System Development: Laser Designator Option	██████████
System Development: Thermal Family of Systems	██████████
System Development: Small Arms	██████████
System Development: Future Capability	██████████

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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 0604230N / <i>Warfare Support System</i>	Project (Number/Name) 3445 / <i>Visual Augmentation System Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3445				
System Development: Technology & Obsolescence Replacement Road Map	1	2022	4	2022
System Development: Capability Gap Test & Evaluation	1	2022	4	2022
System Development: Flight/Well Deck Crew Binocular Night Vision Device (BNVD)	1	2023	2	2023
System Development: Long Range Night Vision Sight for Ship's Navigation	1	2023	3	2023
System Development: Ranging Devices	1	2023	1	2023
System Development: Laser Designator Option	1	2023	3	2023
System Development: Thermal Family of Systems	1	2023	4	2023
System Development: Small Arms	1	2023	4	2023
System Development: Future Capability	1	2023	4	2023

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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 0604230N / Warfare Support System				Project (Number/Name) 3446 / Expeditionary sUAS Development			
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
3446: Expeditionary sUAS Development	0.000	0.000	0.249	1.273	-	1.273	0.679	0.877	0.627	0.325	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Naval Expeditionary Warfare includes Naval Special Warfare (NSW) and all subordinate commands that are aligned under Navy Expeditionary Combat Command (NECC) which includes Explosive Ordnance Disposal (EOD), Naval Construction Force (NCF), and Mobile Diving and Salvage (MDS). The Family of Small Unmanned Aircraft Systems (FoSUAS) procures small unmanned aircraft systems (SUAS) to provide NSW, NECC and other Navy units with scalable airborne Reconnaissance, Surveillance and Target Acquisition (RSTA) capabilities. These capabilities are required to aid in detecting, identifying, engaging, and/or avoiding enemy units/other enemy activities, conduct Area Survey/Mapping, perform Route/Road Reconnaissance, assist in Expeditionary Airfield Damage Repair (ExADR), facilitate Port Damage Repair, and provide force protection.

Currently procured, and planned procurement of, Fixed Wing (FW) and Vertical Takeoff & Landing (VTOL) SUAS solution sets (includes Short Range/Short Endurance (SR/SE), Medium Range/Medium Endurance (MR/ME), Long Range/Long Endurance (LR/LE)) will meet validated operational requirements in accordance with the and the approved Navy Expeditionary FoSUAS PoR Top Level Requirements (TLR) document.

In addition to supporting the requirements in the Rucksack Portable Unmanned Aircraft Vehicle (RPUAV) Operational Requirements Document (ORD), and TLR, RDTE funding for the FoSUAS program will be utilized to conduct activities including, but not be limited to, engineering analysis of Commercial Systems, operational assessments, Field User Evaluations (FUEs), efforts to support Urgent Universal Needs Statements (UUNS), development of tactics, techniques, and procedures, development of SUAS Reusable Architectures (SRA) and other requirements documents to inform future Navy systems procurements, testing and validation of alternative solution sets to the capability requirements, and cyber certifications of candidate SUAS that meet operational requirements.

The funding increase from FY22 to FY23 supports increased NSW operational demand, addition of NECC efforts and continued SRA development and test and evaluation.

Schedule change includes additional fidelity into planned activities.

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

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Test and Evaluation (Operational Assessment)	0.000	0.249	1.273	0.000	1.273
Articles:	-	-	-	-	-
FY 2022 Plans: - Operational assessment of SUAS Common Control Architecture (SCCA) for FoSUAS platforms.					

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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 0604230N / Warfare Support System	Project (Number/Name) 3446 / Expeditionary sUAS Development
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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>- Assessment of low cost, commercially available Unmanned Aircraft Systems to inform future procurements and determine potential adversary capabilities.</p> <p>FY 2023 Base Plans:</p> <ul style="list-style-type: none"> - Continued integration and operational assessment of SRA for FoSUAS platforms. - Assessment via technology demonstrations, field user evaluations, and market research of low cost, commercially available UAS to inform future procurements and determine potential adversary capabilities. - Provide engineering analysis for coordinated Field User Evaluations of alternative FoSUAS solutions. - Assessment of UAS and payload capabilities as a means to facilitate/better enable Naval Expeditionary Forces in identifying effective alternatives to meet capability requirements. <p>FY 2023 OCO Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: The funding increase from FY22 to FY23 supports increased NSW operational demand, addition of NECC efforts and SRA test and evaluation.</p>					
Accomplishments/Planned Programs Subtotals	0.000	0.249	1.273	0.000	1.273

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

N/A

Remarks

D. Acquisition Strategy

The program office is pursuing a rapid acquisition approach to quickly field new technology and capabilities to the warfighter. The strategy is to use evolutionary acquisition with incremental developments to meet the final desired FoSUAS requirements. The increment will involve an evolution to a Group 1-2 (Family of Systems) individually capable of executing requirements for short, medium and long range missions in fulfillment of the FoSUAS requirements and the transition to the capability set as determined to meet next generation requirements. Iterative reviews of the next generation service FoSUAS needs and requirements continue to be coordinated by OPNAV, Navy Special Warfare Command, elements of NECC, and other Navy activities to update and/or supersede current requirements documents.

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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 0604230N / Warfare Support System	Project (Number/Name) 3446 / Expeditionary sUAS Development
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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			
SRA Analysis and Integration	WR	NAWCAD : PAX RIVER, MD	0.000	0.000		0.050	May 2022	0.274	May 2023	-		0.274	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.050		0.274		-		0.274	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			
Commercial UAS Analysis/ Cyber Security/IA	WR	NAWCAD : PAX RIVER, MD	0.000	0.000		0.080	Mar 2022	0.200	Mar 2023	-		0.200	Continuing	Continuing	Continuing
Engineering Analysis	WR	NAWCAD : PAX RIVER, MD	0.000	0.000		0.020	Mar 2022	0.199	Mar 2023	-		0.199	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.100		0.399		-		0.399	Continuing	Continuing	N/A

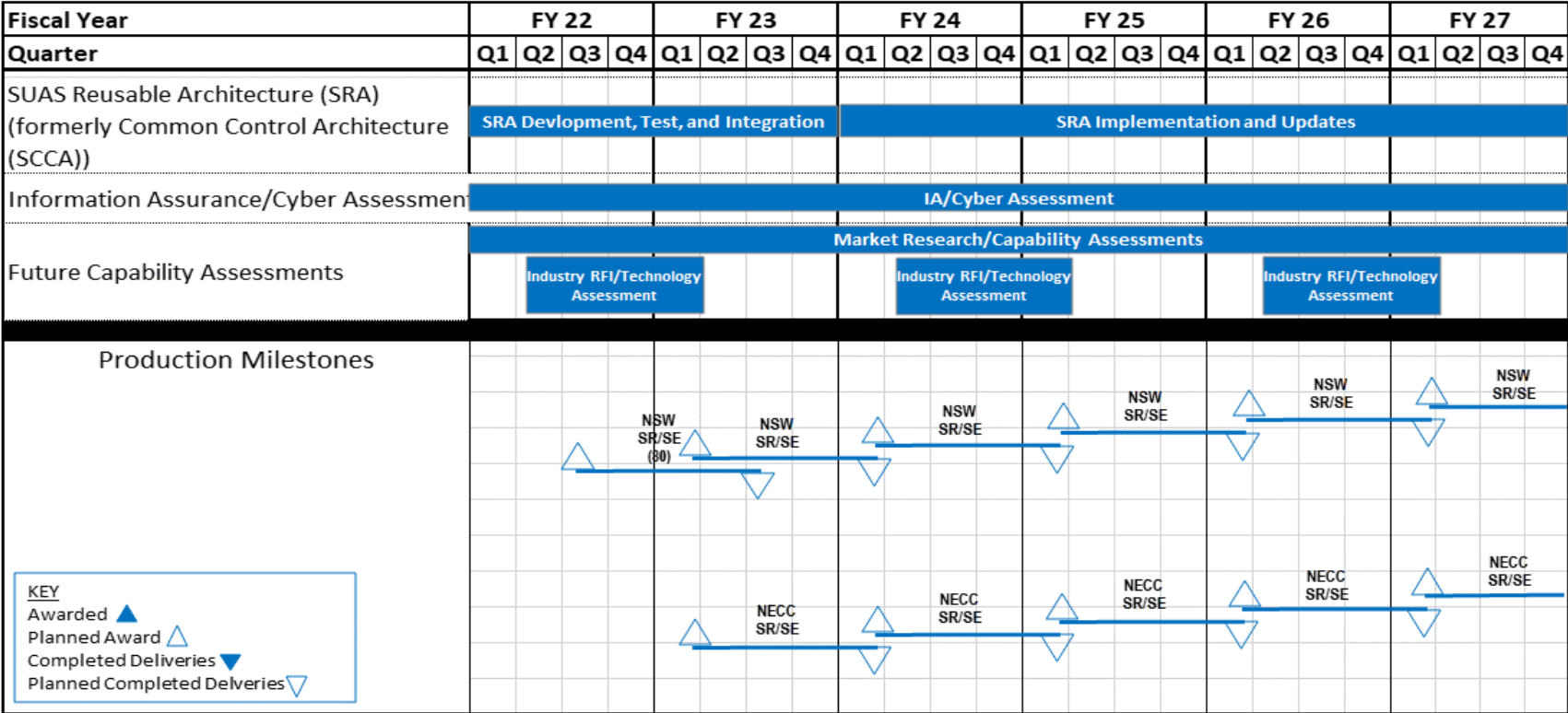
Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Operational Assessment of SRA and Analysis of SUAS	WR	VARIOUS : VARIOUS	0.000	0.000		0.099	Jan 2022	0.600	Jan 2023	-		0.600	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.099		0.600		-		0.600	Continuing	Continuing	N/A

	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	0.000	0.249	1.273	-	1.273	Continuing	Continuing

Remarks

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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 0604230N / Warfare Support System
Project (Number/Name) 3446 / Expeditionary sUAS Development	



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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 0604230N / Warfare Support System	Project (Number/Name) 3446 / Expeditionary sUAS Development
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3446				
SUAS Reusable Architecture (SRA): SRA Development and Integration Verification	1	2022	4	2024
SUAS Reusable Architecture (SRA): SRA AV Commercial Operational Assessment	1	2022	4	2027
Future Capability Assessments/IA: COTS/Cyber/IA Assessment	1	2022	4	2027
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY22 SR/SE	2	2022	2	2022
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY23 SR/SE	2	2023	2	2023
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY24 SR/SE	2	2024	2	2024
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY25 SR/SE	2	2025	2	2025
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY26 SR/SE	2	2026	2	2026
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY27 SR/SE	2	2027	2	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 0604230N / Warfare Support System				Project (Number/Name) 4011 / Naval Coastal Warfare Surv and C4I Sys			
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
4011: Naval Coastal Warfare Surv and C4I Sys	50.135	0.784	0.784	0.803	-	0.803	0.829	0.841	0.855	0.873	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Identity Dominance System (IDS) supports the Navy's Visit, Board, Search and Seizure (VBSS) teams conducting Expanded Maritime Interception Operations (MIO) with a biometric capability. IDS provides the Navy with a means to collect and process identity information in the conduct of maritime and expeditionary operations. There are three key aspects of this capability: 1) Enable forces to rapidly identify unknown individuals encountered in the conduct of operations. 2) Verify an unknown individual's claimed identity. 3) Enable forces to update, manage, and share identity information on friendly, neutral, and enemy individuals in support of identity operations (IdOps). To support IdOps and achieve identity dominance for expeditionary and naval forces, the future biometrics collection and processing equipment needs to be smaller, lighter, and more efficient with respect to computing power and speed when compared against the current system. The equipment needs to take advantage of enhanced communications capabilities, be able to store the appropriate amount of data to collect biometric samples, match the samples against an internal database and reach near real time operations with connectivity to the DoD biometrics database. In addition to Navy VBSS MIO, IDS also supports the Expeditionary Exploitation Unit One (EXU-1) expeditionary missions. IDS must continue to mature and adapt to the changing threat environment and emerging requirements to support these missions.

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

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Identity Dominance System	0.784	0.784	0.803	0.000	0.803
Articles:	-	-	-	-	-
Description: The Identity Dominance System (IDS) is completing a technology refresh to field a sustainable system, reduce maintenance and sustainment costs, improve system capabilities, and eliminate performance shortfalls.					
FY 2022 Plans: The tech refresh system will be updated via Engineering Change Proposals for enhancements, Information Assurance, and S/W or H/W changes which ensure systems are not vulnerable to cyber attacks. IDS will increase and support the Identity Operations and Force Protection efforts to those individuals deployed. The continued efforts of building a database of suspected enemies to the United States will allow potential threats to be identified at foreign access control points and in international waters.					
FY 2023 Base 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 0604230N / Warfare Support System	Project (Number/Name) 4011 / Naval Coastal Warfare Surv and C4I Sys

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
The tech refresh system will be updated via Engineering Change Proposals for enhancements, Information Assurance, and S/W or H/W changes which ensure systems are not vulnerable to cyber attacks. IDS will increase and support the Identity Operations and Force Protection efforts to those individuals deployed. The continued efforts of building a database of suspected enemies to the United States will allow potential threats to be identified at foreign access control points and in international waters. FY 2023 OCO Plans: N/A FY 2022 to FY 2023 Increase/Decrease Statement: Increase for development of software to meet emergent cybersecurity requirements.					
Accomplishments/Planned Programs Subtotals	0.784	0.784	0.803	0.000	0.803

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/8128: <i>Biometrics</i>	139.693	110.647	114.539	-	114.539	116.551	114.277	114.717	116.812	Continuing	Continuing

Remarks

D. Acquisition Strategy

Identity Dominance System (IDS) will continue to provide a biometric capability to the Navy's expeditionary/forward deployed forces through system upgrades and further collaboration with other biometric stakeholders. The funding supports development and integration of new capabilities designed to enhance the overall performance of IDS and improve our Nation's security posture abroad and in CONUS. The program continually assesses the threat environment, security posture, operational requirements, and DOD and Navy policies related to Identity Operations and Force Protection. The program will evaluate, integrate, and field new capabilities to Maritime and Expeditionary Forces.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy												Date: April 2022			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 5				PE 0604230N / Warfare Support System				4011 / Naval Coastal Warfare Surv and C4I Sys							
Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering - Expeditionary	WR	NSWC : PANAMA CITY, FL	5.080	0.000		0.000		0.000		-		0.000	0.000	5.080	Continuing
Hardware/Software Development	WR	NSWC DAHLGREN : DAHLGREN	4.016	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Hardware/Software Development	WR	NSWC CRANE : CRANE	1.450	0.000		0.000		0.000		-		0.000	0.000	1.450	Continuing
Systems Engineering - IDS	WR	NSWC : DAHLGREN	7.649	0.321	Jan 2021	0.318	Nov 2021	0.283	Nov 2022	-		0.283	Continuing	Continuing	Continuing
Hardware/Software Development - IDS	WR	NSWC : DAHLGREN	0.718	0.273	Jan 2021	0.279	Nov 2021	0.398	Nov 2022	-		0.398	Continuing	Continuing	Continuing
Product Development Prior Years	Various	Various : Various	10.174	0.000		0.000		0.000		-		0.000	0.000	10.174	10.174
Need Item Text	C/BA	Not Specified : Not Specified	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Subtotal			29.087	0.594		0.597		0.681		-		0.681	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Data	WR	NSWC : CRANE	0.260	0.000		0.000		0.000		-		0.000	0.000	0.260	Continuing
Technical Data	WR	NSWC : DAHLGREN	0.187	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Support Prior Years	Various	Various : Various	5.206	0.000		0.000		0.000		-		0.000	0.000	5.206	5.206
Subtotal			5.653	0.000		0.000		0.000		-		0.000	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation - IDS	WR	NSWC : DAHLGREN	0.823	0.190	Jan 2021	0.187	Nov 2021	0.122	Nov 2022	-		0.122	Continuing	Continuing	Continuing

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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 0604230N / Warfare Support System	Project (Number/Name) 4011 / Naval Coastal Warfare Surv and C4I Sys
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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 - Expeditionary	WR	NSWC : PANAMA CITY, FL	2.772	0.000		0.000		0.000		-		0.000	0.000	2.772	-
Subtotal			3.595	0.190		0.187		0.122		-		0.122	Continuing	Continuing	N/A

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 Services Prior Years	Various	Various : Various	0.275	0.000		0.000		0.000		-		0.000	0.000	0.275	0.275
Program Management Support	Various	Various : Various	5.388	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Management Support - IDS	WR	NSWC : DAHLGREN	5.075	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Management Support - IDS	WR	NSWC : CRANE	1.062	0.000		0.000		0.000		-		0.000	0.000	1.062	-
Subtotal			11.800	0.000		0.000		0.000		-		0.000	Continuing	Continuing	N/A

Project Cost Totals	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
	50.135	0.784	0.784	0.803	-	0.803	Continuing	Continuing	N/A

Remarks

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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 0604230N / Warfare Support System	Project (Number/Name) 4011 / Naval Coastal Warfare Surv and C4I Sys

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 4011				
Acquisition Milestones: Identity Dominance System (IDS): IDS Tech Refresh Delivery Order Award	3	2022	3	2022
Acquisition Milestones: Identity Dominance System (IDS): IDS Tech Refresh Fielding	3	2023	1	2025
Acquisition Milestones: Identity Dominance System (IDS): Milestone - Tech Refresh #2 CCB	4	2027	4	2027
System Development: Identity Dominance System (IDS): IDS Tech Refresh Development and Testing	1	2021	2	2021
System Development: Identity Dominance System (IDS): IDS Tech Refresh Information Assurance ECP Development and Validation	1	2021	2	2027
Production: Identity Dominance System (IDS): IDS Tech Refresh Production	4	2022	2	2023

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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 0604230N / Warfare Support System				Project (Number/Name) 9999 / Congressional Adds			
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
9999: Congressional Adds	0.000	6.753	3.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	9.753
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

DRAKE is the shipboard Counter-Unmanned Aircraft System (CUAS) to meet the N96 CUAS Afloat Top Level Requirements (TLR). Funds will be used to develop, test, and integrate COTS-based hardware, software, and advanced techniques into DRAKE; thus improving its capability to detect, identify, and defeat UAS that threaten ships. Upgrades include hardware refresh with faster COTS processors to increase processing speed and reaction time (NextGen SDR), a COTS tablet (CDU 2.0) to improve situational awareness, and evaluation of COTS antennas to improve detection and defeat of UAS.

The Diesel Fuel Outboard Motor Testing project supports the transition of the FY 2015 Rapid Innovation Fund "Affordable Multi-fuel Multi-engine Advanced Combatant Craft" program to the Explosive Ordnance Disposal Force. This technology minimizes the types of fuel required to increase standardization, flexibility, and interoperability during deployment while at the same time reduces total ownership cost. Testing of this technology shall determine the operational viability and any changes required to boat design to ensure safety and suitability.

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

	FY 2021	FY 2022
Congressional Add: COTS-Based Counter-UAV Technology	4.824	0.000
FY 2021 Accomplishments: Development and integration of technology insertions, including the NextGen Software Defined Radio (SDR), CDU 2.0, antennas, and several C-UAS advanced threat techniques for DRAKE systems. Prepare for implementation and test of the NextGen SDR and CDU 2.0 techniques in early FY22.		
FY 2022 Plans: N/A		
Congressional Add: Diesel Fuel Outboard Motor Testing	1.929	0.000
FY 2021 Accomplishments: Complete limited scope assessment and field trails. Complete boat design and installation change assessment and begin developmental and operational testing of diesel fuel outboard technology.		
FY 2022 Plans: N/A		
Congressional Add: Operational deployment of diesel-fueled outboard marine motors	0.000	3.000
FY 2021 Accomplishments: N/A		
FY 2022 Plans: The President's Budget Fiscal Year 2022 enactment added funds to LI 0604230N for the Outboard Diesel Program to procure engines for current craft. To correctly obligate, deploy the Outboard Diesel		

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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 0604230N / <i>Warfare Support System</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022
Program operationally and procure engines for current craft, these funds need to be realigned into BLI 1210 Standard Boats, PE 0204424N, Explosive Ordnance Disposal Forces. This request supports that realignment.		
Congressional Adds Subtotals	6.753	3.000

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

N/A

Remarks

D. Acquisition Strategy

Develop, integrate, test, and field hardware and software upgrades, and advanced techniques in DRAKE systems through the Technology Insertion and Technology Refresh process. Technology insertion candidates include the techniques, hardware and software performance improvements developed by United States Government (USG) laboratories, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and the JCREW prime contractor. Analysis of Alternatives (AoA) will be conducted to evaluate and select Tech Insertion candidates based on technical maturity, cost, and performance. Hardware and software updates will be integrated, tested, and implemented in DRAKE via Engineering Change Proposals (ECPs). This also supports the rapid development and testing of DRAKE CUAS for Fleet Forces Command CUAS requirements and the N96 CUAS Afloat Top Level Requirements.

Diesel Fuel Outboard Motor Testing - Hardware and installation shall be completed through a Basic Ordering Agreement through the applicable Rapid Innovation Fund / Small Business Innovative Research Program. NSWCD-CCD shall conduct design analysis, any required design changes and test & evaluation. NSWCD Philadelphia Detachment shall conduct an outboard endurance lab test. Explosive Ordnance Disposal shall participate in test & evaluation and provide feedback. Commander, Operational Test and Evaluation Force shall also participate in test & evaluation and provide a Letter of Observation. A final report shall be developed by NSWCD-CCD.

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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 0604230N / Warfare Support System	Project (Number/Name) 9999 / Congressional Adds
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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			
Hardware Development	C/CPFF	Northrop Grumman : San Diego, CA	0.000	1.065	Apr 2021	0.000		0.000		-		0.000	0.000	1.065	-
Outboard Diesel Engine Material Solution	C/BOA	PMS300 : Washington, DC	0.000	1.200	Jul 2021	0.000		0.000		-		0.000	0.000	1.200	-
Software Development	C/CPFF	Northrop Grumman : San Diego, CA	0.000	0.760	Apr 2021	0.000		0.000		-		0.000	0.000	0.760	-
Design Feasibility	WR	NSWC : Carderock, MD	0.000	0.150	Jun 2021	0.000		0.000		-		0.000	0.000	0.150	-
Systems Engineering	C/CPFF	Northrop Grumman : San Diego, CA	0.000	0.675	Apr 2021	0.000		0.000		-		0.000	0.000	0.675	-
Test & Evaluation	WR	NSWC : Carderock, MD	0.000	0.600	Aug 2021	0.000		0.000		-		0.000	0.000	0.600	-
Final Report	WR	NSWC : Carderock, MD	0.000	0.050	Aug 2021	0.000		0.000		-		0.000	0.000	0.050	-
Operational deployment of diesel-fueled outboard marine motors	C/BOA	PMS300 : Washington, DC	0.000	0.000		3.000	Jul 2022	0.000		-		0.000	0.000	3.000	-
Subtotal			0.000	4.500		3.000		0.000		-		0.000	0.000	7.500	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	WR	NSWC Crane, Crane, IN : Not Specified	0.000	0.279	Jun 2021	0.000		0.000		-		0.000	0.000	0.279	-
Advanced Techniques Development	WR	NSWC: Various : Not Specified	0.000	0.164	Apr 2021	0.000		0.000		-		0.000	0.000	0.164	-
Ship Integration	WR	NSWC CR, Crane, IN : Not Specified	0.000	0.818	Apr 2021	0.000		0.000		-		0.000	0.000	0.818	-
Test and Evaluation	WR	NSWC CR, Crane, IN : Not Specified	0.000	0.792	Apr 2021	0.000		0.000		-		0.000	0.000	0.792	-

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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 0604230N / <i>Warfare Support System</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Diesel Fuel Outboard Motor Testing</i>				
Technology Assessment/Demonstrations	3	2021	4	2022
Test and Evaluations	4	2021	2	2022
<i>COTS-Based Counter-UAV Technology (DRAKE 2.0)</i>				
Requirements/Systems Engineering	3	2021	2	2022
Hardware Upgrades	3	2021	1	2022
Software Development	3	2021	1	2022
Test and Evaluation	3	2021	1	2022
Advanced Techniques Development	3	2021	4	2021

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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 0604230N / Warfare Support System				Project (Number/Name) 9C86 / Combatant Craft Replacement			
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
9C86: <i>Combatant Craft Replacement</i>	11.559	1.115	0.927	0.896	-	0.896	0.921	0.934	0.954	0.974	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Navy Expeditionary Combat patrol boats, Fleet Expeditionary Security combatant craft, Underwater Construction Team (UCT) and Explosive Ordnance Disposal (EOD) replacement will provide second generation Multi Mission Craft that will replace in-service Force Protection Large, Force Protection Small, Underwater Construction and EOD craft. Boat and craft replacements will: conduct Maritime Security Operations across the full spectrum of naval, joint, and combined operations enabling access and freedom of action throughout the sea-to-shore and inland operating environments as well as conduct maritime Mine Countermeasures (MCM), counter Improvised Explosive Devices (IEDs), Weapons of Mass Destruction (WMD), and all other types of weaponry, for protection of naval and joint assets required for sea control and power projection. Specific mission and capabilities will be identified in an Initial Capabilities Document (ICD), Analysis of Alternatives (AoA), Capabilities Production Document (CPD) and required milestone documentation. RDT&E funding will fund procurement and material solution studies, advanced technology development and studies, design development and test and evaluation and transition Small Business Innovative Research Programs, Rapid Innovation Fund Programs and other technology programs.

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

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Combatant Craft Replacement	1.115	0.927	0.896	0.000	0.896
Articles:	-	-	-	-	-
Description: The boats and craft in the Navy Expeditionary Combat Command (NECC) fleet are reaching the end of their service lives and will create a capability gap if not replaced. Funding supports design/development and testing of NECC's next generation Expeditionary Combat Patrol Boat or 40 Patrol Boat (40PB) and other NECC craft.					
FY 2022 Plans: Continue material solution development and advanced technology development as well as continuing planning, research, analysis, design and development to recapitalize NECC craft to deploy effective combat power. Continue science and technology development to optimize material solutions to fill critical NECC capability gaps and transition Small Business Innovative Research Programs, Rapid Innovation Fund Programs and other technology programs. Begin and continue to develop tactical C4I capabilities and cybersecurity technology integration for combatant craft in a communications contested environment.					
FY 2023 Base 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 0604230N / Warfare Support System	Project (Number/Name) 9C86 / Combatant Craft Replacement

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Continue material solution development and advanced technology development as well as continuing planning, research, analysis, design and development to recapitalize NECC craft to deploy effective combat power. Continue science and technology development to optimize material solutions to fill critical NECC capability gaps as well as transition Small Business Innovative Research Programs, Rapid Innovation Fund Programs and other technology programs. Continue to develop tactical C4I capabilities and cybersecurity technology integration for combatant craft in a communications contested environment.					
<i>FY 2023 OCO Plans:</i> N/A					
<i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> The funding decrease in FY23 is due to the completion of the pre-systems and part of system acquisition, including engineering and manufacturing development for 40' Patrol Boat (40PB).					
Accomplishments/Planned Programs Subtotals	1.115	0.927	0.896	0.000	0.896

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/1210: <i>Standard Boats (NECC)</i>	27.686	13.497	9.695	-	9.695	25.052	33.422	34.241	34.848	Continuing	Continuing

Remarks
Other Program Funding reflects OPN/1210 funds directly associated with Project 9C86, not the total value of the OPN Line Item.

D. Acquisition Strategy
Acquisition of RDT&E developed craft material solution and technology to be accomplished using "tailored" commercial procurements in accordance with the Craft Replacement Acquisition Strategy.

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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 0604230N / <i>Warfare Support System</i>	Project (Number/Name) 9C86 / <i>Combatant Craft Replacement</i>
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FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 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

Proj 9C86	
Combatant & Fleet Expeditionary Craft Design Studies	
Combatant & Fleet Expeditionary Craft Awards	
Combatant & Fleet Expeditionary Craft Deliveries	
Craft Test and Evaluation	
Selection of Craft/Systems for Production	
Selection of Lethal and Non-Lethal Sensors/ Effectors	
Integration of Lethal and Non-Lethal Sensors/ Effectors	

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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 0604230N / <i>Warfare Support System</i>	Project (Number/Name) 9C86 / <i>Combatant Craft Replacement</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 9C86</i>				
Combatant & Fleet Expeditionary Craft Design Studies	1	2021	4	2023
Combatant & Fleet Expeditionary Craft Awards	1	2021	4	2023
Combatant & Fleet Expeditionary Craft Deliveries	1	2021	4	2023
Craft Test and Evaluation	1	2021	4	2023
Selection of Craft/Systems for Production	1	2021	4	2023
Selection of Lethal and Non-Lethal Sensors/Effectors	1	2021	4	2023
Integration of Lethal and Non-Lethal Sensors/Effectors	1	2021	4	2023