Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy												Date: May 2021
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604230N *I Warfare Support System*							
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	104.910	8.365	14.942	10.167	-	10.167	-	-	-	-	-	-
3326: *NSW Rapid Capabilities Development for CIEC*	44.998	6.583	5.952	7.060	-	7.060	-	-	-	-	-	-
3445: *Visual Augmentation System Development*	0.000	0.000	0.000	1.147	-	1.147	-	-	-	-	-	-
3446: *Expeditionary sUAS Development*	0.000	0.000	0.000	0.249	-	0.249	-	-	-	-	-	-
4011: *Naval Coastal Warfare Surv and C4I Sys*	49.394	0.741	0.789	0.784	-	0.784	-	-	-	-	-	-
9999: *Congressional Adds*	0.000	0.000	7.000	0.000	-	0.000	-	-	-	-	-	-
9C86: *Combatant Craft Replacement*	10.518	1.041	1.201	0.927	-	0.927	-	-	-	-	-	-

Note

The FY 2022 funding request was increased by $1.167M to account for the realignment of project 3445 Visual Augmentation System Development.

FY 2022, Project 3446 Expeditionary sUAS added to PE0604230N in the amount of $.250M for Test and Evaluation (Operational Assessment).

A. Mission Description and Budget Item Justification

The Rapid Capabilities Development (RCD) project supports the Naval Special Warfare Branch to identify and assess available technologies that confront current and future irregular and expeditionary challenges. The program's development efforts are focused on the enhancement/advancement of existing technologies to fill urgent and emergent capability gaps for Naval Special Warfare (NSW). Program funding provides for the development, integration, testing, validation and combat demonstration of identified technologies and/or packages of technologies to meet: Overseas Contingency Operations (OCO) goals, service common and NSW program technology challenges, and technology obsolescence issues of developed capabilities. The goal of the RCD project is to develop expeditionary/operational capabilities for NSW that enable its force to conduct cross-domain special reconnaissance, counterterrorism, direct action, irregular warfare, and foreign internal defense; and fulfill urgent/emergent needs within a 6-24 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

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy	Date: May 2021
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604230N *I Warfare Support System*

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, 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.

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.

Combatant Craft Replacement will provide second generation Riverine Multi Mission Craft that will replace in-service Riverine Patrol Boats (RPBs) and Riverine Assault Boats (RABs). Combatant Craft replacements will: conduct inland waterway patrol and interdiction to preserve the rivers for friendly use as lines of communications; deny the use of rivers and waterways to waterborne and immediate shore sited hostile forces by barrier and interdiction operations; and, with augmentation of ground and air forces, locate and destroy hostile forces within a riparian area. Specific mission and capabilities will be identified in an Initial Capabilities Document (ICD). RDT&E funding will fund feasibility studies and procurement of mock-ups and prototype craft to demonstrate capabilities prior to production craft procurement.

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.

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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy	Date: May 2021
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604230N / *Warfare Support System*

B. Program Change Summary ($ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	8.601	9.065	9.320	-	9.320
Current President's Budget	8.365	14.942	10.167	-	10.167
Total Adjustments	-0.236	5.877	0.847	-	0.847
• Congressional General Reductions	-	-0.040			
• Congressional Directed Reductions	-	-1.083			
• Congressional Rescissions	-	-			
• Congressional Adds	-	7.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.236	0.000			
• Program Adjustments	0.000	0.000	1.167	-	1.167
• Rate/Misc Adjustments	0.000	0.000	-0.320	-	-0.320

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2020	FY 2021
Project: 9999: *Congressional Adds*		
Congressional Add: *COTS-Based Counter-UAV Technology*	0.000	5.000
Congressional Add: *Diesel Fuel Outboard Motor Testing*	0.000	2.000
Congressional Add Subtotals for Project: 9999	0.000	7.000
Congressional Add Totals for all Projects	0.000	7.000

Change Summary Explanation

FY 2020: -$0.236M Small Business Innovation Research (SBIR)

FY 2021: Congressional increases: +$2.0M Diesel Fuel Outboard Motor Testing, +$5.0M COTS-Based Counter-UAV Technology

FY 2022: +$1.167M project VAS, -$0.320M misc. rate adjustments

Starting in FY 2022, Project 3445 Visual Augmentation Systems (VAS) will be transferred from PE 0604755N Project 3172 / Joint Non-Lethal Weapons.
Starting in FY 2022, Project 3446 Expeditionary sUAS added to PE0604230N.

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy			Date: May 2021
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 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
3326: *NSW Rapid Capabilities Development for CIEC*	44.998	6.583	5.952	7.060	-	7.060	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

The FY 2022 funding request was reduced by $0.247 million to account for the availability of prior year execution balances.

A. Mission Description and Budget Item Justification

The Rapid Capabilities Development (RCD) program supports the Naval Special Warfare (NSW) Branch to identify and assess available technologies that confront current and future irregular and expeditionary 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 and combat demonstration and evaluation of identified technologies to meet overseas contingency operations goals; 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 6-24 month timeframe.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Navy Irregular Warfare	6.583	5.952	7.060	0.000	7.060
Articles:	-	-	-	-	-
FY 2021 Plans: FY 2021 funding will utilize; $1.945M for artificial intelligence 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. $4.007M for sensor integration (Electro-Optic/Infrared (EO/IR), Acoustic, Radio Frequency (RF)), payload development, signature management, maritime precision engagement, and technologies that will support improvements to human performance on the battlefield, and continuing advancement of FY19/FY20 prototyping efforts and field evaluation of developed technologies.					
FY 2022 Base Plans: FY 2022 funding will utilize;					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
$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. $3.504M for sensor integration (single & multi-modal), payload development, signature management, maritime precision engagement, and technologies that will support improvements to human performance on the battlefield, and continuing advancement of FY20/FY21 prototyping efforts and field evaluation of developed technologies. $1.306M to support various Broad Area Announcement, Small Business Innovative Research and Technology Transition processes for the identification of technologies that enhance and/or accelerate expeditionary and irregular capabilities in support of NSW capability challenges. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** FY22 increase of $1.108M supports the Rapid Development Capability efforts.					
Accomplishments/Planned Programs Subtotals	6.583	5.952	7.060	0.000	7.060

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 warfighter needs; conduct test and evaluation; and then demonstrate in real time and/or during planned operations within a 6-24 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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
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*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Spt	C/CPFF	Dell : Washington, DC	0.625	0.000		0.000		0.000		-		0.000	-	-	-
Program Management Spt	C/CPAF	Cydecor : Arlington, VA	0.466	0.149	Feb 2020	0.150	Feb 2021	0.000		-		0.000	-	-	-
Travel	WR	NAVSEA/HQ : Washington, DC	0.409	0.050	Dec 2019	0.050	Dec 2020	0.025	Oct 2021	-		0.025	-	-	-
Program Management Spt	WR	NAVSEA/HQ : Washington, DC	0.256	0.000		0.000		0.145	Oct 2021	-		0.145	-	-	-
Program Management Spt	WR	NSWC : Crane, IN	0.300	0.000		0.000		0.000		-		0.000	-	-	-
Program Management Spt	WR	NSWC : Dahlgren, VA	0.050	0.000		0.000		0.000		-		0.000	-	-	-
Program Management Spt	WR	NSWC : Panama City, FL	0.050	0.000		0.000		0.000		-		0.000	-	-	-
Program Management Spt	WR	NSWC : Carderock, MD	0.050	0.000		0.000		0.000		-		0.000	-	-	-
Program Management Spt	WR	NUWC : Newport, RI	0.050	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	2.256	0.199		0.200		0.170		-		0.170	-	-	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	WR	NUWC : Newport, RI	2.848	1.400	Dec 2019	0.500	Mar 2021	1.111	Oct 2021	-		1.111	-	-	-
Test and Evaluation	WR	NAWC : China Lake, CA	0.595	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	WR	NSWC : Carderock, MD	1.209	0.823	Nov 2019	0.000		1.750	Oct 2021	-		1.750	-	-	-
Test and Evaluation	SS/CPFF	ARL/UT : Austin, TX	0.697	0.210	Feb 2020	0.000		0.950	Oct 2021	-		0.950	-	-	-
Test and Evaluation	SS/CPFF	SPAWAR : San Diego, CA	1.195	0.000		0.000		0.000		-		0.000	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
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*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total 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	-	-	-
Test and Evaluation -WR	WR	SPAWAR : San Diego, CA	1.254	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	SS/FFP	ARL/PSU : State College, PA	1.540	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	WR	NRL : Washington, DC	0.300	0.765	Feb 2020	0.775	Oct 2021	0.775	Oct 2021	-		0.775	-	-	-
Test and Evaluation	WR	NSWC : Indian Head, MD	1.862	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	Various	Various : Various	2.274	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	SS/FFP	NSWC : Panama City, FL	0.539	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation-WR	WR	NSWC : Dahlgren, VA	1.502	0.540	Dec 2019	0.539	Mar 2021	0.000		-		0.000	-	-	-
Test and Evaluation	SS/FFP	NSWC : Dahlgren, VA	0.512	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	SS/CPFF	APL/JHU : Laurel, MD	0.190	0.137	May 2020	0.000		0.000		-		0.000	-	-	-
Test and Evaluation	SS/CPFF	Army Research Lab. : Adelphia, MD	0.247	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	SS/CPFF	PNNL : Richland, WA	0.130	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	C/CPFF	Georgia Tech : Atlanta, GA	1.634	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	C/CPFF	Charles River : Cambridge, MA	0.521	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	C/CPFF	L3 Comm : Burlington, MA	0.972	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	C/CPFF	QinetiQ NA : Waltham, MA	0.704	0.000		0.000		0.000		-		0.000	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
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*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	WR	NAVAIR : Patuxent, MD	1.123	0.212	Dec 2019	0.000		0.000		-		0.000	-	-	-
Test and Evaluation	SS/CPFF	Strategos Consulting : Coronado, Ca	0.178	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	WR	NAVAIR : San Diego, CA	0.425	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	SS/CPFF	NSMA : Wash, DC	3.069	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	C/CPFF	Advanced Systems : Manassas, VA	0.150	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	SS/CPFF	NAVSEA : Washington, DC	2.707	0.000		2.116	Dec 2020	0.549	Oct 2021	-		0.549	-	-	-
Test and Evaluation	WR	NSWC : Crane, IN	1.136	0.000		0.200	Jan 2021	0.000		-		0.000	-	-	-
Test and Evaluation	Reqn	ANL : Chicago, IL	0.114	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	WR	NUWC : Keyport, RI	0.348	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	SS/CPFF	General Atomics : San Diego, CA	1.923	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	SS/CPFF	ASSETT : Manassas, VA	0.930	0.102	Dec 2019	0.000		0.000		-		0.000	-	-	-
Test and Evaluation	SS/CPFF	Battelle : Columbus, OH	1.869	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	SS/CPFF	WHOI : Woods Hole, MA	0.225	0.000		0.000		0.650	Jan 2022	-		0.650	-	-	-
Test and Evaluation	SS/CPFF	Boeing : Seattle, WA	0.300	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	SS/CPFF	AeroVironment : Monrovia, CA	0.525	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	SS/CPFF	Northrup Grumman : Falls Church, VA	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	-	-	-
Test and Evaluation-WR	WR	NSWC : Panama City, FL	1.067	0.243	Oct 2019	0.744	Jan 2021	0.250	Oct 2021	-		0.250	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
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*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test adn Evaluation	WR	NSWC : Corona, CA	0.123	0.010	Apr 2020	0.050	Feb 2021	0.000		-		0.000	-	-	-
Test and Evaluation	MIPR	Army : Ft Belvoir Va	1.170	0.000		0.500	Feb 2021	0.000		-		0.000	-	-	-
Test and Evaluation	Reqn	NPS : Dayton OH	0.800	0.600	Oct 2019	0.000		0.600	Oct 2021	-		0.600	-	-	-
Test and Evaluation	MIPR	DTIC : fT Belvoir Va	0.220	0.800	Mar 2020	0.328	Feb 2021	0.255	Jan 2022	-		0.255	-	-	-
Test and Evaluation	MIPR	DLA : Ft Belvoir Va	2.273	0.000		0.000		0.000		-		0.000	-	-	-
Test and Evaluation	MIPR	WPAB : Wright Patterson, OH	0.000	0.542	May 2020	0.000		0.000		-		0.000	-	-	-
		Subtotal	42.742	6.384		5.752		6.890		-		6.890	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	44.998	6.583		5.952		7.060		-		7.060	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
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*

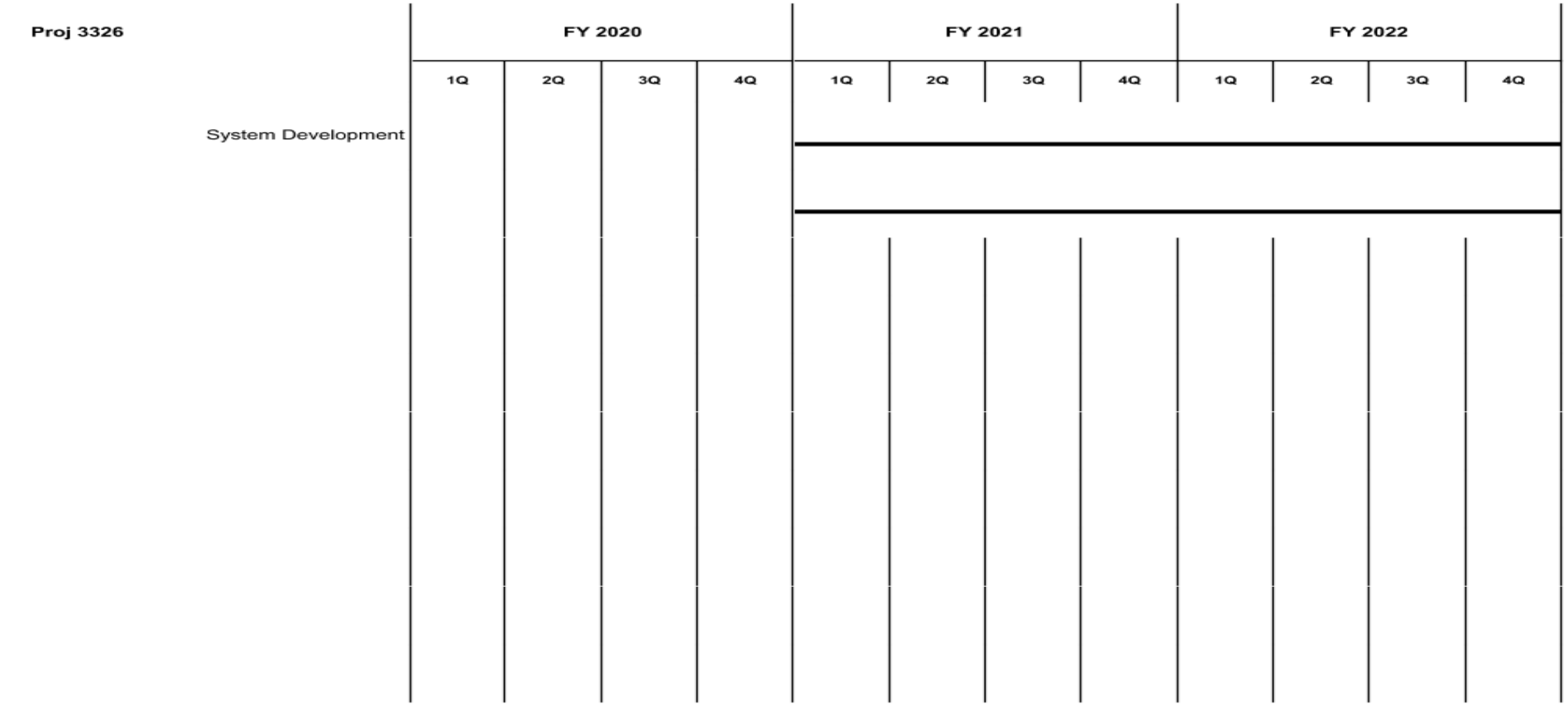

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604230N / *Warfare Support System*	**Project (Number/Name)** 3326 / *NSW Rapid Capabilities Development for CIEC*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3326				
System Development: Technology Assessments/Demonstrations	1	2021	4	2022
System Development: Test and Evaluations	1	2021	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy			Date: May 2021
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 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
3445: *Visual Augmentation System Development*	0.000	0.000	0.000	1.147	-	1.147	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Starting in FY 2022, VAS transitions into this PE. Prior funding in PE 0604755N Project 3172 / Joint Non-Lethal Weapons.

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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Visual Augmentation Systems	0.000	0.000	1.147	0.000	1.147
Articles:	-	-	-	-	-
FY 2021 Plans: N/A					
FY 2022 Base 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 2022 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Starting in FY 2022, VAS RDT&E will be transferred from PE 0604755N Project 3172/Joint Non-Lethal Weapons.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	1.147	0.000	1.147

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• OPN/8128: *NCW Forces Active*	165.360	139.693	110.647	-	110.647	-	-	-	-	-	-

Remarks

D. Acquisition Strategy

DoN VAS will assess 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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604230N / *Warfare Support System*	**Project (Number/Name)** 3445 / *Visual Augmentation System Development*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.920	Jan 2022	-		0.920	-	-	-
		Subtotal	0.000	0.000		0.000		0.920		-		0.920	-	-	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.227	Nov 2021	-		0.227	-	-	-
		Subtotal	0.000	0.000		0.000		0.227		-		0.227	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		1.147		-		1.147	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604230N / *Warfare Support System*	**Project (Number/Name)** 3445 / *Visual Augmentation System Development*

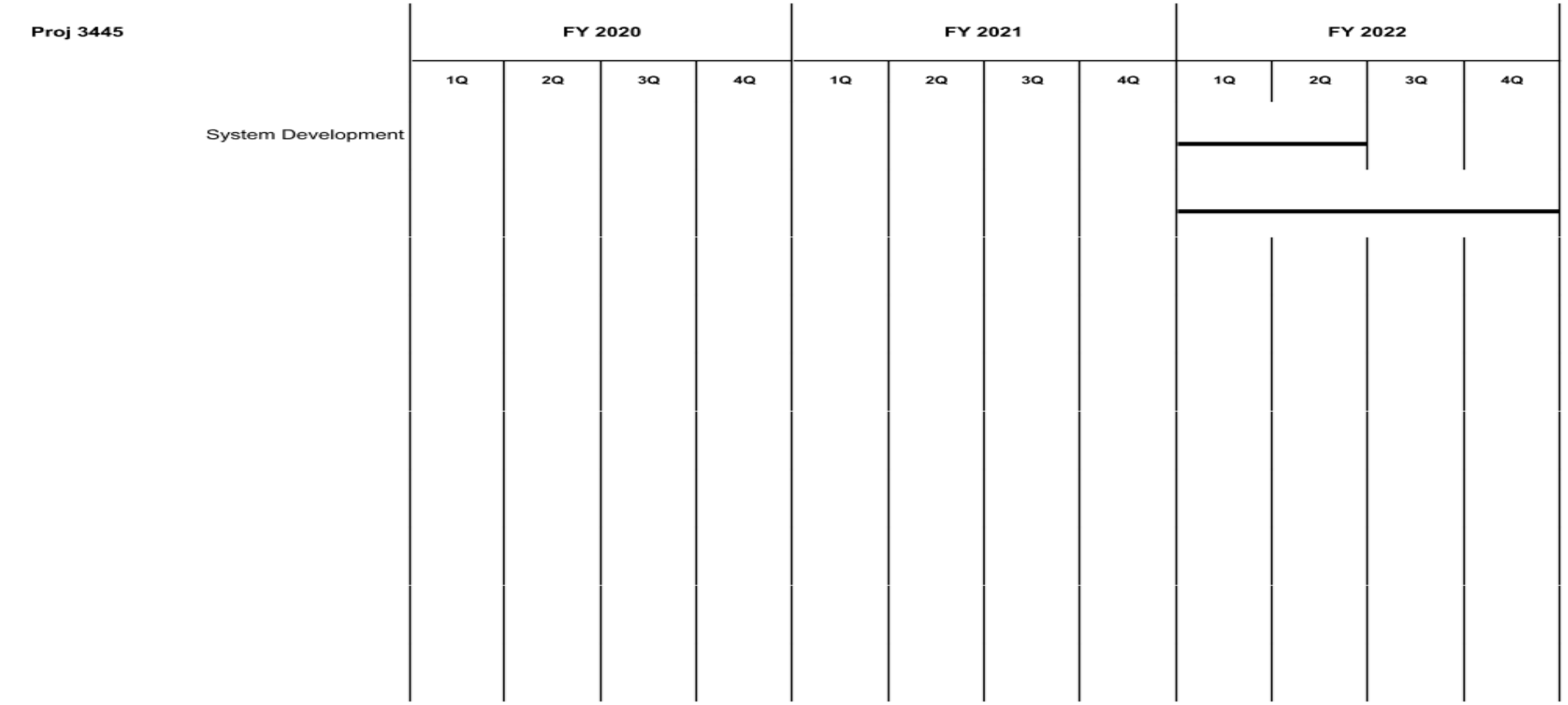

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604230N / *Warfare Support System*	**Project (Number/Name)** 3445 / *Visual Augmentation System Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3445				
System Development: Technology & Obsolescence Replacement Road Map	1	2022	2	2022
System Development: Capability Gap Test & Evaluation	1	2022	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy			Date: May 2021
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 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
3446: *Expeditionary sUAS Development*	0.000	0.000	0.000	0.249	-	0.249	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Family of Small Unmanned Aircraft Systems (FoSUAS) procures small unmanned aircraft systems (SUAS) to provide NSW and other Navy units with scalable airborne Reconnaissance, Surveillance and Target Acquisition (RSTA) capabilities to aid in detecting, identifying, engaging, and/or avoiding enemy units/other enemy activities and to provide force protection. Currently procured RQ-20 Puma (the existing Medium Range/Medium Endurance (MR/ME) solution set) under the Rucksack Portable Unmanned Aerial System (RPUAS) Operational Requirements Document (ORD) and various Nano/Vertical Takeoff & Landing (VTOL) SUAS will meet validated operational requirements in accordance with the ORD, the NSW addendum to the approved Expeditionary Organic Tactical Airborne Intelligence, Surveillance, and Reconnaissance (ISR) Capability Set (EOTACS) Capabilities Development Document (CDD), and the pending Navy SUAS Top Level Requirements (TLR) document . The FoSUAS represent the current and future solutions for capability needs as the Navy finalizes the transition of existing requirements to address the RSTA capability set via a new Capability Development Document (CDD), the intended successor to the aforementioned requirements documents.

The new CDD shall incorporate unique mission kits, mission payloads, air vehicle enhancements, and modifications of UAS and related Ground Control Stations (GCS) for the family of Group 1 tactical SUAS systems including Group 1 Short Range/Short Endurance (SR/SE), Group 1 MR/ME, and Group 2 Long Range/Long Endurance (LR/LE). Group 1 SUAS are systems less than 20 pounds in weight and Group 2 are systems between 21 pounds and 55 pounds in weight. In addition to supporting the requirements in the ORD, EOTACS CDD, pending TLR document, and the future FoSUAS CDD, RDTE funding for the FoSUAS program will be utilized to conduct activities including, but not be limited to, Field User Evaluations (FUEs) to support Urgent Universal Needs Statements (UUNS) 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.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Test and Evaluation (Operational Assessment)	0.000	0.000	0.249	0.000	0.249
Articles:	-	-	-	-	-
FY 2021 Plans: N/A					
FY 2022 Base Plans: - Operational assessment of SUAS Common Control Architecture (SCCA) for FoSUAS platforms. - Assessment of low cost, commercially available Unmanned Aircraft Systems to inform future procurements and determine potential adversary capabilities.					
FY 2022 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604230N / *Warfare Support System*	**Project (Number/Name)** 3446 / *Expeditionary sUAS Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** FY22 increase .249M for Expeditionary sUAS Development.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.249	0.000	0.249

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. A comprehensive review of the next generation service FoSUAS needs and requirements is being coordinated by OPNAV, Navy Special Warfare Command, and other Navy activities to update and/or supersede current requirements documents.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604230N / *Warfare Support System*	Project (Number/Name) 3446 / *Expeditionary sUAS Development*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SCCA Integration	WR	NAWCAD : PAX RIVER, MD	0.000	0.000		0.000		0.050	Dec 2021	-		0.050	-	-	-
		Subtotal	0.000	0.000		0.000		0.050		-		0.050	-	-	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
COTS UAS Analysis/Cyber Security/IA	WR	NAWCAD : PAX RIVER, MD	0.000	0.000		0.000		0.080	Mar 2022	-		0.080	-	-	-
Engineering Analysis	WR	NAWCAD : PAX RIVER, MD	0.000	0.000		0.000		0.020	Mar 2022	-		0.020	-	-	-
		Subtotal	0.000	0.000		0.000		0.100		-		0.100	-	-	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Assessment of SCCA and Analysis of SUAS	WR	VARIOUS : VARIOUS	0.000	0.000		0.000		0.099	Jan 2022	-		0.099	-	-	-
		Subtotal	0.000	0.000		0.000		0.099		-		0.099	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		0.249		-		0.249	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604230N / *Warfare Support System*	**Project (Number/Name)** 3446 / *Expeditionary sUAS Development*

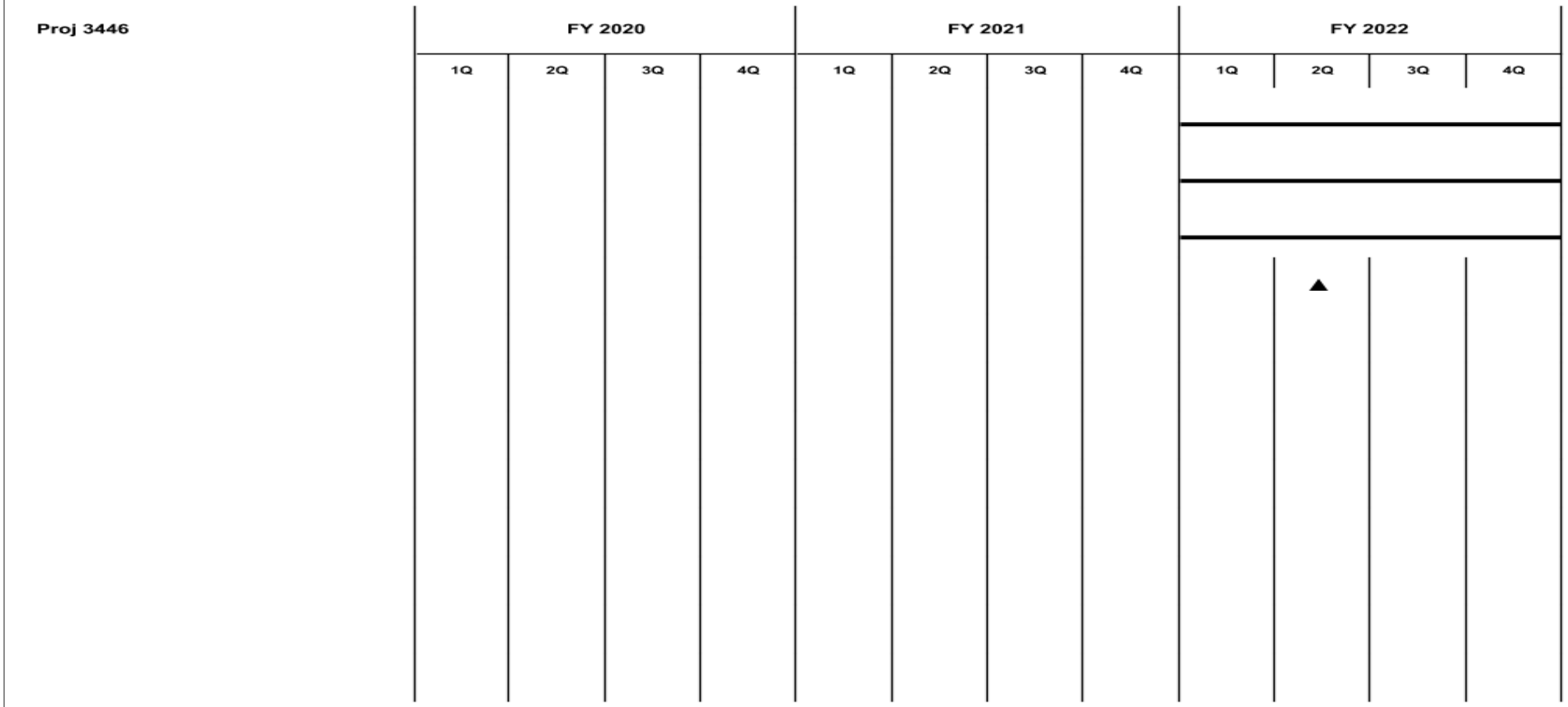

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604230N / *Warfare Support System*	**Project (Number/Name)** 3446 / *Expeditionary sUAS Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3446				
SUAS Common Control Architecture (SCCA) Development and Integration Verification	1	2022	4	2022
SUAS Common Control Architecture (SCCA) AV Commercial Operational Assessment	1	2022	4	2022
Future Capability Assessments (COTS/Cyber Security)/IA: COTS/Cyber Assessment	1	2022	4	2022
Production Milestones: MIPR Orders: FY22 SR/SE	2	2022	2	2022

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy			Date: May 2021
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 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
4011: *Naval Coastal Warfare Surv and C4I Sys*	49.394	0.741	0.789	0.784	-	0.784	-	-	-	-	-	-
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Identity Dominance System	0.741	0.789	0.784	0.000	0.784
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 2021 Plans: IDS will finish Software (S/W) for technology refresh. IDS will conduct Military Utility Assessments with the new device and will make necessary changes to S/W code or Hardware (H/W). Windows 7 baseline will continue to be updated via Engineering Change Proposals for enhancements and Information Assurance until the Windows 7 baseline system is completely replaced by the tech refresh system. IDS will increase and support the Counter-IED and Force Protection efforts to those individuals deployed. The continued efforts of building a database					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
of suspected enemies to the United States will allow potential threats to be identified at foreign access control points and in international waters. ***FY 2022 Base 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 Counter-IED 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 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** No significant change from FY2021 to FY2022.					
Accomplishments/Planned Programs Subtotals	0.741	0.789	0.784	0.000	0.784

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• OPN/8128: *Biometrics*	165.360	139.693	110.647	-	110.647	-	-	-	-	-	-

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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
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*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total 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	-	-	-
Hardware/Software Development	WR	NSWC DAHLGREN : DAHLGREN	4.016	0.000		0.000		0.000		-		0.000	-	-	-
Hardware/Software Development	WR	NSWC CRANE : CRANE	1.450	0.000		0.000		0.000		-		0.000	-	-	-
Systems Engineering - IDS	WR	NSWC : DAHLGREN	7.399	0.250	Jan 2020	0.321	Jan 2021	0.318	Nov 2021	-		0.318	-	-	-
Hardware/Software Development - IDS	WR	NSWC : DAHLGREN	0.477	0.241	Mar 2020	0.278	Jan 2021	0.279	Nov 2021	-		0.279	-	-	-
Product Development Prior Years	Various	Various : Various	10.174	0.000		0.000		0.000		-		0.000	-	-	-
Need Item Text	C/BA	Not Specified : Not Specified	0.000	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	28.596	0.491		0.599		0.597		-		0.597	-	-	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total 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	-	-	-
Technical Data	WR	NSWC : DAHLGREN	0.187	0.000		0.000		0.000		-		0.000	-	-	-
Support Prior Years	Various	Various : Various	5.206	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	5.653	0.000		0.000		0.000		-		0.000	-	-	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation - IDS	WR	NSWC : DAHLGREN	0.573	0.250	Mar 2020	0.190	Jan 2021	0.187	Nov 2021	-		0.187	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
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*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation - Expeditionary	WR	NSWC : PANAMA CITY, FL	2.772	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	3.345	0.250		0.190		0.187		-		0.187	-	-	N/A

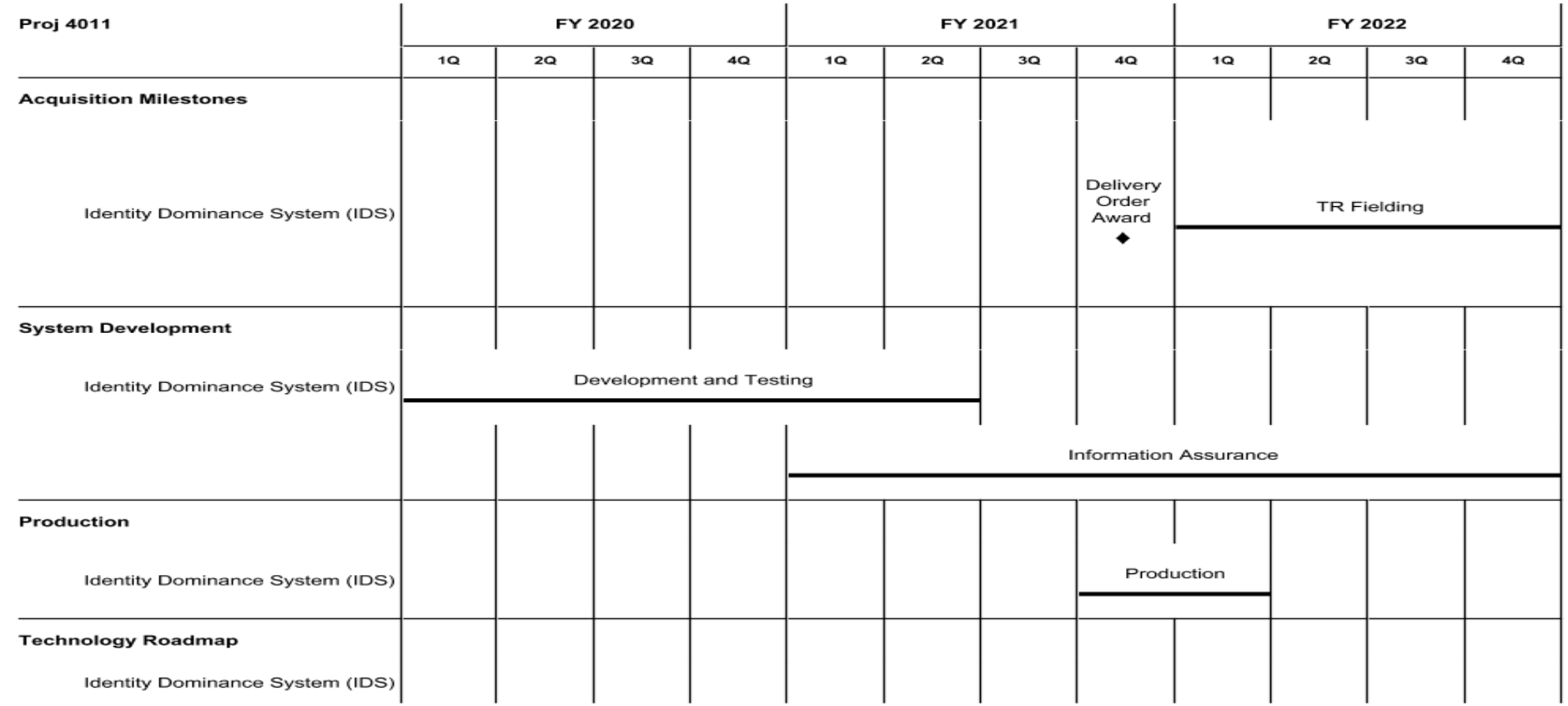
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Services Prior Years	Various	Various : Various	0.275	0.000		0.000		0.000		-		0.000	-	-	-
Program Management Support	Various	Various : Various	5.388	0.000		0.000		0.000		-		0.000	-	-	-
Program Management Support - IDS	WR	NSWC : DAHLGREN	5.075	0.000		0.000		0.000		-		0.000	-	-	-
Program Management Support - IDS	WR	NSWC : CRANE	1.062	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	11.800	0.000		0.000		0.000		-		0.000	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	49.394	0.741		0.789		0.784		-		0.784	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
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*



2022PB - 0604230N - 4011

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
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

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 4011				
Acquisition Milestones: Identity Dominance System (IDS): IDS Tech Refresh Delivery Order Award	4	2021	4	2021
Acquisition Milestones: Identity Dominance System (IDS): IDS Tech Refresh Fielding	1	2022	4	2022
System Development: Identity Dominance System (IDS): IDS Tech Refresh Development and Testing	1	2020	2	2021
System Development: Identity Dominance System (IDS): IDS Tech Refresh Information Assurance ECP Development and Validation	1	2021	4	2022
Production: Identity Dominance System (IDS): IDS Tech Refresh Production	4	2021	1	2022

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy											Date: May 2021	
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 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**
9999: *Congressional Adds*	0.000	0.000	7.000	0.000	-	0.000	-	-	-	-	-	-
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 2020	FY 2021
Congressional Add: COTS-Based Counter-UAV Technology ***FY 2020 Accomplishments:*** N/A ***FY 2021 Plans:*** 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.	0.000	5.000
Congressional Add: Diesel Fuel Outboard Motor Testing ***FY 2020 Accomplishments:*** N/A ***FY 2021 Plans:*** 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.	0.000	2.000
Congressional Adds Subtotals	0.000	7.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604230N / *Warfare Support System*	**Project (Number/Name)** 9999 / *Congressional Adds*

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 NSWC-CCD.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604230N / *Warfare Support System*	Project (Number/Name) 9999 / *Congressional Adds*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	C/CPFF	Northrop Grumman : San Diego, CA	0.000	0.000		1.065	Apr 2021	0.000		-		0.000	-	-	-
Outboard Diesel Engine Material Solution	C/BOA	PMS325 : Washington, DC	0.000	0.000		1.200	Jul 2021	0.000		-		0.000	-	-	-
Software Development	C/CPFF	Northrop Grumman : San Diego, CA	0.000	0.000		0.760	Apr 2021	0.000		-		0.000	-	-	-
Design Feasibility	WR	NSWC : Carderock, MD	0.000	0.000		0.150	Jun 2021	0.000		-		0.000	-	-	-
Systems Engineering	C/CPFF	Northrop Grumman : San Diego, CA	0.000	0.000		0.675	Apr 2021	0.000		-		0.000	-	-	-
Test & Evaluation	WR	NSWC : Carderock, MD	0.000	0.000		0.600	Aug 2021	0.000		-		0.000	-	-	-
Final Report	WR	NSWC : Carderock, MD	0.000	0.000		0.050	Aug 2021	0.000		-		0.000	-	-	-
		Subtotal	0.000	0.000		4.500		0.000		-		0.000	-	-	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NSWC Crane, Crane, IN : Not Specified	0.000	0.000		0.279	Jun 2021	0.000		-		0.000	-	-	-
Advanced Techniques Development	WR	NSWC: Various : Not Specified	0.000	0.000		0.411	Apr 2021	0.000		-		0.000	-	-	-
Ship Integration	WR	NSWC CR, Crane, IN : Not Specified	0.000	0.000		0.818	Apr 2021	0.000		-		0.000	-	-	-
Test and Evaluation	WR	NSWC CR, Crane, IN : Not Specified	0.000	0.000		0.792	Apr 2021	0.000		-		0.000	-	-	-
Program Management	WR	NSWC C, Crane, IN : Not Specified	0.000	0.000		0.200	Apr 2021	0.000		-		0.000	-	-	-
		Subtotal	0.000	0.000		2.500		0.000		-		0.000	-	-	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604230N / *Warfare Support System*	Project (Number/Name) 9999 / *Congressional Adds*	

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		7.000		0.000		-		0.000	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604230N / *Warfare Support System*	**Project (Number/Name)** 9999 / *Congressional Adds*

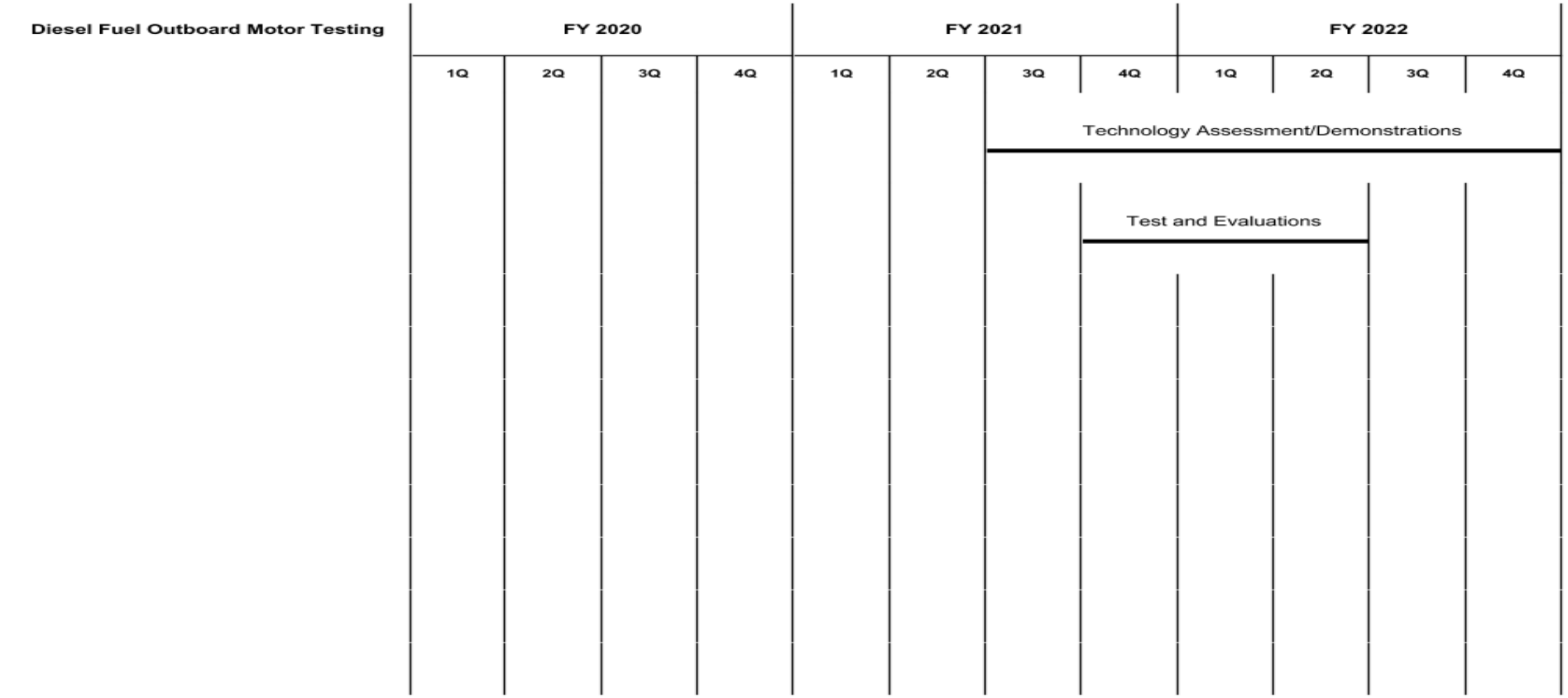


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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604230N / *Warfare Support System*	**Project (Number/Name)** 9999 / *Congressional Adds*

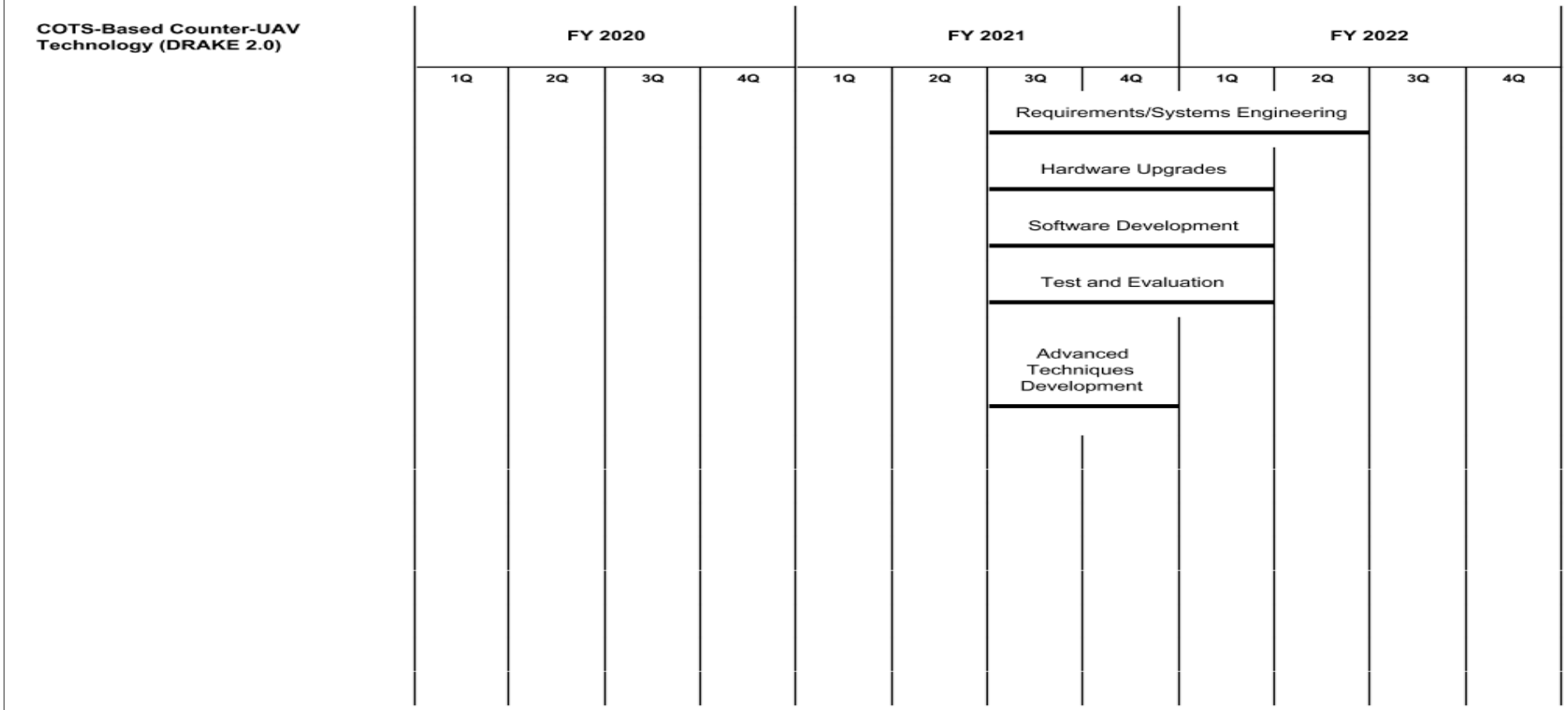

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604230N / *Warfare Support System*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Diesel Fuel Outboard Motor Testing				
Technology Assessment/Demonstrations	3	2021	4	2022
Test and Evaluations	4	2021	2	2022
COTS-Based Counter-UAV Technology (DRAKE 2.0)				
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

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy										Date: May 2021		
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 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**
9C86: *Combatant Craft Replacement*	10.518	1.041	1.201	0.927	-	0.927	-	-	-	-	-	-
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.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Combatant Craft Replacement	1.041	1.201	0.927	0.000	0.927
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 2021 Plans: Continuing material solution development and advanced technology development as well as continuing planning, research, analysis, design and development to recapitalize other NECC craft. Continue science and technology development work to optimize material solutions to fill critical NECC capability gaps. Begin development of lethal and non-lethal sensors/effectors.					
FY 2022 Base 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.					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Begin and continue to develop tactical C4I capabilities and cybersecurity technology integration for combatant craft in a communications contested environment. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** The funding decrease in FY22 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	1.041	1.201	0.927	0.000	0.927

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• OPN/1210: *Standard Boats (NECC)*	67.102	65.555	58.770	-	58.770	-	-	-	-	-	-

Remarks

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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604230N / *Warfare Support System*	Project (Number/Name) 9C86 / *Combatant Craft Replacement*	

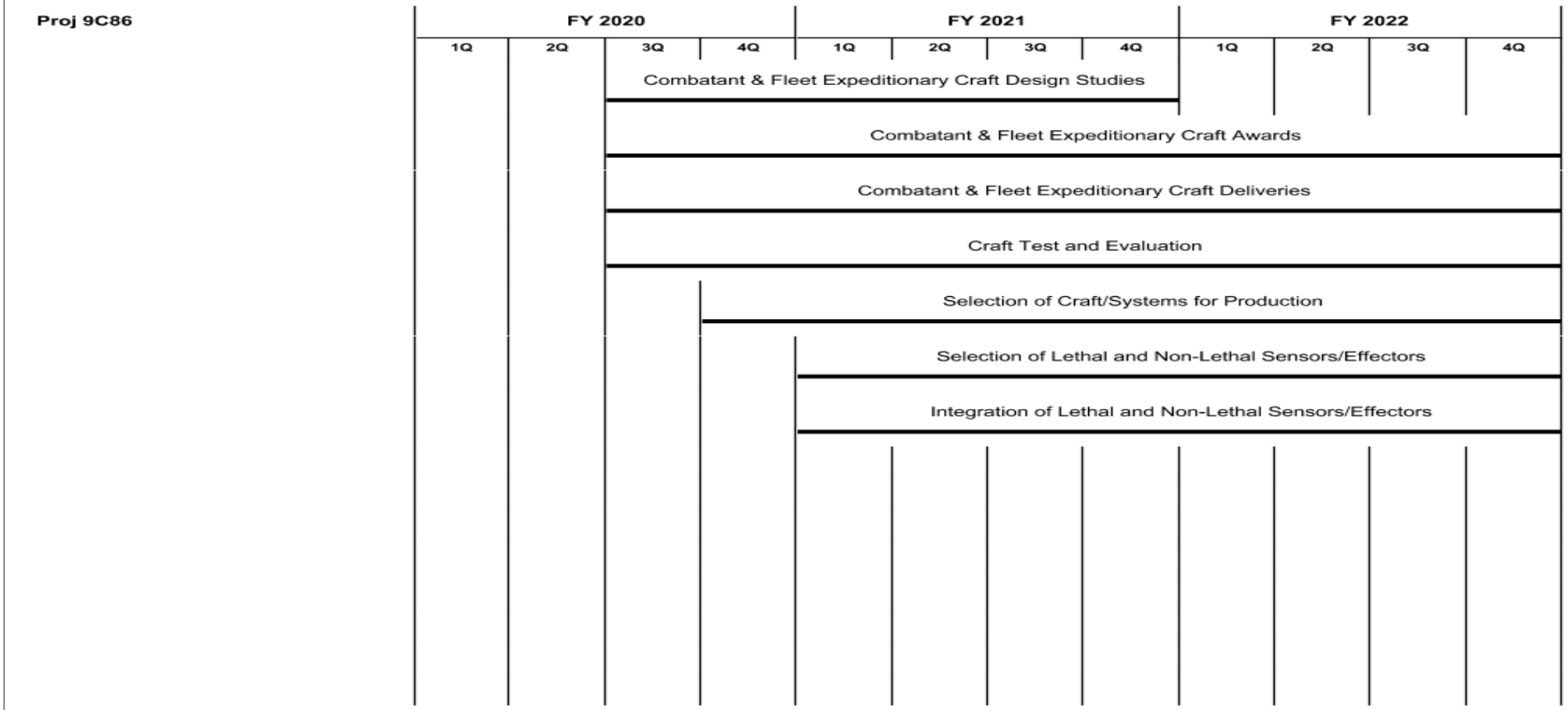
Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Craft Feasibility Study	WR	NSWC : Carderock, MD	2.435	0.198	Mar 2020	0.228	Mar 2021	0.176	Mar 2022	-		0.176	-	-	-
Craft Material Solution & Design Development	WR	NSWC : Carderock, MD	5.630	0.645	Mar 2020	0.745	Mar 2021	0.575	Mar 2022	-		0.575	-	-	-
Craft Study Report	WR	NSWC : Carderock, MD	2.453	0.198	Mar 2020	0.228	Mar 2021	0.176	Mar 2022	-		0.176	-	-	-
Craft Test and Evaluation	WR	NSWC : Carderock, MD	0.000	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	10.518	1.041		1.201		0.927		-		0.927	-	-	N/A

	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	10.518	1.041		1.201		0.927		-		0.927	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604230N / *Warfare Support System*	**Project (Number/Name)** 9C86 / *Combatant Craft Replacement*



2022PB - 0604230N - 9C86

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604230N / *Warfare Support System*	**Project (Number/Name)** 9C86 / *Combatant Craft Replacement*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9C86				
Combatant & Fleet Expeditionary Craft Design Studies	3	2020	4	2021
Combatant & Fleet Expeditionary Craft Awards	3	2020	4	2022
Combatant & Fleet Expeditionary Craft Deliveries	3	2020	4	2022
Craft Test and Evaluation	3	2020	4	2022
Selection of Craft/Systems for Production	4	2020	4	2022
Selection of Lethal and Non-Lethal Sensors/Effectors	1	2021	4	2022
Integration of Lethal and Non-Lethal Sensors/Effectors	1	2021	4	2022