Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy											Date: February 2020	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603713N *I Ocean Engineering Tech Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	70.516	5.697	5.619	6.346	-	6.346	6.874	6.322	6.295	6.421	Continuing	Continuing
0099: *Deep Submergence Bio Med Dev*	39.511	4.311	4.360	4.441	-	4.441	4.531	4.625	4.719	4.814	Continuing	Continuing
0394: *Shallow Depth Diving EQ*	31.005	1.386	1.259	1.905	-	1.905	2.343	1.697	1.576	1.607	Continuing	Continuing

A. Mission Description and Budget Item Justification

The FY 2021 funding request was reduced by $0.381 million to account for the availability of prior year execution balances.

Developments in this program will enable the U.S. Navy to overcome deficiencies that constrain manned diving operations in several critical areas such as submarine rescue, recovery, salvage, underwater ship husbandry, underwater construction and naval special operations. This program develops biomedical technology, diver life support equipment, and the systems, tools, and procedures to permit manned underwater operations and enhance diver performance and safety.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	5.915	5.619	5.731	-	5.731
Current President's Budget	5.697	5.619	6.346	-	6.346
Total Adjustments	-0.218	0.000	0.615	-	0.615
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.218	0.000			
• Program Adjustments	0.000	0.000	0.619	-	0.619
• Rate/Misc Adjustments	0.000	0.000	-0.004	-	-0.004

Change Summary Explanation

FY2021:

The FY 2021 funding request was reduced by $0.381 million to account for the availability of prior year execution balances. $1.000 million in program increases are: $0.200 million to fund Navy Diving COTS Equipment and $0.800 million in order to design and develop an improved pressurized shallow water capable submarine transfer skirt.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603713N / *Ocean Engineering Tech Dev*	Project (Number/Name) 0099 / *Deep Submergence Bio Med Dev*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
0099: *Deep Submergence Bio Med Dev*	39.511	4.311	4.360	4.441	-	4.441	4.531	4.625	4.719	4.814	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project:
1) Develops advanced biomedical and bioengineering technology for medical and life support enhancement to decrease submariner deaths and permanent injury in a disabled submarine (DISSUB) and during submarine escape and rescue;
2) Conducts research for diver health, safety, and effectiveness to increase understanding of human performance and enhanced diver stress management and survivability in high stress environments such as in cold/warm water and at altitude. This project also validates and improves the accuracy of assumptions associated with equipment testing and certification, diving procedures, and diver biomedical physiology.

Deliverables for DISSUB include: medical guidance/procedures increasing submariner survivability for submarine escape and rescue (including new Submarine Rescue Diving and Recompression System (SRDRS)), life support parameters, medical procedures for life support; exposure and mitigation guidance for atmospheric contaminants, high levels of oxygen and/or carbon dioxide; prevention and treatment of decompression sickness and pulmonary oxygen toxicity; and senior survivor expert decision system.

Deliverables for diver health and safety include: decompression guidance in extreme environment diving with various breathing mixtures, temperatures, durations, and altitudes; exposure guidance for oxygen breathing; diver performance guidance based on physiological effects of diving; enhanced underwater swimming efficiency; enhanced diver thermal protection; collection of operational diving depth/time profiles to predict decompression risk, and exposure and mitigation guidance for divers experiencing underwater continuous noise, impulse noise, or underwater blast.

Requirements:
OPNAVINST 3150.27C, Navy Diving Policy and Joint Military Diving Technology and Training Program, 24 Jun 2016
Navy Salvage and Navy Diving Capabilities-Based Assessment (CBA) Report, 19 Dec 2013
NAPDD #587-873, Deep Submergence Biomedical Development, 23 Nov 1999
NAVSEA Instruction 3900.10A, Management of the Deep Submergence Biomedical Research and Development Program, 6 Nov 2018
Navy Diving Initial Capabilities Document (ICD)

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Deep Submergence Bio Med Dev - Diver Health and Safety	2.663	2.247	2.220	0.000	2.220
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0099 / *Deep Submergence Bio Med Dev*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Description: Diver Health and Safety Research: Novel methods for decompression safety and treatment of decompression sickness/arterial gas embolism. Advanced decompression models for extreme environments, including thermally challenging, long duration, multi-gas, and/or diving at altitude. Diving physiology advances in exercise, thermal exposure, oxygen/carbon dioxide alterations, other gas mixture alternations, hydration, and sustained operations. Develop pulmonary oxygen toxicity exposure limits. Provide pulmonary and Central Nervous System (CNS) oxygen toxicity mitigation strategies. Develop an advanced diver thermal model. Develop advanced insulation garments for diver thermal protection. Develop guidance for optimizing thermal control during decompression. Develop guidelines for conduct of diving operations at altitude. Develop guidance for infra- and ultra-sound diver exposure. Continue collection of operational and research dive data for inclusion in advanced probabilistic decompression models. Investigate diver in-water maladies. Develop/ improve real-time decompression guidance and dive planning. Research procedures for assessing and mitigating risk for diving in contaminated water. ***FY 2020 Plans:*** * Multi-Year Project Support: Completion of projects initiated in prior fiscal years will be supported where progress is deemed acceptable and project goals remain valid and attainable. * Improve Safety of Rebreather Diving: Rebreather diving entails the highest risk diving performed by Navy personnel. Work is ongoing in this area of focus for the program and projects addressing these concerns will also be solicited in future Broad Agency Announcements. This work is planned to continue into FY-21 and FY-22. * Improve Diver Safety Through Innovative Monitoring Techniques: Technological advances are accelerating enabling broad physiologic monitoring of warfighters. We will pursue methods to translate these technologies into the undersea environment. We will also develop programs and procedures to monitor diver health longitudinally, to assess long-term health impacts of Navy diving. This work is planned to continue into FY-21 and FY-22. * Improve Thermoregulation and Thermal Monitoring: Thermal control for divers remains a top priority and a long-term area of focus for the program due to the mission-limiting nature of this challenge. This work is planned to continue into FY-21 and FY-22.					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0099 / *Deep Submergence Bio Med Dev*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
* Improve Naval Special Operations Training Safety: Understanding and preventing Immersion Pulmonary Edema will help develop novel approaches to improving special operations training safety. * Develop Real-Time Decompression Calculation Capability for Next Generation Navy Dive Computer: Current advances in computing power are enabling embedded real-time probabilistic decompression models into diver computers. This will be the next significant leap forward in decompression dive planning and is expected to enable risk-based decompression planning. This work is planned to continue into FY-21 and FY-22. ***FY 2021 Base Plans:*** * Multi-Year Project Support: Completion of projects initiated in prior fiscal years will be supported where progress is deemed acceptable and project goals remain valid and attainable. * Pursue Approval of Medication Use to Prevent O2 Toxicity: Cutting edge approaches using medications and supplements to mitigate all forms of oxygen toxicity will be pursued, to include defining the FDA approval process. Work will be sponsored to streamline this important aspect of future research and establish the organizational connections to ensure success. * Diver Hearing Conservation: Continue work to quantify acoustic exposures to divers and thus support hearing loss risk mitigation. * Improve Contaminated Water Diving Risk Assessment: Develop real-time water sampling and analysis methods to determine risk and inform diver protection levels. * Optimize Understanding of Hydration Status Impact on Divers: Develop validated models and guidance related to optimizing hydration and rehydration in divers. * Develop Mitigation and Counter-Measures to Whole Body Oxygen Toxicity: Support effort to identify operationally useful solutions to counter the performance decrements associated with whole body oxygen toxicity. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0099 / *Deep Submergence Bio Med Dev*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
There is a minimal decrease in the funding allocated for Diver Health between FY20 and FY21. This 1% decline can be explained by small differences in the total labor costs associated with planned projects across these two fiscal years. Both budget allocations reflect continued strong interest in addressing challenging physiologic problems related to enhancing diver performance and range of operations.					
Title: Deep Submergence Bio Med Dev - Submarine Escape & Rescue	1.648	2.113	2.221	0.000	2.221
Articles:	-	-	-	-	-
Description: Submarine Rescue/Escape Research: Provide decompression procedures for pressurized Submarine Rescue Diving and Recompression System (SRDRS) operators. Investigate adjunctive therapies for treating Disabled Submarine (DISSUB) survivors. Provide updated guidance for food, water, clothing, medical supplies, to enhance survival of submarine crews awaiting rescue. Develop/provide flexible computer-generated decompression schedules for wide range of conditions in a DISSUB. Develop DISSUB medical triage procedures and support DISSUB survival trials. Develop mitigation strategies to reduce hyperbaric oxygen exposures in closed vehicles/compartments. Develop treatment guidance for decompression sickness and arterial gas embolism in submarine escape and rescue. Investigate the use of novel pharmacologic agents to reduce decompression risk and/or oxygen toxicity in submarine rescues. Develop/deploy toxic gas analyzer for use in pressurized DISSUB rescue. Investigate interventions for toxicological problems in DISSUB survivors. Develop strategies to minimize decompression sickness and arterial gas embolism with Submarine Escape and Surface Survival Personnel Equipment (SESSPE) training.					
FY 2020 Plans: * Multi-Year Project Support: Completion of projects initiated in prior fiscal years will be supported where progress is deemed acceptable and project goals remain valid and attainable. * Development of a New Simplified Toxic Gas Detector for DISSUB: New technology has been identified which has the potential to simplify detection and quantification of toxic gas presence in a disabled submarine situation, allowing rapid atmosphere contamination assessment by rescue forces. This work is planned to continue into FY-21 and FY-22. * Improve Guidance in the Submarine Rescue System Decompression Plan: The Submarine Rescue Submersible (SRS) Decompression Plan (SH420-AA-PRO-010) is a living document which will be updated based on results from relevant studies completed in prior years. As procedural testing proceeds in efforts to					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0099 / *Deep Submergence Bio Med Dev*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
certify the rescue system, additional biomedical concerns are expected to arise and will be addressed. This work is planned to continue into FY-21 and FY-22. * Optimize Submariner Cognition and Decision-Making in DISSUB: This will remain an area of focus for the program in an effort to mitigate factors which are expected to diminish effectiveness of personnel, particularly leaders, onboard a DISSUB. This work is planned to continue into FY-21 and FY-22. * Update DISSUB Rescue Planner: As with the Navy Dive Planner, a need to update and upgrade the DISSUB Rescue Planner is anticipated as Fleet use expands. This work is planned to continue into FY-21 and FY-22. ***FY 2021 Base Plans:*** * Multi-Year Project Support: Completion of projects initiated in prior fiscal years will be supported where progress is deemed acceptable and project goals remain valid and attainable. * Explore Utility of Ketone Esters in DISSUB Scenario: Sponsor research looking at the effectiveness of ketone esters and/or salts to induce ketosis and mitigate risk of O2 Toxicity when oxygen prebreathe is indicated to improve survival during pressurized DISSUB rescue. * Assess Impact of CO2 on Pressurized DISSUB survival: We will sponsor animal research to answer the question regarding whether elevated CO2 levels will accelerate onset of Pulmonary O2 Toxicity and increase mortality during high internal pressure DISSUB scenarios. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** There is a small increase in the funding allocated for Submarine Rescue between FY20 and FY21. This reflects increasing interest in and demand for answers related to improving the survival of submariners at the most extreme depth/time profiles for submarine rescue.					
Accomplishments/Planned Programs Subtotals	4.311	4.360	4.441	0.000	4.441

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0099 / *Deep Submergence Bio Med Dev*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

Integrated thrust area teams (e.g., decompression research) are established with university, commercial, and in-house Navy labs to jointly execute biomedical Research and Development (R&D). Peer review of research proposals accomplished by independent Technical Advisory Board. Annual review of progress by Executive Review Board (CNO/NAVSEA/ONR/BUMED). Program management by 0-6 Undersea Medical Officer. Contracting by competitive process using Business Area Analysis (BAA) and leveraging Office of Naval Research (ONR) capabilities.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0099 / *Deep Submergence Bio Med Dev*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	WR	NEDU : Panama City, FL	24.093	0.622	Nov 2018	0.548	Nov 2019	0.797	Nov 2020	-		0.797	Continuing	Continuing	Continuing
Development Test & Evaluation	WR	NMRC : Silver Spring, MD	9.701	1.135	Nov 2018	0.689	Nov 2019	0.939	Nov 2020	-		0.939	Continuing	Continuing	Continuing
Development Test & Evaluation	Various	DUKE UNIV : Durham, NC	2.121	1.311	Jan 2019	0.802	Nov 2019	0.700	Jan 2021	-		0.700	Continuing	Continuing	Continuing
Development Test & Evaluation	C/CPFF	ROH : Arlington, VA	0.282	0.030	May 2019	0.030	Nov 2019	0.030	Nov 2020	-		0.030	Continuing	Continuing	Continuing
Development Test & Evaluation	C/FFP	WISCONSIN : Madison, WI	1.336	0.335	Feb 2019	0.461	Nov 2019	0.457	Nov 2020	-		0.457	Continuing	Continuing	Continuing
Development Test & Evaluation	C/FFP	SUNY : Buffalo, NY	1.273	0.608	Apr 2019	0.880	Nov 2019	0.616	Nov 2020	-		0.616	Continuing	Continuing	Continuing
Development Test & Evaluation	WR	NSWC : Panama City, FL	0.159	0.041	Nov 2018	0.000		0.000		-		0.000	0.000	0.200	-
Development Test & Evaluation	C/CPFF	JHU APL : Laurel, MD	0.000	0.179	Jan 2019	0.497	Nov 2019	0.300	Nov 2020	-		0.300	0.000	0.976	-
Development Test & Evaluation	WR	NAVWAR : San Diego, CA	0.000	0.000	Jul 2019	0.403	Nov 2019	0.555	Nov 2020	-		0.555	0.000	0.958	-
		Subtotal	38.965	4.261		4.310		4.394		-		4.394	Continuing	Continuing	N/A

Remarks

1. There is a notable increase in the program funding allocation to NEDU in FY21 (increase from 0.548 to 0.797). This relates to the planned funding of an expensive two-year effort entitled '21st Century Surface Supplied Heliox Decompression Tables' which will entail intensive human subject testing using divers on higher risk dive profiles. This study received strong support from the Technical Advisory Board for advancing US Navy diving capabilities.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Various	Various : Various	0.546	0.050	Oct 2018	0.050	Oct 2019	0.047	Nov 2020	-		0.047	Continuing	Continuing	Continuing
		Subtotal	0.546	0.050		0.050		0.047		-		0.047	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603713N / *Ocean Engineering Tech Dev*	Project (Number/Name) 0099 / *Deep Submergence Bio Med Dev*	

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	39.511	4.311		4.360		4.441		-		4.441	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0099 / *Deep Submergence Bio Med Dev*

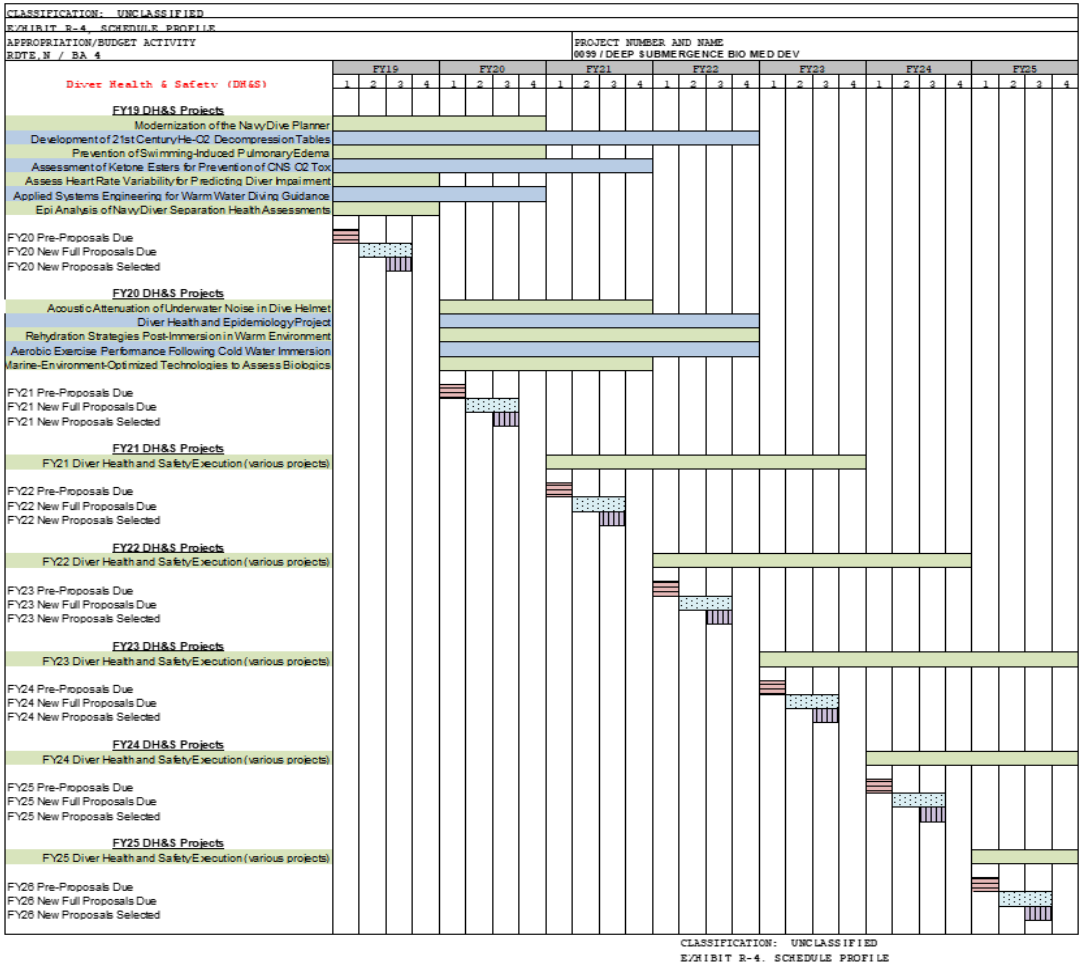

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0099 / *Deep Submergence Bio Med Dev*

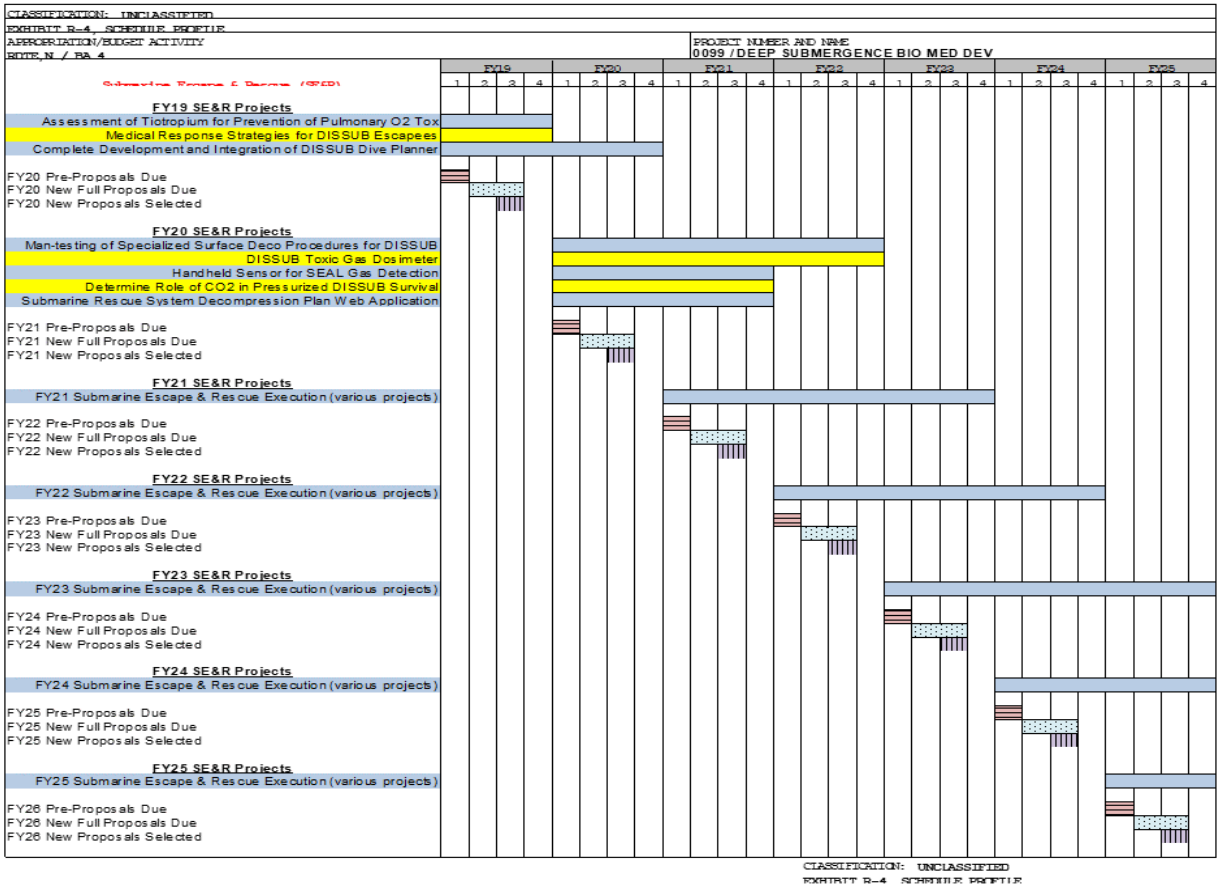

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0099 / *Deep Submergence Bio Med Dev*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0099				
Diver Health & Safety (DH&S): FY19 DH&S Projects: Modernization of the Navy Dive Planner	1	2019	4	2020
Diver Health & Safety (DH&S): FY19 DH&S Projects: Development of 21st Century He-O2 Decompression Tables	1	2019	4	2022
Diver Health & Safety (DH&S): FY19 DH&S Projects: Prevention of Swimming-Induced Pulmonary Edema	1	2019	4	2020
Diver Health & Safety (DH&S): FY19 DH&S Projects: Assessment of Ketone Esters for Prevention of CNS O2 Tox	1	2019	4	2021
Diver Health & Safety (DH&S): FY19 DH&S Projects: Assess Heart Rate Variability for Predicting Diver Impairment	1	2019	4	2019
Diver Health & Safety (DH&S): FY19 DH&S Projects: Applied Systems Engineering for Warm Water Diving Guidance	1	2019	4	2020
Diver Health & Safety (DH&S): FY19 DH&S Projects: 'Epi Analysis of Navy Diver Separation Health Assessments	1	2019	4	2019
Diver Health & Safety (DH&S): FY20 Pre-Proposals Due	1	2019	1	2019
Diver Health & Safety (DH&S): FY20 New Full Proposals Due	2	2019	3	2019
Diver Health & Safety (DH&S): FY20 New Proposals Selected	3	2019	3	2019
Diver Health & Safety (DH&S): FY20 DH&S Projects: Acoustic Attenuation of Underwater Noise in Dive Helmet	1	2020	4	2021
Diver Health & Safety (DH&S): FY20 DH&S Projects: Diver Health and Epidemiology Project	1	2020	4	2022
Diver Health & Safety (DH&S): FY20 DH&S Projects: Rehydration Strategies Post-Immersion in Warm Environment	1	2020	4	2022

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0099 / *Deep Submergence Bio Med Dev*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Diver Health & Safety (DH&S): FY20 DH&S Projects: Aerobic Exercise Performance Following Cold Water Immersion	1	2020	4	2022
Diver Health & Safety (DH&S): FY20 DH&S Projects: Marine-Environment-Optimized Technologies to Assess Biologics	1	2020	4	2021
Diver Health & Safety (DH&S): FY21 Pre-Proposals Due	1	2020	1	2020
Diver Health & Safety (DH&S): FY21 New Full Proposals Due	2	2020	3	2020
Diver Health & Safety (DH&S): FY21 New Proposals Selected	3	2020	3	2020
Diver Health & Safety (DH&S): 'FY21 DH&S Projects: 'FY21 Diver Health and Safety Execution (various projects)	1	2021	4	2023
Diver Health & Safety (DH&S): FY22 Pre-Proposals Due	1	2021	1	2021
Diver Health & Safety (DH&S): FY22 New Full Proposals Due	2	2021	3	2021
Diver Health & Safety (DH&S): FY22 New Proposals Selected	3	2021	3	2021
Diver Health & Safety (DH&S): 'FY22 DH&S Projects: 'FY22 Diver Health and Safety Execution (various projects)	1	2022	4	2024
Diver Health & Safety (DH&S): FY23 Pre-Proposals Due	1	2022	1	2022
Diver Health & Safety (DH&S): FY23 New Full Proposals Due	2	2022	3	2022
Diver Health & Safety (DH&S): FY23 New Proposals Selected	3	2022	3	2022
Diver Health & Safety (DH&S): 'FY23 DH&S Projects: 'FY23 Diver Health and Safety Execution (various projects)	1	2023	4	2025
Diver Health & Safety (DH&S): FY24 Pre-Proposals Due	1	2023	1	2023
Diver Health & Safety (DH&S): FY24 New Full Proposals Due	2	2023	3	2023
Diver Health & Safety (DH&S): FY24 New Proposals Selected	3	2023	3	2023
Diver Health & Safety (DH&S): 'FY24 DH&S Projects: 'FY24 Diver Health and Safety Execution (various projects)	1	2024	4	2025
Diver Health & Safety (DH&S): FY25 Pre-Proposals Due	1	2024	1	2024
Diver Health & Safety (DH&S): FY25 New Full Proposals Due	2	2024	3	2024
Diver Health & Safety (DH&S): FY25 New Proposals Selected	3	2024	3	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0099 / *Deep Submergence Bio Med Dev*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Diver Health & Safety (DH&S): 'FY25 DH&S Projects: 'FY25 Diver Health and Safety Execution (various projects)	1	2025	1	2025
Diver Health & Safety (DH&S): FY26 Pre-Proposals Due	1	2025	1	2025
Diver Health & Safety (DH&S): FY26 New Full Proposals Due	2	2025	3	2025
Diver Health & Safety (DH&S): FY26 New Proposals Selected	3	2025	3	2025
Submarine Escape & Rescue (SE&R): 'FY19 SE&R Projects: Assessment of Tiotripium for Prevention of Pulmonary O2 Tox	1	2019	4	2019
Submarine Escape & Rescue (SE&R): 'FY19 SE&R Projects: Medical Response Strategies for DISSUB Escapees	1	2019	4	2019
Submarine Escape & Rescue (SE&R): 'FY19 SE&R Projects: Complete Development and Integration of DISSUB Dive Planner	1	2019	4	2020
Submarine Escape & Rescue (SE&R): FY20 Pre-Proposals Due	1	2019	1	2019
Submarine Escape & Rescue (SE&R): FY20 New Full Proposals Due	2	2019	3	2019
Submarine Escape & Rescue (SE&R): FY20 New Proposals Selected	3	2019	3	2019
Submarine Escape & Rescue (SE&R): 'FY20 SE&R Projects: 'Man-testing of Specialized Surface Deco Procedures for DISSUB	1	2020	4	2022
Submarine Escape & Rescue (SE&R): 'FY20 SE&R Projects: DISSUB Toxic Gas Dosimeter	1	2020	4	2022
Submarine Escape & Rescue (SE&R): 'FY20 SE&R Projects: Handheld Sensor for SEAL Gas Detection	1	2020	4	2021
Submarine Escape & Rescue (SE&R): 'FY20 SE&R Projects: Determine Role of CO2 in Pressurized DISSUB Survival	1	2020	4	2021
Submarine Escape & Rescue (SE&R): 'FY20 SE&R Projects: Submarine Rescue System Decompression Plan Web Application	1	2020	4	2021
Submarine Escape & Rescue (SE&R): FY21 Pre-Proposals Due	1	2020	1	2020
Submarine Escape & Rescue (SE&R): FY21 New Full Proposals Due	2	2020	3	2020
Submarine Escape & Rescue (SE&R): FY21 New Proposals Selected	3	2020	3	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0099 / *Deep Submergence Bio Med Dev*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Submarine Escape & Rescue (SE&R): FY21 SE&R Projects: FY21 Submarine Escape & Rescue Execution (various projects)	1	2021	4	2023
Submarine Escape & Rescue (SE&R): FY22 Pre-Proposals Due	1	2021	1	2021
Submarine Escape & Rescue (SE&R): FY22 New Full Proposals Due	2	2021	3	2021
Submarine Escape & Rescue (SE&R): FY22 New Proposals Selected	3	2021	3	2021
Submarine Escape & Rescue (SE&R): FY22 SE&R Projects: FY22 Submarine Escape & Rescue Execution (various projects)	1	2022	4	2024
Submarine Escape & Rescue (SE&R): FY23 Pre-Proposals Due	1	2022	1	2022
Submarine Escape & Rescue (SE&R): FY23 New Full Proposals Due	2	2022	3	2022
Submarine Escape & Rescue (SE&R): FY23 New Proposals Selected	3	2022	3	2022
Submarine Escape & Rescue (SE&R): FY23 SE&R Projects: FY23 Submarine Escape & Rescue Execution (various projects)	1	2023	4	2025
Submarine Escape & Rescue (SE&R): FY24 Pre-Proposals Due	1	2023	1	2023
Submarine Escape & Rescue (SE&R): FY24 New Full Proposals Due	2	2023	3	2023
Submarine Escape & Rescue (SE&R): FY24 New Proposals Selected	3	2023	3	2023
Submarine Escape & Rescue (SE&R): FY24 SE&R Projects: FY24 Submarine Escape & Rescue Execution (various projects)	1	2024	4	2025
Submarine Escape & Rescue (SE&R): FY25 Pre-Proposals Due	1	2024	1	2024
Submarine Escape & Rescue (SE&R): FY25 New Full Proposals Due	2	2024	3	2024
Submarine Escape & Rescue (SE&R): FY25 New Proposals Selected	3	2024	3	2024
Submarine Escape & Rescue (SE&R): FY25 SE&R Projects: FY25 Submarine Escape & Rescue Execution (various projects)	1	2025	4	2025
Submarine Escape & Rescue (SE&R): FY26 Pre-Proposals Due	1	2025	1	2025
Submarine Escape & Rescue (SE&R): FY26 New Full Proposals Due	2	2025	3	2025
Submarine Escape & Rescue (SE&R): FY26 New Proposals Selected	3	2025	3	2025

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
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COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
0394: *Shallow Depth Diving EQ*	31.005	1.386	1.259	1.905	-	1.905	2.343	1.697	1.576	1.607	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops systems to support submarine escape and rescue missions, and conventional diver operations. Diver operations include ship husbandry, salvage/ recovery, and submarine rescue operations to support national, as well as Navy, needs around the world. Modern certifiable diving systems that ensure diver safety and allow maximum work efficiency will replace currently antiquated systems. R&D will be performed in the areas of diver efficiency, visual enhancement, contaminated water diving, diver thermal protection, and recompression chamber technology.

FY2021 funding in project 0394 increased by $1.028M. $0.8M of the FY21 increase is under Submarine Rescue Diving and Recompression System (SRDRS) in order to design and develop an improved pressurized shallow water capable submarine transfer skirt.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Shallow Depth Diving EQ - Diving	1.338	1.209	1.054	0.000	1.054
Articles:	-	-	-	-	-
Description: Continued research into all engineering and equipment design aspects of manned diving, to include: life support, contaminated water, SCUBA, gas analysis, thermal protection, saturation diving, and divers tools.					
FY 2020 Plans: * Diver Augmented Visual Display - Hi Resolution Sonar: Continue design and testing of a high resolution, high frequency, short range visualization system (Close in Visualization System, CIVS) that will integrate with the DAVD. This will allow accurate, real time visualization for use when conducting underwater search, salvage, ship husbandry, or construction in low visibility waters.					
* FLEX Chamber Development: Complete the design and fabrication of the prototype flexible, double lock, recompression chamber. This year will see the completion of all developmental work for the system. The full prototype model will be built, tested and delivered to the US Navy for follow-on independent testing.					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
* KM-97 Cold Water Testing - Phase 2: Develop and prove the effectiveness of countermeasures that can be implemented to enhance the KM-97's cold water performance. ***FY 2021 Base Plans:*** * Diver Augmented Visual Display - Hi Resolution Sonar: Continue design and testing of a high resolution, high frequency, short range visualization system (Close in Visualization System, CIVS) that will integrate with the DAVD. This will allow accurate, real time visualization for use when conducting underwater search, salvage, ship husbandry, or construction in low visibility waters. * DAVD System Improvement: Start work on developing a self contained DAVD that does not rely on surface umbilicals or fixed sonar installations. This will allow HUD systems and onboard spatial awareness without the requirement to be tethered to the surface. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Reduced development for DAVD this year will extend design and testing of Close-In-Visualization System (CIVS) into FY22.					
Title: Shallow Depth Diving EQ - Submarine Rescue ***Articles:*** ***Description:*** Submarine rescue decompression system permits decompression of submarine crew rescued from a pressurized, disabled submarine of pressures up to 6 atmospheres (ATA). ***FY 2020 Plans:*** Engineering evaluation of system capability increases. ***FY 2021 Base Plans:*** Design and development of equipment to improve the pressurized shallow water mating capability of the SRDRS. Pressurized shallow water mating is a critical capability gap. Current capability only covers 60 percent of the world's rescuable waters. The US submarine recue system currently mates to US and Foreign submarine through an articulating transfer skirt. Funding provides for testing and engineering needed to develop a new	0.048 -	0.050 -	0.851 -	0.000 -	0.851 -

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Transfer Skirt mating seal and assistive equipment to allow for shallower submarine mating capability and improve the ability to rescue submariners from a Distressed Submarine (DISSUB). ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Design and development of an improved pressurized shallow water capable transfer skirt.					
Accomplishments/Planned Programs Subtotals	1.386	1.259	1.905	0.000	1.905

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• OPN/0955: *Deep Subm Sys Proj (DSSP) Equip*	3.629	2.909	2.918	-	2.918	10.450	3.108	3.149	3.210	Continuing	Continuing
• OPN/1130: *Diving and Salvage Equipment*	10.706	11.854	11.143	-	11.143	11.201	11.448	11.603	11.832	0.000	140.507

Remarks

D. Acquisition Strategy

Diving Program acquisitions are executed and managed by SEA00C. Acquisitions are made for both COTS and developmental items as required to ensure adequate operational availability and safety of the diver. R&D projects are selected in March for a November award using a Broad Area Announcement.
Submarine Rescue Systems - SBIR contract is in place to support development and design.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603713N / *Ocean Engineering Tech Dev*	Project (Number/Name) 0394 / *Shallow Depth Diving EQ*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering - Design, Integration (PMS-391 TUP)	C/CPFF	Oceaneering : Hanover, MD	26.933	0.048	Jan 2019	0.000		0.000		-		0.000	0.000	26.981	-
Systems Engineering - Design, Integration (PMS-391)	WR	NUWC : Newport, RI	0.000	0.000		0.050	Dec 2019	0.201	Nov 2020	-		0.201	0.000	0.251	-
Systems Engineering - Design, Integration (PMS-391)	Various	Various : Various	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Systems Engineering - Design, Integration (PMS-391)	C/CPFF	Physical Optics : Los Angeles, CA	0.000	0.000		0.000		0.650	Jan 2021	-		0.650	0.000	0.650	-
Diving Equipment Product Development (00C)	C/CPFF	Phoenix : Largo, MD	0.430	0.000		0.000		0.000		-		0.000	0.000	0.430	-
Diving Equipment Product Development (00C)	C/CPFF	Vanderbilt Unversity : Nashville, TN	0.000	0.503	Oct 2018	0.589	Oct 2019	0.374	Oct 2020	-		0.374	0.000	1.466	-
Diving Equipment Product Development (00C)	C/FFP	Coda Octopus : Orlando, FL	0.000	0.000		0.000		0.527	Oct 2020	-		0.527	Continuing	Continuing	Continuing
Diving Equipment Product Development (00C)	C/CPFF	PCCI : Alexandria, VA	1.209	0.621	Jan 2019	0.463	Jan 2020	0.000		-		0.000	0.000	2.293	-
Diving Equipment Product Development (00C)	C/CPFF	Penn state UARC : Not Specified	0.600	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Diving Equipment Product Development (00C)	WR	NSWC-PC : Panama City, FL	0.624	0.033	Mar 2019	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	29.796	1.205		1.102		1.752		-		1.752	Continuing	Continuing	N/A

Remarks

Funding of $.650M in FY21 is planned to be placed on the SBIR Phase II contract with Physical Optics.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603713N / *Ocean Engineering Tech Dev*	Project (Number/Name) 0394 / *Shallow Depth Diving EQ*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test and Evaluation (00C)	WR	NEDU : Panama City, FL	0.526	0.147	Jan 2019	0.057	Jan 2020	0.064	Jan 2021	-		0.064	0.000	0.794	-
		Subtotal	0.526	0.147		0.057		0.064		-		0.064	0.000	0.794	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel (00C)	Various	NAVSEA : Washington, DC	0.153	0.006	Oct 2018	0.020	Oct 2019	0.015	Oct 2020	-		0.015	Continuing	Continuing	Continuing
SBIR Assessment	Various	Various : Various	0.513	0.000		0.051	Oct 2019	0.045	Oct 2020	-		0.045	0.000	0.609	-
Program Management Support (00C)	C/CPFF	Unknown : Not Specified	0.017	0.028	Mar 2019	0.029	Mar 2020	0.029	Mar 2021	-		0.029	Continuing	Continuing	Continuing
		Subtotal	0.683	0.034		0.100		0.089		-		0.089	Continuing	Continuing	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	31.005	1.386		1.259		1.905		-		1.905	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0394 / *Shallow Depth Diving EQ*

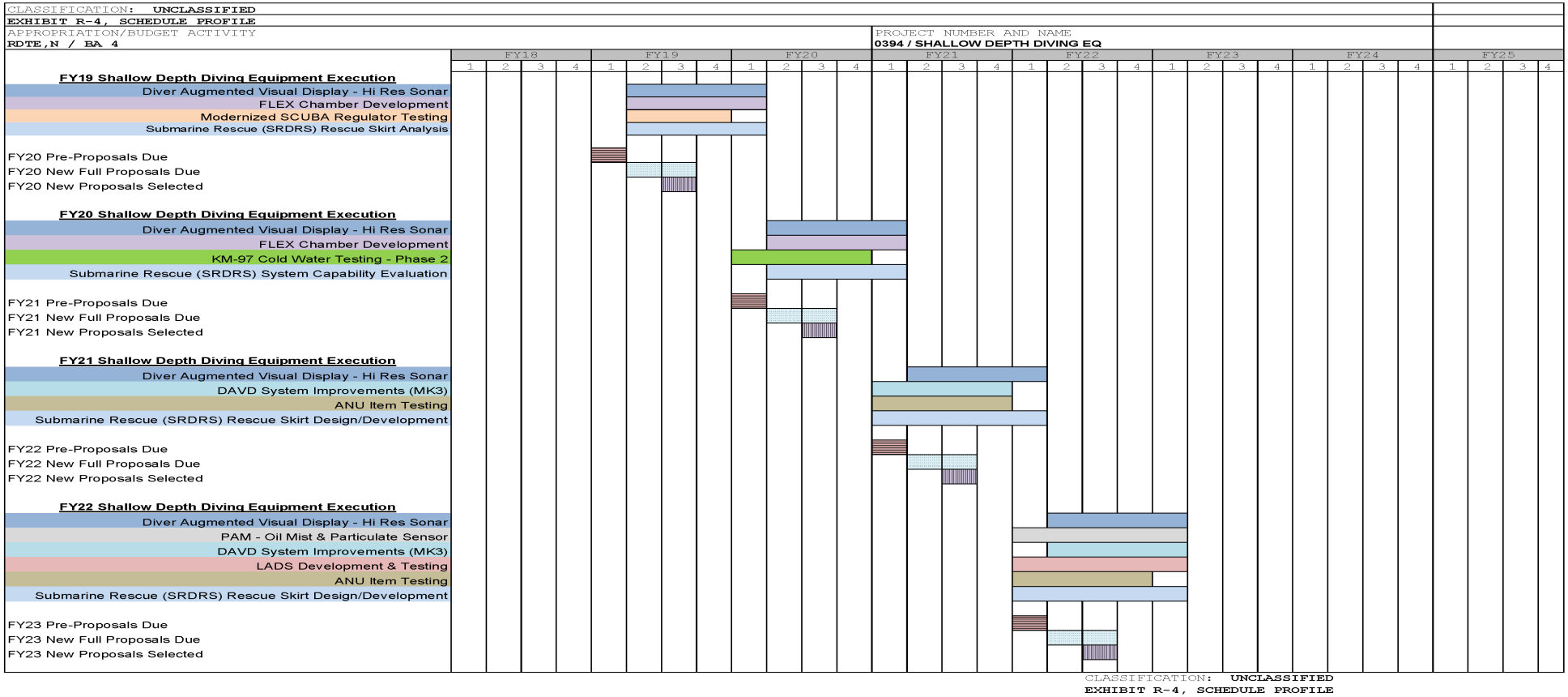
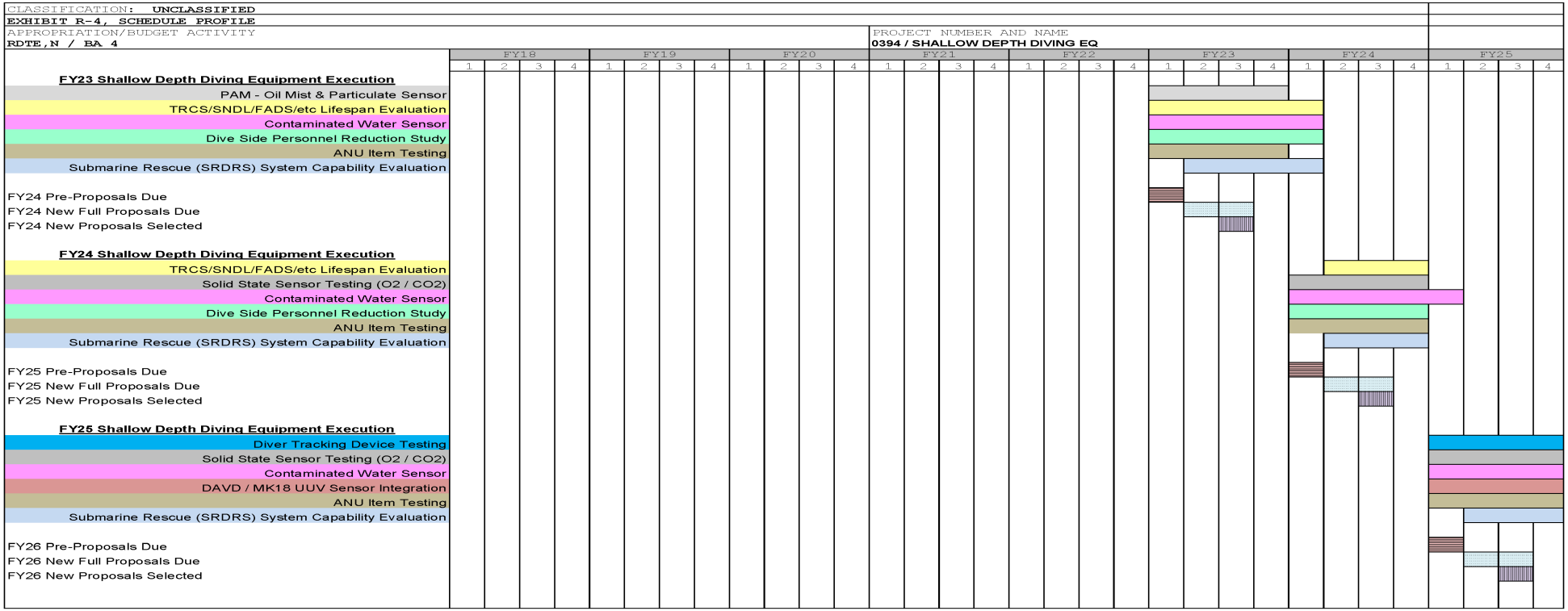


Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0394 / *Shallow Depth Diving EQ*

CLASSIFICATION: UNCLASSIFIED
EXHIBIT R-4, SCHEDULE PROFILE
APPROPRIATION/BUDGET ACTIVITY
RDTE,N / BA 4
PROJECT NUMBER AND NAME
0394 / SHALLOW DEPTH DIVING EQ



CLASSIFICATION: UNCLASSIFIED
EXHIBIT R-4, SCHEDULE PROFILE

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0394 / *Shallow Depth Diving EQ*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0394				
FY19 Shallow Depth Diving Equipment Execution: Diver Augmented Visual Display - Hi Res Sonar	2	2019	1	2020
FY19 Shallow Depth Diving Equipment Execution: FLEX Chamber Development	2	2019	1	2020
FY19 Shallow Depth Diving Equipment Execution: Modernized SCUBA Regulator Testing	2	2019	4	2019
FY19 Shallow Depth Diving Equipment Execution: Submarine Rescue (SRDRS) Rescue Skirt Analysis	2	2019	1	2020
FY20 Pre-Proposals Due	1	2019	1	2019
FY20 New Full Proposals Due	2	2019	3	2019
FY20 New Proposals Selected	3	2019	3	2019
FY20 Shallow Depth Diving Equipment Execution: Diver Augmented Visual Display - Hi Res Sonar	2	2020	1	2021
FY20 Shallow Depth Diving Equipment Execution: FLEX Chamber Development	2	2020	1	2021
FY20 Shallow Depth Diving Equipment Execution: KM-97 Cold Water Testing - Phase 2	1	2020	4	2020
FY20 Shallow Depth Diving Equipment Execution: Submarine Rescue (SRDRS) System Capability Evaluation	2	2020	1	2021
FY20 Shallow Depth Diving Equipment Execution: FY21 Pre-Proposals Due	1	2020	1	2020
FY20 Shallow Depth Diving Equipment Execution: FY21 New Full Proposals Due	2	2020	3	2020
FY20 Shallow Depth Diving Equipment Execution: FY21 New Proposals Selected	3	2020	3	2020
FY21 Shallow Depth Diving Equipment Execution: Diver Augmented Visual Display - Hi Res Sonar	2	2021	1	2022
FY21 Shallow Depth Diving Equipment Execution: DAVD System Improvements (MK3)	1	2021	4	2021

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0394 / *Shallow Depth Diving EQ*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
FY21 Shallow Depth Diving Equipment Execution: ANU Item Testing	1	2021	4	2021
FY21 Shallow Depth Diving Equipment Execution: Submarine Rescue (SRDRS) Rescue Skirt Design/Development	1	2021	1	2022
FY21 Shallow Depth Diving Equipment Execution: FY22 Pre-Proposals Due	1	2021	1	2021
FY21 Shallow Depth Diving Equipment Execution: FY22 New Full Proposals Due	2	2021	3	2021
FY21 Shallow Depth Diving Equipment Execution: FY22 New Proposals Selected	3	2021	3	2021
FY22 Shallow Depth Diving Equipment Execution: Diver Augmented Visual Display - Hi Res Sonar	2	2022	1	2023
FY22 Shallow Depth Diving Equipment Execution: 'PAM - Oil Mist & Particulate Sensor	1	2022	1	2023
FY22 Shallow Depth Diving Equipment Execution: DAVD System Improvements (MK3)	2	2022	1	2023
FY22 Shallow Depth Diving Equipment Execution: LADS Development & Testing	1	2022	1	2023
FY22 Shallow Depth Diving Equipment Execution: ANU Item Testing	1	2022	4	2022
FY22 Shallow Depth Diving Equipment Execution: Submarine Rescue (SRDRS) Rescue Skirt Design/Procurement	1	2022	1	2023
FY23 Pre-Proposals Due	1	2022	1	2022
FY23 New Full Proposals Due	2	2022	3	2022
FY23 New Proposals Selected	3	2022	3	2022
'FY23 Shallow Depth Diving Equipment Execution: 'PAM - Oil Mist & Particulate Sensor	1	2023	4	2023
'FY23 Shallow Depth Diving Equipment Execution: TRCS/SNDL/FADS/etc Lifespan Evaluation	1	2023	1	2024
'FY23 Shallow Depth Diving Equipment Execution: Contaminated Water Sensor	1	2023	1	2024
'FY23 Shallow Depth Diving Equipment Execution: Dive Side Personnel Reduction Study	1	2023	1	2024
'FY23 Shallow Depth Diving Equipment Execution: ANU Item Testing	1	2023	4	2023
'FY23 Shallow Depth Diving Equipment Execution: Submarine Rescue (SRDRS) System Capability Evaluation	2	2023	1	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0394 / *Shallow Depth Diving EQ*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
FY24 Pre-Proposals Due	1	2023	1	2023
FY24 New Full Proposals Due	2	2023	3	2023
FY24 New Proposals Selected	3	2023	3	2023
'FY24 Shallow Depth Diving Equipment Execution: TRCS/SNDL/FADS/etc Lifespan Evaluation	2	2024	4	2024
'FY24 Shallow Depth Diving Equipment Execution: Solid State Sensor Testing (O2 / CO2)	1	2024	4	2024
'FY24 Shallow Depth Diving Equipment Execution: Contaminated Water Sensor	1	2024	1	2025
'FY24 Shallow Depth Diving Equipment Execution: Dive Side Personnel Reduction Study	1	2024	4	2024
'FY24 Shallow Depth Diving Equipment Execution: ANU Item Testing	1	2024	4	2024
'FY24 Shallow Depth Diving Equipment Execution: Submarine Rescue (SRDRS) System Capability Evaluation	2	2024	4	2024
FY25 Pre-Proposals Due	1	2024	1	2024
FY25 New Full Proposals Due	2	2024	3	2024
FY25 New Proposals Selected	3	2024	3	2024
'FY25 Shallow Depth Diving Equipment Execution: Diver Tracking Device Testing	1	2025	4	2025
'FY25 Shallow Depth Diving Equipment Execution: Solid State Sensor Testing (O2 / CO2)	1	2025	4	2025
'FY25 Shallow Depth Diving Equipment Execution: Contaminated Water Sensor	1	2025	4	2025
'FY25 Shallow Depth Diving Equipment Execution: DAVD / MK18 UUV Sensor Integration	1	2025	4	2025
'FY25 Shallow Depth Diving Equipment Execution: ANU Item Testing	1	2025	4	2025
'FY25 Shallow Depth Diving Equipment Execution: Submarine Rescue (SRDRS) System Capability Evauation	2	2025	4	2025
FY26 Pre-Proposals Due	1	2025	1	2025
FY26 New Full Proposals Due	2	2025	3	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603713N / *Ocean Engineering Tech Dev*	**Project (Number/Name)** 0394 / *Shallow Depth Diving EQ*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
FY26 New Proposals Selected	3	2025	3	2025